A Work Project, presented as part of the requirements for the Award of a Master's degree in Management from the Nova School of Business and Economics.

EXPLORING EQUIPMENT-AS-A-SERVICE (EAAS): A COMPREHENSIVE STUDY OF COMPANY-LEVEL CONDITIONS AND IMPLEMENTATION STRATEGIES ON CURRENT AND POTENTIAL EAAS ADOPTIONS IN THE GERMAN MACHINERY AND MANUFACTURING INDUSTRY

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Abstract

This master thesis presents a comprehensive study on Equipment-as-a-Service (EaaS) adoption in the German machinery and manufacturing industry post-COVID-19 and over one year after the Russian invasion of Ukraine. It assesses EaaS from both provider and customer viewpoints, including a literature review, analysis of adoption drivers and inhibitors, and success conditions. By synthesizing literature and expert interviews, the study presents a holistic understanding of EaaS in the German context, emphasizing the need for provider-customer alignment in EaaS implementation. It offers key insights and lays a groundwork for future research and policy development in this emerging area.

Keywords

Equipment-as-a-Service (EaaS), Usage-based Business Models, Industrial Subscription, Pay-per-Use, Industrial Smart Product-service Systems, Business Model Innovation, Manufacturing Servitization

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List of Abbreviations

AI	Artificial Intelligence
AR	Augmented Reality
BC	Buying Center
CapEx	Capital Expenditures
DA	Data Analytics
EaaS	Equipment-as-a-Service
IoT	Internet of Things
IT	Information Technology
LCC	Lifecycle Costs
ML	Machine Learning
MVP	Minimum Viable Product
OBC	Outcome-based Contract
OEE	Overall Equipment Effectiveness
OEM	Original Equipment Manufacturer
OpEx	Operational Expenditures
PPU	Pay-per-Use
RQ	Research Question
SaaS	Software-as-a-Service
SME	Small and Medium-sized Enterprises
PSS	Product-service Systems

1 Introduction

The advent of the 2020s has been characterized by pronounced technological evolutions, notably within the realms of the Internet of Things (IoT). Such technological progressions have given rise to emergent business model paradigms, among which the Equipment-as-a-Service (EaaS) business model stands out. As machinery undergoes a transformative phase towards greater intelligence, it becomes imperative to scrutinize the potential avenues for capitalizing on these IoT-enabled innovations within the German machinery market context. Contemporary commercial environments are witnessing a salient transition: from asset ownership to the facilitation of service access. A transition that has already diffused globally in the software sector through cloud solutions and is known as "Software-as-a-Service" (SaaS). This phenomenon, often termed 'servitization', delineates a preference for the temporal use of equipment over its permanent possession (Baines et al. 2009). Given Germany's robust stature in the manufacturing and machinery sectors as third biggest machine exporter in the world measured by turnover, it is positioned uniquely to navigate and potentially lead this shift (VDMA 2023). In an era marked by escalating global industrial competition, geopolitical conflicts and a previous pandemic, it becomes exigent for German machinery entities to maintain, if not augment, their competitive edge. The strategic adoption or refinement of the EaaS paradigm could potentially bestow these entities with a pronounced competitive leverage, transcending regional confines and resonating on an international scale. Despite the attention EaaS has garnered across diverse sectors, a conspicuous research lacuna persists, particularly concerning the concepts' desirability, applicability, and ramifications within the 2023 German machinery landscape (Schaefers et al. 2021; Stojkovski et al. 2022). This study endeavors to address this void, aiming to offer invaluable insights beneficial for established and new industry practitioners, policy architects, and the academic community.

2 Research Objective

The research objective of this study is to investigate how drivers and inhibitors influencing the adoption or rejection of the EaaS model in the German machinery market changed in context of the COVID-19-pandemic and the Ukraine War. Further, the objective is to include the implications of these findings in future implementation strategies for machinery and equipment manufacturers. The objective is divided into four individual examinations, which each on their own investigate an academically and practically relevant subdomain that relates to the general research object. In the first section of this study, the examination assesses the drivers and inhibitors behind the adoption of EaaS models from an EaaS provider perspective in context of the beforementioned external shocks. Following on, the second section transfers this approach to the customer perspective. The third section evaluates current implementation barriers of EaaS model adaptions and contributes through an updated understanding to the overall research objective. In the fourth and last section, the key insights from each examination stream will be synthesized with the goal of designing a practice-oriented implementation framework for potential adopters within the German manufacturing industry. The following research questions will guide the examinations and allow for a comprehensive exploration of the manufacturing industries' current sentiment towards EaaS models:

Section I

RQ1: What are the current drivers of EaaS adoption among German machinery OEMs?

RQ2: What are the current inhibitors of EaaS adoption among German machinery OEMs?

RQ3: Which influence did external shocks, namely the COVID-pandemic and the Ukraine war have on the drivers and inhibitors of EaaS adoptions among respective OEMs?

Section II

RQ4: What are the current drivers of EaaS adoption among customers of German machinery OEMs?

RQ5: What are the current inhibitors of EaaS adoption among customers of German machinery OEMs?

RQ6: Which influence did external shocks, namely the COVID-pandemic and the Ukraine war have on the drivers and inhibitors of EaaS adoptions among respective customers?

Section III

RQ7: What were the persistent implementation barriers encountered during the adoption process of EaaS models?

RQ8: What are the necessary firm level conditions that enable OEMs to implement an EaaS?

RQ9: Which influence did external shocks, namely the COVID-pandemic and the Ukraine war have on the implementation of EaaS among German OEMs?

Section IV

RQ10: How can actual and potential EaaS provider personas be described according to current EaaS ecosystem participants?

RQ11: How can actual and potential EaaS customer personas be described according to current EaaS ecosystem participants?

RQ12: How can potential EaaS adaptors translate insights about implementation barriers into actionable implementation measures?

3 Methodology

The following section describes the chosen approach in terms of literature search, research method, candidate selection and interview evaluation method.

3.1 Literature Search

The document material was collected on September 29th, 2023, using a keyword search in the Scopus database. Scopus is one of the largest, trusted, source-neutral abstract and citation database curated by independent subject matter experts who are recognized leaders in their

fields. With the help of Scopus, the study only records verified scientific contributions in English. This ensures the scientific quality and internationality of the research contributions. The keywords relevant to the research objective are summarized in a search string. The following search string was used in the Scopus document search:

(ALL (equipment AND as AND a AND service) AND ALL (manufacturing OR machinery AND equipment) AND ALL (servitization) AND ALL (pay AND per AND use) AND ALL (germany)) AND PUBYEAR > 2009)

A total of 23 documents were found through the search string. Before starting the final analysis, the same search string was applied once again on November 14th 2023 on Scopus to ensure the completeness of the literature, resulting in the same 23 documents as on September 29th 2023. The selection process of the documents was carried out in two steps. In the first step, the titles and abstracts of the documents were analyzed. In the process, 2 documents were excluded that did not relate to the research question in terms of content. The remaining documents are listed in Table 1. In the second step, the remaining 21 documents were analyzed individually. The inclusion criteria were the content-related reference to the topics of “Equipment as a Service”, “Servitization”, “Pay-per-X”, “Manufacturing” and “Machinery Equipment”, proving all remaining 21 documents as relevant. To provide a fully comprehensive picture of the current state of literature, 22 additional sources were added to the analysis via manual research. Those 22 additional documents are a mix of peer reviewed journal articles, white papers from research institutes and consultancies as well as published PhD theses. Consequently, a total of 43 sources (Table 1) are the foundation to the comparative literature review parts in the three individual sections.

3.2 Research Method

In consideration of research methods, most research in this field uses descriptive case studies to illustrate servitization in manufacturing (Baines et al. 2009). The prevalent approach is observational, with limited prescriptive or action-oriented research (Baines et al. 2009). Therefore, there's potential for researchers to play a more active role in influencing change within the EaaS domain rather than just reporting on it. Given this observed gap in prescriptive or action-oriented research, the focus of this study is on action research to fill this void.

3.3 Semi-structured Interviews

Considering this call for increased action research, we employ semi-structured qualitative expert interviews as a primary method of data collection. In general, interviews are instrumental in exploring the views, experiences, beliefs, and motivations of individual participants (Gill et al. 2008). Given the depth and granularity of insights that can be gleaned through this method, it offers a robust avenue to probe into the nuances of EaaS in the German machinery market, capturing the multifaceted perspectives of experts in the domain. Semi-structured interviews are characterized by a set of principal questions that outline the primary subjects to be discussed, yet they offer the freedom for either the interviewer or the interviewee to delve deeper into specific ideas or responses (Gill et al. 2008). Compared to structured interviews, the adaptable nature of this method enables the uncovering or expansion of insights deemed significant by participants, even if such details weren't initially anticipated by the researchers (Gill et al. 2008). A series of 28 interviews involving 30 experts were carried out, each lasting between 30 minutes and 2 hours. Among these interviews, 4 responses were provided in written form. Interview details including participant name, role, years of experience and interview duration can be found in Table 2. Full transcripts of all interviews can be found in the section “Interview Transcripts” in the Appendix.

3.4 Interview Evaluation Method

Mayring's structuring content analysis, using a category system developed inductively, was applied to evaluate interview material (Mayring 2000). This approach combines deductive objectives with inductive assessment of raw data, transforming it into a structured model highlighting key themes (Gill et al. 2008). Credibility checks include replication, contrasting past research, triangulation, participant feedback, and responses from users of research outcomes. MAXQDA software was used for efficiency, with the understanding that text segments can fit multiple categories and some data may remain uncoded. The category system is continuously refined, consolidating similar categories for clarity (Gill et al. 2008). Drawing from Stojkovski et al. 2022, the initial categorization of factors affecting EaaS adoption included Financial, Strategic, and Operational influences. Subsequent literature review and expert discussions expanded these categories to incorporate "Marketing" and "Organizational" elements, ensuring a more complete understanding of the forces driving and hindering EaaS adoption among providers and customers.

3.5 Candidate Selection Criteria Development

For interview candidate selection, key stakeholders within the EaaS ecosystem involved in decision-making and implementation are identified, ensuring they have relevant experience in the German machinery market and decision-making roles. The next section therefore introduces an outline of the EaaS ecosystem and its entities.

EaaS Ecosystem

While the concept of ecosystem roots from the evolutionary theory of biology, ecosystems in the business world refer to a combination of a minimum of three participants with diverse skills forming an open structure for value creation, collaboratively delivering a unique value proposition to a customer (Humbeck 2022). Although in the literature the development,

characterization and delineation of ecosystems is spread out in more detail, this paper will refrain from a more in-depth consideration, as the object of investigation is limited to the behaviour of the respective actors within an EaaS ecosystem.

In the following, the EaaS ecosystem model used for this work is presented. The focus is on a practical derivation of the model, which is done by looking at the players operating in the EaaS market. The previously outlined ecosystem consists of four entities: suppliers, a focal enterprise, complementors, and a client (Humbeck 2022). These can be transferred to the EaaS context by assessing relevant Product-service system (PSS), servitization, and EaaS literature and commercial whitepapers. Our EaaS ecosystem proposed for this work is shown in Figure 1. The depicted EaaS ecosystem model illustrates the interrelation and integration of various entities crucial for the EaaS framework. At the centre of this system is the OEM, representing the primary entity responsible for producing, and perhaps designing, the equipment (e.g., Trumpf, Bosch). Surrounding the OEM are several enablers and service providers. These include the network provider (e.g., Deutsche Telekom, Microsoft), ensuring connectivity and communication; the Cloud Provider, offering cloud-based storage and computing solutions (e.g., AWS, Microsoft); Management Software that provides tools for equipment management, monitoring, and optimization (e.g., relayr, Synctive); and the Hardware Provider that supplies the necessary hardware components or devices (e.g., Siemens, Endress+Hauser). It should be noted that some entities can also represent multiple entities, for example by acting as network, cloud and hardware providers. Beyond the central ecosystem, other vital stakeholders play a role. The advisors, represented by researchers and consulting companies, offer expertise, insights, and strategies to promote or maximize the benefits of EaaS. The Financier (e.g., Munich Re, Commerzbank) provides the necessary financial backing or solutions for the operations. The Implementer (e.g., relayr, Synctive) is responsible for the application and integration of the EaaS solutions. Lastly, there are the Manufacturing Companies that produces

tangible goods with the help of the OEM's machine or equipment in an EaaS model (e.g., Bertelsmann Printing Group, W. Kohlhammer GmbH & Co. KG). Furthermore, the model differentiates between roles within the ecosystem, categorizing entities either as enablers or suppliers, who facilitate the EaaS ecosystem's function, or providers or clients, who either offer or consume the respective EaaS services. In sum, this EaaS ecosystem model emphasizes a collaborative approach, underlining the interdependence of various stakeholders to effectively deliver EaaS solutions. Furthermore, it supports the establishment of a primary selection criteria for interview candidates. In the next section, further, secondary selection criteria are presented.

Selection Criteria on Entity-level

Research underscores the need for external expertise in the servitization of manufacturing, including the transition to EaaS models (Baines et al. 2009). Consultancies experienced in business model innovation, Industry 4.0, and industrial IoT are key for insights into EaaS, particularly in the German machinery and manufacturing context. Interview candidates should have relevant expertise and at least 5 years of professional experience. For client-side interview candidates, the buying center (BC) concept is used to identify roles like initiators, influencers, deciders, buyers, and gatekeepers in the procurement process (Cabanelas et al. 2023; Johnston and Bonoma 1981). Candidates should hold one of these roles in a German OEM and possess a minimum of 5 years of experience. On the provider side, roles vary from visionaries in smaller OEMs to service strategists and product developers in larger firms, along with sales and marketing professionals (Kamp et al. 2023). The selection focuses on these professionals with over 5 years of experience in a German OEM. EaaS providers may also be customers, leading to potential role overlaps. Based on the previously described criteria, we designed a search string for the Sales Navigator of the social network LinkedIn to acquire the desired candidates for expert interviews (Figure 2 and Figure 3). This search resulted in over 1.500 relevant

industry contacts (data retrieved on 29th of October 2023), of whom the first 500 results were contacted. Five of these 500 leads agreed to be interviewed as experts. Additionally, 317 qualified potential interview partners were approached via LinkedIn direct message or phone call from existing personal, and individual connections, resulting in the remaining 25 interview partners. Thus, the final interviewee sample size consists of n=30.

4 Theoretical Background

The upcoming chapter begins with an overview of the significance of Germany's mechanical engineering market, highlighting its vulnerability to global crises and the growing necessity for resilient supply chains and services. It then delves into the concept of advancing servitization within the mechanical engineering sector and provides a comprehensive analysis of the EaaS business model in this context.

4.1 The German Machinery Industries' Vulnerability to Global Crises

As the world's third-largest machine exporter by turnover, Germany holds a strong position in the manufacturing and machinery sectors (VDMA 2023). Throughout 2022, incoming orders in Germany's mechanical engineering sectors showed significant variation (VDMA 2023). This diversity reflects both the fluctuating demand and the varied nature of the industry, with outcomes ranging from significant price-adjusted increases to decreases by the year's end (VDMA 2023). The Corona recovery effects from the previous year led to growth in several OEM sectors, while a decline was observed in many supplier sectors starting mid-year (VDMA 2023). Overall, nine branches reported growth, but twice as many experienced a decline (VDMA 2023). In 2022, Germany's mechanical engineering sectors displayed diverse performance trends. Germany's deep integration into global supply chains, more so than other European nations, makes it particularly sensitive to international trade fluctuations (Bunde 2021). The country's mechanical engineering and automotive sectors, which generate about

two-thirds of their revenue overseas, rely heavily on specialized suppliers worldwide (Bunde 2021). This global interdependence exposes the German mechanical engineering industry to significant adverse impacts from worldwide crises, such as the COVID-19 pandemic, that disrupt international trade (Bunde 2021).

The pandemic-induced shock has prompted many SMEs to critically reassess their supply chains, with a growing shift towards nearshoring, outsourcing production to neighboring countries like Eastern Europe for lower labor costs (Bunde 2021). This strategy aims to shorten supply chains compared to Asian sourcing, enhancing resilience against external shocks (Bunde 2021). Consequently, regional supply networks are becoming more crucial (Bunde 2021). However, this shift might lead to the loss of cost benefits and expertise (Bunde 2021). On the sales front, the COVID-19 crisis has led to a strategic pivot towards the eurozone (Bunde 2021). Increasingly, manufacturing companies are focusing on exporting services, such as data analysis and consulting, which are often digital and more easily transactable across borders (Bunde 2021). These value-added services are gaining prominence in the manufacturing industry (Bunde 2021). The COVID-shock was followed by another event that negatively affected the machine sector. Russia's attack on Ukraine in February 2022 significantly disrupted the supply of preliminary products to Germany's mechanical and plant engineering sector (Ciupek 2023). Early in 2022, specifically in January and February, German machinery exports saw a 4.8% increase from the previous year (Ciupek 2023). However, this growth was abruptly halted in March with a sharp 6.2% decline (Ciupek 2023). As a result, the German mechanical engineering sector faces reduced business prospects, higher energy costs, and a need for stronger supply chains (Ciupek 2023). Therefore, this paper examines which factors drive EaaS adoption to stabilize supply chains and increase service exports, while also examining the influence of external shocks on the drivers and inhibitors of adaptation.

4.2 Servitization in the Machinery Industry

Servitization is defined as the innovation within an organization's capabilities and processes to transition from selling products to selling integrated products and services that deliver value in use (Baines et al. 2009). Another definition presents it as the process of innovating a company's capabilities and procedures to shift from providing products to providing product-service systems, emphasizing the transition towards offering solutions rather than merely selling products (Mastrogiacomo et al. 2019). The authors argue that servitization is a key trend in manufacturing, as it can help companies to differentiate themselves from their competitors and to create a more sustainable business model (Schaefers et al. 2021). Servitization, as defined by Baines and cited in (Pirola et al. 2020), represents a strategic transformation process that has been reshaping manufacturing companies for decades. This transformation involves a shift in their business strategy towards innovative models known as PSS.

4.3 Equipment-as-a-Service

As examined in the previous chapter, the rise of EaaS models is rooted in the industrial servitization, which led to a diffusion of innovative business models enabled by advanced technologies. The following chapter describes the EaaS model more detailed.

4.3.1 Definition

Until now, scholarly research on usage-based models has predominantly been concerned with the economic and environmental impacts of these business models, which are alternatively referred to as "servitization", "product-service systems", "service-dominant logic", and "performance economy" (Stojkovski et al. 2022). In defining usage-based models, (Stojkovski et al. 2022) identify three essential criteria: Firstly, these models are characterized by value propositions centred on usage. Secondly, they generate OpEx-based revenues through

consistent, ongoing payments. Lastly, they require foundational or strategic financial partnerships among provider firms to facilitate such models. While a unified definition of EaaS is missing, the design options of usage-based business models are abundant (Stojkovski et al. 2022).

4.3.2 Archetypes

According to (Stojkovski et al. 2022), four main archetypes of usage-based business models can currently be recognized in the market that fulfil essential criteria while varying in their business model configurations: Leasing Plus, Flexible Contracting, Renting/Sharing, and Performance Contracting.

The 'Leasing Plus' business model archetype is the closest to traditional product-based models, emphasizing financial optimization by transitioning from capital expenditure (CapEx) to operational expenditure (OpEx) and offering solutions that don't impact the customer's balance sheet (Stojkovski et al. 2022). Revenue generation shifts from one-time payments to consistent, usage-based monthly fees, granting the right to use the equipment along with included services (Stojkovski et al. 2022). This archetype focuses on forming partnerships with basic financing entities, such as leasing firms or industrial banks, to cover any initial revenue shortfalls and to potentially keep the equipment on their balance sheet, extending traditional leasing with added service components for a more holistic solution (Stojkovski et al. 2022).

While financial optimization is still a key value proposition in the 'Flexible Contracting' model, it introduces a variable usage component (Stojkovski et al. 2022). Like the 'Leasing Plus' model, it modifies only three aspects of the traditional product-based model: the value propositions, key partnerships, and revenue streams (Stojkovski et al. 2022). Customers pay a fixed monthly fee, plus a variable fee based on usage beyond a certain threshold (Stojkovski et al. 2022). The service is included in the model, and partnerships extend beyond basic financial entities to

include those willing to share operational risks, such as insurance providers and institutional investors (Stojkovski et al. 2022). The risk transfer involved is more substantial compared to the 'Leasing Plus' model (Stojkovski et al. 2022).

The 'Renting/Sharing' archetype allows multiple users to access the same equipment, such as sharing ownership across different times (Stojkovski et al. 2022). Its value lies in financial optimization and on-demand access (Stojkovski et al. 2022). Customers rent equipment through physical and digital platforms, paying fees based on time or usage (Stojkovski et al. 2022). Unlike previous models, this one significantly involves fleet management and requires resources for equipment storage and digital management (Stojkovski et al. 2022). The cost structure is impacted by storage, logistics, and quality control (Stojkovski et al. 2022). Similar to 'Leasing Plus,' it also relies on financing partners to manage revenue gaps and equipment on balance sheets (Stojkovski et al. 2022).

The 'Performance Contracting' archetype stands out as the most innovative, emphasizing guaranteed equipment availability and efficient use as its main value propositions (Stojkovski et al. 2022). It retains the financial optimization, variable usage, and on-demand access characteristics of earlier models but adds two crucial value propositions that tie monthly payments to equipment performance, such as “Pay-per-Use” or “Pay-per-Unit” (respectively “Pay-per-X”) (Stojkovski et al. 2022). Providers, in addition to basic financing partnerships, now also seek strategic financiers willing to share operational risks (Stojkovski et al. 2022). This model fosters a closer customer relationship built on trust and partnership (Stojkovski et al. 2022). On the value creation side, it expands to include managing equipment operations and employing sophisticated data analytics (Stojkovski et al. 2022). This level of service allows for enhanced offerings and additional sales opportunities through data-driven upselling, significantly impacting the operational cost structure (Stojkovski et al. 2022)

5 Firm-level Conditions and Implementation Strategies

5.1 Introduction

While existing research has explored various aspects of Equipment as a Service (EaaS), such as its technological framework, business model implications, and market potential, there remains a significant gap in understanding the implementation barriers encountered during the adoption process and the holistic firm-level conditions necessary for successful EaaS implementation. This includes a lack of detailed insight into how organizational structures, corporate cultures, and leadership strategies specifically influence the adoption and effective execution of EaaS models. Furthermore, while the concept of EaaS is becoming increasingly relevant, there is limited empirical research that examines the real-world application of EaaS models, especially in the face of external shocks such as economic fluctuations, technological disruptions, and global crises like the COVID-19 pandemic and geopolitical conflicts like the Ukraine war. The resilience of EaaS models under such conditions, and the adaptability of organizational strategies in response to these challenges, are areas that require deeper exploration. To address this gap, this section of the thesis provides an in-depth analysis of the necessary company-level conditions and barriers to overcome in the process of EaaS implementation, enriched by both literature review and interviews. The focus is to combine academic findings with real-world insights to offer a comprehensive view of EaaS implementation. The goal of this thesis section is to clearly identify and dissect the barriers and essential conditions at the firm level for EaaS implementation. By shedding light on these aspects, the research aims to provide clarity needed to navigate EaaS adoption. The structure of this section is organized into 3 chapters, each focusing on different implementation factettes while answering the research questions RQ7, RQ8 & RQ9 (see chapter “Research Objective”).

5.2 Comparative Literature Review

The literature review for this section is founded on an extensive literature search comprising a total of 43 sources, establishing a robust base for the overall thesis. This thorough analysis has led to the identification of five overarching categories that stand out as central themes: Organizational Readiness, Technological Infrastructure, Financing and Economic Transition, Market Analysis and Strategy, and Strategic Implementation and Change Management. The readiness of organizations to adopt EaaS is a key aspect of EaaS implementation. It involves assessing organizational structures, cultural adaptability, leadership vision, and digital transformation capabilities. Academic sources such as (Stojkovski et al. 2022; Wang, J. et al. 2023) highlight the importance of a strategic approach towards EaaS adoption. They underscore the interplay of financial, technological, and managerial factors, as echoed by (Moro et al. 2020; Schroderus et al. 2021). The technological infrastructure required for EaaS implementation is another critical component. The integration of technologies like IoT and cloud computing and their compatibility with existing systems are significant considerations. Literature by (Niu et al. 2021; Wang, J. et al. 2023) provides insights into the technological challenges and opportunities within the EaaS landscape. Financing and economic transition also play pivotal roles in the shift to EaaS. Research explores the shift in cash flow dynamics from traditional sales models to service-oriented approaches, with studies by (Kamp et al. 2023; Stojkovski et al. 2022) shedding light on necessary financial strategies, risk management, and planning. Market analysis and strategic positioning within the EaaS model are further explored, involving understanding market demand, customer segmentation, and competitive strategy. Literature from (Niu et al. 2021; Oliva and Kallenberg 2003) offers perspectives on the market dynamics and strategic imperatives for EaaS providers. Lastly, the challenges of strategic implementation and change management in the transition to EaaS are addressed. The importance of a comprehensive implementation roadmap, including pilot programs and MVP approaches, is

discussed. Change management strategies, stakeholder engagement, and the importance of monitoring and evaluation in the EaaS adoption process are highlighted, drawing on insights from (Acerbi and Taisch 2020; Oliva and Kallenberg 2003; Moro et al. 2020). The five categories identified in this literature review form the foundational pillars upon which this section of the thesis is constructed. They provide a structured framework for the ensuing analysis. In the upcoming sections, these categories will be intricately compared with findings from expert interviews, facilitating a comprehensive and multi-dimensional exploration. This comparative approach aims to bridge theoretical concepts with practical insights, enriching the understanding of each category with real-world experiences and perspectives. This synthesis is essential for a holistic understanding of the dynamics involved in the implementation of EaaS providing a valuable intersection between academic research and practical application.

5.3 Implementation Barriers Encountered During EaaS Adoption

The following chapter aims to identify the barriers encountered during EaaS adoption in the German machinery industry and answering the following research question:

RQ7: What were the persistent implementation barriers encountered during the adoption process of EaaS models?

5.3.1 Organizational Readiness

The first persistent barrier identified in the process of Equipment as a Service (EaaS) implementation is organizational readiness. This element forms the foundation of successful EaaS adoption, necessitating a comprehensive understanding of an organization's culture, structure, and dynamics. This chapter aims to dissect the critical aspects of organizational readiness, focusing on how an organization's adaptability, team involvement, trust dynamics influence its transition to an EaaS model. Within the scope of organizational readiness, three sub-categories have emerged as focal points: Cultural Adaptation, Skills and Training, and

Leadership and Vision. Each of these components plays a vital role in fostering an environment conducive to EaaS adoption. The chapter will explore these sub-categories in depth, employing a blend of literature review and insights from expert interviews. This dual approach is designed to provide a balanced perspective that combines theoretical frameworks with practical, real-world experiences.

Cultural Adaption

In the transformation towards Equipment as a Service (EaaS), an organization's cultural adaptation is critical. Insights from the dataset of the expert interviews underscore the importance of several key aspects in this regard. An adaptable organizational structure emerges as a primary requisite for EaaS adoption, highlighted in five instances accounting to 16.67% within the dataset (Table 34). Such flexibility is essential for companies to effectively navigate the shifts and nuances inherent in EaaS models. The early involvement of teams, underscored in nine references accounting to 30% (Table 34), is equally vital. This early engagement not only fosters a collaborative atmosphere but also ensures a sense of ownership and commitment towards the EaaS initiative among team members. Trust between the service provider and the customer, noted by 13.33% (Table 34), is fundamental in establishing and maintaining long-term service relationships crucial in an EaaS framework. The dataset also sheds light on various strategies to foster EaaS adoption. Designing EaaS models in collaboration with customer segments, as mentioned by 10% (Table 39), ensures a customer-centric approach, while promoting EaaS more actively (6.67%) and setting attractive commercial conditions (6.67%) with valuable pricing (6.67%) (Table 39), is crucial for operational success. The dataset also indicates the need to address cultural barriers such as entrenched 'ownership-think', a challenge in reshaping traditional business mindsets toward service orientation. (Wang, J. et al. 2023) emphasize the importance of multi-actor collaborations in successful servitization, resonating

with the dataset's findings on the need for comprehensive stakeholder engagement in EaaS adoption.

Skills and Training

The transition to an EaaS model necessitates specific skill sets and competencies, as identified in the expert interview dataset. A clear understanding the whole value creation chain emphasized by 16.67% (Table 40), is key to comprehending EaaS's broader implications and ensuring successful implementation. To acquire this expertise, it can be beneficial to engage with consultancies specializing in EaaS and data management. Also initiating small-scale projects mentioned by 16.67% (Table 40) which can be improved and expanded in iterations, as effective strategies for a focused and manageable approach to EaaS. A recurring and paramount theme in the dataset is the importance of risk-sharing with involved stakeholders, as it is crucial to work hand in hand with them on skills and implementation to succeed mentioned by 16.67 (Table 39). This collaboration is consistently highlighted as a critical factor during the EaaS transition process, underscoring the profound awareness of the magnitude of change required. These insights echo the findings of (Stojkovski et al. 2022) and other experts, who emphasize the necessity for developing novel competencies in the EaaS domain, thus advocating for a substantial shift in training and development approaches. This transformation is best achieved within a collaborative and supportive team environment, where the sharing of expertise is facilitated.

Leadership and Vision

Leadership and vision are pivotal in steering an organization towards EaaS. The dataset from the expert interviews reveals that building a robust business case for EaaS is a crucial leadership task, mentioned by 23.33% (Table 41). This involves not only demonstrating the economic viability of EaaS but also aligning it with the strategic objectives of the organization. The lack

of visionary leadership to drive a usage-based business transformation journey is a critical gap, as highlighted by (Stojkovski et al. 2022). This deficiency underscores the need for leaders who can not only envision but also effectively guide the organization through the complexities of transitioning to a service-centric model. Overcoming resistance to change, a commonly cited challenge in organizational transformations, is another critical leadership responsibility. In conclusion, the cultural, skill-based, and leadership-oriented readiness of an organization is fundamental for the successful adoption and implementation of EaaS. The insights from the expert interviews, complemented by relevant literature, provide a comprehensive understanding of the essential elements required for an organization to thrive in an EaaS-driven market.

5.3.2 Technological Infrastructure

The second persistent barrier identified in the implementation process of Equipment as a Service (EaaS) is Technological Infrastructure. This aspect is pivotal to the operational success of EaaS, necessitating a comprehensive and well-integrated technological framework. In this chapter, our focus is on thoroughly dissecting the crucial aspects of Technological Infrastructure. It will be examined how the integration and adept management of IT systems, equipment, and data security play a significant role in enabling an organization's ability to implement and effectively operate an EaaS model. Within the broad scope of Technological Infrastructure, three sub-categories emerge as vital: IT Systems and Data Analytics, Equipment Integration, and Data Security. Each of these components is instrumental in ensuring the fluid operation and overall success of EaaS models.

IT Systems and Data Analytics

In the journey towards implementing Equipment as a Service (EaaS), the role of IT systems and data analytics is paramount. Insights from the expert interviews reveal varied perspectives on digitalization's impact on EaaS implementation. While one expert perceives no impact and

another suggests potential harm, the majority, as indicated by 40% (Table 38), believe that a high level of digitalization significantly eases the implementation effort. This view aligns with (Wang, J. et al. 2023), who state, "Digital servitization requires transformation across the entire network, not just the focal firm." This transformation typically encompasses the integration of Internet of Things (IoT) technologies and cloud computing. IoT enhances service delivery through real-time data collection and analysis, crucial for customizing services. Cloud computing, meanwhile, provides scalable and flexible infrastructure for data processing and storage, supporting the diverse demands of EaaS.

Equipment Integration

Integrating equipment in EaaS models presents distinct challenges. The expert interviews highlight several issues, including a lack of customer orientation in existing systems, cited by 26.67%, and a high effort required for change management, mentioned by 23.33% (Table 36). The absence of a Minimum Viable Product (MVP) approach, mentioned by 10% (Table 36), underscores the need for iterative development in EaaS. Legacy systems and personnel constraints, raised by 26.67% and 20% (Table 36) respectively, further complicate integration. Legacy systems, in particular, may be incompatible with new EaaS models. (Schroderus et al. 2021) encapsulate this challenge: "Complex due to many company functions impacting the implementation." Addressing these hurdles requires strategic upgrade strategies and a phased implementation approach.

Data Security

Cybersecurity emerges as a critical concern in EaaS, as discussed in the interviews. The digital interconnectedness inherent in EaaS models necessitates robust data protection and risk management strategies. The lack of customer orientation, a concern for eight experts, extends to cybersecurity, emphasizing the importance of customer data privacy. High change

management effort, cited by 7 experts (Table 36), includes adopting new cybersecurity measures. Additionally, personnel constraints and legacy systems, mentioned by 20% and 26.67% (Table 36) experts respectively, have direct implications for cybersecurity, highlighting the need for workforce training and system upgrades. In conclusion, implementing EaaS requires a comprehensive approach to technological infrastructure. This encompasses advanced IT systems, strategic equipment integration, and stringent cybersecurity measures, as highlighted in the expert interviews and supported by literature such as (Schroderus et al. 2021; Wang, J. et al. 2023). These components are fundamental for navigating EaaS complexities and ensuring its successful and sustainable implementation.

5.3.3 Financing and Economic Transition

The third persistent barrier in Equipment as a Service (EaaS) implementation is identified as Financing and Economic Transition. This chapter delves into the transition from traditional sales models to service-based approaches, thoroughly examining the resulting shift in cash flow dynamics and its impact on funding models, risk management, and financial planning. The crucial role of financing partners, a consistent theme highlighted in both expert interviews and literature, is underscored.

Shifting Cash Flow Dynamics

The transition to Equipment as a Service (EaaS) brings about a significant shift in cash flow dynamics, moving from traditional sales models to service-oriented structures. The expert interviews reveal that building a robust business case is essential, emphasized in 23.33% of the discussions (Table 41). This entails understanding the financial transformation from sales to services, a crucial aspect of EaaS adoption. According to (Stojkovski et al. 2022) financial factors play a pivotal role in this transition. Furthermore, (Niu et al. 2021) highlight economic

motivations as key drivers, stating that manufacturers adopt servitization "to reinforce profitability so that manufacturers are more financially resilient."

Funding Models for EaaS

Exploring suitable funding models is a critical component of EaaS adoption, as indicated in the expert insights. Active promotion of EaaS, mentioned in 6.67% of the discussions and the utilization of EaaS as a tool to create room in CapEx or OpEx, also noted in 6.67% (Table 39), are strategies to facilitate financial support for EaaS initiatives. The challenges for investors in financing EaaS models, as mentioned by (Stojkovski et al. 2022), reflect the complexity and novelty of such investments. This aligns with the observation in our discussions that financing is a critical implementation barrier, also highlighted by 13.33% of the instances (Table 36). Identifying appropriate investment sources and options is therefore crucial in developing a sustainable EaaS model.

Risk Management and Financial Planning

Risk management and financial planning are key components in the EaaS transition, as shown in the expert interviews. Risk sharing with financing partners, a strategy emphasized by 16.67% of the discussions (Table 40), is a vital measure for mitigating financial risks associated with EaaS implementation. This approach not only distributes the financial burden but also fosters collaborative learning and adaptation. Understanding the entire value creation chain, also stressed in 16.67% (Table 40) of the discussions, is essential for informed financial decision-making. Starting with small projects, another strategy mentioned in 16.67% (Table 40) of the instances, allows for a gradual financial adaptation to the EaaS model, minimizing risks and allowing for iterative learning. (Kamp et al. 2023) highlight the "struggle to implement pricing formulas that satisfy both the supply and the demand side," pointing to the complexity of

financial modeling in EaaS. This necessitates a nuanced approach to financial planning, considering long-term strategies and the unique economic dynamics of EaaS.

5.4 Necessary Firm-level Conditions for EaaS Implementation

The following chapter aims to identify the necessary firm-level conditions for EaaS implementation in the German machinery industry and answer the following research question:

RQ8: What are the necessary firm level conditions that enable OEMs to implement an EaaS?

5.4.1 Market Analysis and Strategy

A core firm-level condition essential for successful Equipment as a Service (EaaS) implementation is effective Market Analysis and Strategy. This chapter delves into a comprehensive analysis of market demand and segmentation, showcasing successful EaaS adoptions across various industries. It underscores the importance of accurately identifying target markets and customer segments, highlighting the role of specialization in EaaS offerings. Additionally, the chapter explores competitive strategy and positioning within the EaaS market. It focuses on critical aspects such as differentiation, customer engagement and retention strategies, which are pivotal for building lasting relationships and maintaining a strong market presence.

Market Demand and Segmentation

In the realm of Equipment as a Service (EaaS), understanding market demand and segmentation is crucial. Our analysis reveals successful EaaS adoptions across various industries, with Trumpf leading at 33.33%, followed by Hilti and Heidelberger Druckmaschinen each at 20%. Other notable examples include DMG Mori (16.67%), Rolls-Royce (16.67%), Siemens Healthineers (10%), Kärcher (10%), Käser (10%), Jungheinrich (6.67%), Bosch (6.67%), and FlexFactory (6.67%), see Table 42. These examples demonstrate the diversity and potential of

EaaS across different sectors. Identifying target markets and customer segmentation is paramount. The degree of specialization in EaaS offerings can significantly impact market penetration and customer satisfaction. For example, Trumpf's success in the market indicates a high level of specialization and alignment with customer needs, a trend that is evident across other successful EaaS models.

"You often see a certain divergence between the customers you want to address with the offer and those who actually find the offer exciting. But you can certainly identify a number of, let's say, patterns or segments that can identify with the advantages depending on how the model is knitted." **Online Interview with an enabler, October 23, 2023**

Competitive Strategy and Positioning

Developing a competitive strategy and effective positioning in the EaaS market is another critical aspect. According to our findings, early-stage team involvement, highlighted in 30% of the discussions (Table 34), is a key success factor. This involvement fosters a deeper understanding of market needs and enables the development of tailored EaaS offerings. Trust among parties mentioned by 13.33% and digital readiness by 10% (Table 34) are other important factors that influence a firm's position in the EaaS market. (Acerbi and Taisch 2020) emphasize the challenges manufacturers may face, especially when shifting to circular economy practices, which can require significant operational changes. (Niu et al. 2021) note that "Services are more easily differentiated than products," highlighting the potential for EaaS offerings to stand out in the market. This differentiation is key in establishing a competitive edge and resonates with the need for a comprehensive competitive analysis in EaaS.

Customer Engagement and Retention

The final piece of the market strategy puzzle in EaaS is customer engagement and retention. Our analysis indicates that designing EaaS models in collaboration with customers is crucial, as mentioned in 10% of the discussions (Table 39). This collaborative approach ensures that services are closely aligned with customer needs and expectations. Other strategies to enhance

customer engagement and retention include promoting EaaS more actively and using EaaS as a tool to create financial flexibility in CapEx or OpEx, each mentioned in 6.67% of our findings (Table 39). Setting attractive commercial conditions and addressing customers with value-based pricing, also highlighted in 6.67% of the discussions (Table 39), are strategies that can further strengthen customer relationships. Building long-term customer relationships and incorporating continuous customer feedback are essential for the sustained success of EaaS models. These relationships are built on trust, mutual benefit, and a deep understanding of customer needs, enabling firms to adapt and evolve their EaaS offerings in line with market dynamics.

5.4.2 Implementation Roadmap and Change Management

Further necessary firm-level conditions crucial for successful Equipment as a Service (EaaS) implementation include a well-crafted implementation roadmap and an assessed scope of change management. This chapter presents the significance of assessing the capabilities for adopting a Minimum Viable Product (MVP) approach to test and refine services. It delves into the managerial challenges and outlines strategies for managing organizational change, underlining the importance of stakeholder engagement and adaptability. The chapter concludes with a discussion on monitoring and evaluation techniques, which are vital for assessing EaaS implementation success and promoting a culture of continuous improvement.

Minimum Viable Product

The implementation roadmap for Equipment as a Service (EaaS) is a critical component of the transition from traditional manufacturing to a service-oriented model. A predominant view among experts, as demonstrated by our analysis, is that the utilization of a Minimum Viable Product (MVP) approach is crucial for achieving implementation success and for avoiding protracted planning processes, as supported by 43.33% of mentions (Table 43). A minor opinion

considers it either not important or only useful for technical assessment. Some authors (Oliva and Kallenberg 2003) aptly note, "The transition from product manufacturer to service provider constitutes a major managerial challenge, requiring new organizational principles, structures, and processes." This transition often involves step-by-step implementation and pilot programs, emphasizing the importance of the MVP approach. MVP strategy enables firms to swiftly test the model without extensive planning, refine their approach, and gradually scale their EaaS offerings. This approach effectively minimizes risk and optimizes resource allocation.

Change Management

Change management is a substantial aspect of EaaS implementation. The lack of customer orientation and legacy systems, each cited in 26.67% (Table 36) of the findings, pose significant hurdles. Additionally, the high effort required for managing change, noted in 23.33% (Table 35) of the discussions, underscores the challenges in this transition. (Moro et al. 2020) emphasize the resistance to change by stakeholders, a factor that necessitates comprehensive organizational change strategies and stakeholder engagement. Managing these changes requires not only structural adjustments but also personal change within the organization, as staff adapt to new roles and processes in the EaaS model.

5.5 Impact of External Shocks on EaaS Implementation

The following chapter aims to examine to what extend current external shocks had impact on the barriers of EaaS implementation in the German machinery industry and answer the following research question:

RQ9: Which influence did external shocks, namely the COVID-pandemic and the Ukraine war have on the implementation of EaaS among German OEMs?

5.5.1 Impact of COVID-19 on EaaS Implementation

The COVID-19 crisis had a profound influence on the implementation of Equipment as a Service (EaaS) business models, as revealed in the expert interviews. About 3.33% of experts (Table 35) reported that the pandemic caused a halt in EaaS projects. Furthermore, 6.67% noted a strategic shift in companies towards prioritizing core business, impacting EaaS investments and adoption pace. Another 6.67% observed budget reductions for EaaS projects (Table 35). The pandemic also led to a change in customer preferences towards flexible rental solutions, as mentioned by 3.33%, prompting 10% to reassess customer needs and EaaS model implementation (Table 35). These insights underscore the necessity of adaptable strategies in response to global challenges.

5.5.2 Impact of Ukraine war on EaaS Implementation

The Ukraine war's impact on Equipment as a Service (EaaS) implementation, as revealed by expert interviews, has been multifaceted. The conflict caused critical resource shortages, disrupting manufacturing and supply chains (Table 35). This situation was exacerbated by market uncertainties, affecting investment decisions and the stability of EaaS offerings. The financial landscape, characterized by rising inflation and interest rates, further complicated matters, reducing the attractiveness of EaaS projects for financing partners, as noted by experts.

> *"The uncertainty factor is rising interest rates and higher capital costs."* **Online Interview with an enabler, November 3, 2023**

Additionally, 16.67% of experts mentioned that businesses had to reevaluate and possibly restructure their supply chains and share risk through partnerships (Table 40). These challenges highlight the need for strategic adaptability and resilience among EaaS providers in a globally uncertain environment.

5.6 Summary of Findings

In addressing RQ7, it was found that the persistent implementation barriers in the adoption of EaaS models were multifaceted. Organizational readiness emerged as a foundational element, necessitating an adaptable organizational structure and early team involvement. Additionally, leadership must construct a robust business case for EaaS and work to overcome resistance to change. Furthermore, Technological Infrastructure was identified as a barrier, with outdated legacy systems impeding equipment integration and necessitating effective change management. Key components such as data security must also be managed effectively. Financing and Economic Transition were also recognized as barriers. The transition to EaaS demands careful consideration of funding options as the adoption of EaaS models leads to a fundamental change in revenue generation and management. Companies must find sustainable investment sources to support the service model. In response to RQ8, the essential firm-level conditions for successful EaaS implementation are identified as a robust implementation roadmap, a well-assessed scope of change management, comprehensive market analysis, and strategic positioning. These elements are crucial for OEMs in adapting to EaaS and ensuring alignment with market demands and customer expectations. Regarding RQ9, the assessments of implementation barriers have shown some instability following external shocks such as the COVID-19 pandemic and the Ukraine war. These events have highlighted the need for EaaS models to be adaptable and responsive to changing market conditions. Specifically, the challenge of maintaining financing partner attractiveness under critical market conditions has been repeatedly emphasized, necessitating innovative responses from EaaS providers. In summary, addressing the persistent implementation barriers (RQ7) and establishing the necessary firm-level conditions (RQ8) are imperative for the successful adoption of EaaS models. The resilience and adaptability of these factors (RQ9) in the face of external shocks have proven to be crucial in the EaaS implementation process.

6 Collective Findings

Client demand is vital for innovation success, especially in EaaS ecosystems involving promoters, enablers, and potential providers like OEMs (Dunphy and Herbig 1995). Understanding client acceptance or rejection is crucial for businesses to enhance development, competitiveness, and profitability. A common practice is using personas, detailed profiles of users or user groups, based on extensive field studies, to represent their characteristics and goals (Chang et al. 2008). The upcoming section, informed by expert interviews, will create personas for OEMs considering EaaS adoption.

6.1 Provider Personas

Deriving from the comparative review of the literature and the interviews, the following section aims to create the prototype of a successful EaaS provider factoring in internal capabilities, company size, type of machinery and equipment sold as well as external ones such as the industry the company participates in. This section aims to answer RQ10:

RQ10: How can actual and potential EaaS provider personas be described according to current EaaS ecosystem participants?

6.1.1 Requirements for Providers to Adopt EaaS

Key requirements for EaaS providers, include a strong capital base to pre-finance machines and selling machines that are suitable for a second market (both 30.00% of respondents) (Table 44).

"The manufacturers who were able to provide the funds themselves have always been very successful. So that is also publicly, for example, Siemens […] They also supply the consumables for the machines and invoice them. Trumpf also has its own bank." **Online Interview with EaaS Enabler, October 27, 2023**

Further important requirements include access to customer IT and operational data for customized services and proactive maintenance (20.00%) and the ability to conceal prices from

competition (10.00%) (Table 44). These results are in line with the findings from Deloitte (2022) highlighting the relevance of digital tools, financing capabilities and serviceable equipment as key in the adoption on the provider side. Further, the ability to offer an extensive machine portfolio within technology partnerships as a strategy for market share acquisition as well as being a first mover are both identified by 6.67% of interviews (Table 44).

6.1.2 Company Size and Predestined Industries Provider Perspective

The interview data indicates that the effectiveness of an EaaS business model varies depending on the company size. While large companies (26.67% of mentions) such as MedTech firms with substantial financial resources are recognized most for successfully adopting EaaS, SMEs are also mentioned (13.33%) due to their agility and streamlined management structures (Table 45). However, it's noted that larger companies, with their greater financial capacity, can more readily absorb the risks associated with such a transformative business model, in contrast to SMEs where the entire business's viability may depend on the success of this shift. Based on expert interview data, the MedTech and Healthcare sector emerges as the most promising, with 40% (Table 46) of respondents recognizing it.

> *"Yes, so I am working and can only speak for the Healthcare system. If I now look at the big service providers and large hospitals etc., then it is already a huge topic, I think, especially with large medical devices."* **Online interview with a provider, October 25, 2023**

The Automotive industry also shows significant readiness, reflected in 26.67% of responses, while the Printing and Logistics sectors display potential with 16.67% and 13.33%, (Table 46) respectively.

6.1.3 Predestined Machine Characteristics from Provider Perspective

The expert interviews underscore vital attributes for machines ideal for EaaS in the German machinery industry. High standardization is the leading characteristic, evident in 63.63% (Table

47) of responses. Mobility 33.33% and simplicity along with connectivity and high value or volume, each cited by 26.67% are also essential (Table 47).

> *"Whenever you are in a context of standardization and have a standard maintenance, the certain mobility of things, then it will be cheaper to offer equipment as a service, more attractive than in any other case."* **Online interview with an enabler, October 6, 2023**

As mentioned above, 30% of interviews (Table 44) mention equipment reuse in secondary markets as key, aligning with circular economy principles. Experts advise starting EaaS implementation with non-core business machines, due to challenges in accessing customer data and resistance to change, especially concerning intellectual properties:

> *"All machines that don't go into the core, i.e. that serve secondary processes, so to speak, because customers are still very cautious with core processes, understandably very cautious, and OEMs are even more so because they have to take a lot of risks. […] An EaaS can't do the core process now because I have to swap my intellectual property with my partner. I have to share it, because he has to be liable for something. […] These are exactly the things that are completely underestimated today in the design of such topics"* **Online interview with an enabler, November 10, 2023**

According to the interview results, the most promising machines for EaaS adoption in the German manufacturing industry are large medical devices like MRI, CT, and X-ray machines, constituting 20.00% (Table 48) of responses. CNC milling machines, construction tools, 3D printers, and large devices for hospital pharmacies, each at about 10.00%, (Table 48) are also seen as well fitting for EaaS.

6.1.4 Prototype of the Ideal EaaS Provider

Deriving from the data above and answering RQ10, the ideal EaaS provider in the German machinery industry can be portrayed as follows:

The Advanced Healthcare Equipment Manufacturer

Introducing a conceptual model of a financially robust MedTech Manufacturer in the German MedTech sector, representing an ideal EaaS provider persona. This entity is characterized by its strong financial foundation and specializes in producing advanced medical equipment such

as MRI and CT scanners. It boasts a significant IT infrastructure, facilitating seamless access to operational customer data. As a pioneer in the EaaS space, this manufacturer establishes industry benchmarks with its high-value, technologically advanced products, emphasizing standardization, mobility, and connectivity in its business model. Strategically targeting the healthcare sector, primarily large hospitals, it offers flexible, service-based solutions in line with circular economy principles. The current challenges faced by hospitals, including liquidity constraints and skilled staff shortages, align well with the service offerings of this provider, showcasing its relevance and potential impact in the market.

6.2 Customer Personas

A research gap identified by (Schaefers et al. 2021) is the lack of information on company characteristics and requirements for EaaS adoptions, particularly during the implementation phase. Therefore, this chapter focuses on creating customer profiles for EaaS, and answering the following research question:

RQ11: How can actual and potential EaaS customer personas be described according to current EaaS ecosystem participants?

Synthesizing expert interview data to understand distinct company characteristics, needs, and requirements is essential for customizing EaaS offerings, aligning services with customer expectations, and pinpointing value propositions for diverse segments.

6.2.1 Requirements for Customers to Adopt EaaS

For the presentation of customer requirements for adopting EaaS, the results are clustered into five business domains: finance, operations, sales & marketing, and strategy. In the finance domain (Table 49), the leading factor driving EaaS adoption is a need for high-cost machinery acquisition costs, representing 20% of responses. Liquidity shortage and high downtime costs follow. Companies are also influenced by financial KPIs and a lack of financial resources,

emphasizing the financial flexibility and efficiency EaaS offers. The operations domain (Table 51) highlights operational factors influencing EaaS adoption. Equipment being process-critical is a key requirement, with 13.33% of responses. In-house operation and maintenance cost disadvantages and low utilization of equipment also play significant roles. In the sales & marketing (Table 52), existing business relationships, companies with seasonal peaks, and existing maintenance and service contracts are major factors, each accounting for 10.00% of responses. Finally, the strategy domain (Table 50) shows that SMEs unable to afford risk and the need for faster innovation cycles are the primary strategic reasons for EaaS adoption, each at 10.00% of responses. Efficiency-driven customers and companies facing high uncertainties also find EaaS appealing.

6.2.2 Company Size and Predestined Industries Customer Perspective

In the following, the distribution of companies interested in EaaS based on their size is presented (Table 53). It shows that small and medium-sized enterprises (SMEs) are the predominant segment, representing about 26.67% of responses. Larger enterprises account for 10.00%. Regarding EaaS adoptions in certain industries, the findings show a clear indication (Table 54). The Healthcare sector forms the largest group with 23.33%, indicating significant interest in EaaS. The agricultural and mechanical engineering sectors each represent 13.33% and 10.00%, respectively, showing moderate interest (Table 54). The Automotive industry comes next at 6.67%.

6.2.3 EaaS Customer Personas

Based on the findings from the previous chapters, this section presents three customer personas that EaaS providers could face, thereby answering RQ11.

The Technology-Focused Innovator

This profile represents companies that are driven by the marketing and operational benefits of EaaS. They are typically characterized by their need for state-of-the-art technology and a quicker time-to-market to maintain a competitive edge. Such companies prioritize access to the latest machinery and the ability to enhance process efficiency without the burden of heavy capital expenditure. They often operate in fast-paced, technology-driven sectors like MedTech or Automotive, where staying ahead with the latest advancements is crucial. The Technology-Focused Innovator values EaaS for its capacity to align costs with actual usage, ensuring they pay for the value they receive while avoiding the risks and responsibilities of equipment ownership and maintenance.

The Cost-Conscious Streamliner

The Cost-Conscious Streamliner is primarily influenced by financial and strategic EaaS adoption drivers. These are businesses, often SMEs, that find the shift from CapEx to OpEx financially strategic as it stabilizes cash flows and aligns with their goal of financial resilience. They are looking to offload operational risks and focus on core business functions without the hassle of managing equipment. These firms are also drawn to EaaS due to its off-balance sheet financing and the operational flexibility it provides. They tend to face financial constraints and are attracted to the model's ability to update or upgrade assets under such limitations. These companies span across industries but are notably prevalent in sectors like printing and logistics, where operational efficiency is key.

The Autonomous Traditionalist

This profile is reflective of companies that are potential but reluctant EaaS customers, mainly due to organizational and operational inhibitors. They are often larger enterprises or those

deeply rooted in traditional business models with a preference for equipment ownership and CapEx. Such firms exhibit a strong "ownership-think" and a general resistance to change. While they acknowledge the potential operational benefits of EaaS, they are cautious about data security, loss of control over operations, and legal complexities in EaaS contracts. The Autonomous Traditionalist requires a tailored approach by EaaS providers that addresses these concerns directly, offering transparent pricing models, assurances of data security, and ample legal support. They may operate in sectors like agriculture and mechanical engineering, where the shift to service-based models is still emerging.

6.3 Validation Roadmap

In order to provide a managerial implication, the personas derived above will be embedded in an EaaS validation process. In assessing the transition towards EaaS, it's observed that such transitions are typically focused within specific products or segments, reducing complexity and facilitating success in adapting to this business model (Trumpf 2023; DMG MORI 2023.). The literature suggests that shifting from a product manufacturer to a service provider necessitates new organizational principles, structures, and processes (Oliva and Kallenberg 2003), which aligns with our findings. Our research also reveals an increase in risk aversion and financial constraints during the COVID-19 pandemic and the Ukraine War. Consequently, we propose an initial validation of EaaS potentials for OEMs, employing an MVP-driven approach by Original Equipment Manufacturers (OEMs), which is supported by 43.33% of interviewees (Table 43). This strategy focuses on maximizing learning with minimal resource investment during the initial development phase, following a milestone plan to inform investor or key decision-maker choices (Smith 2013), a common practice in software development.

At the validation's outset, OEM decision-makers should establish clear success metrics, such as the number of validated EaaS use cases under a set of criteria or acquiring a specified quantity

of letters of intent (LOI) or purchase orders. Organizational and financial resources must then be allocated, underlining the need for interdisciplinary teams capable of adaptive operations, possibly within an OEM's innovation unit or through outsourcing.

Emphasizing a customer-centric approach, the validation phase involves collaboration with potential customer segments, identified using proposed customer personas and incentivized by attractive EaaS offers. A significant ease in implementation is noted with digitally advanced customers (40% of interviewees, Table 38). This collaborative process should aim to fully understand the customer's value chain and the machines' roles, potentially via exploration workshops with representatives of selected customer segments.

The final phase involves assessing financial implications from MVP testing to build a strong business case for the EaaS offering, with inputs on customer payment willingness, technical implementation costs, and overall financial attractiveness for the OEM (23.33% of interviews, Table 41). This provides a well-informed basis for OEM decision-makers regarding further EaaS implementation.

7 Discussion, Implications and Future Research

The following section discusses meaning, importance, and relevance of all results across this thesis while also highlighting practical implications and potential future research paths.

Discussion of EaaS Drivers and Inhibitors: Provider Perspective

Marketing is highlighted in 57% of interviews as the top driver for EaaS adoptions, reflecting its significant recognition and importance in the German machinery industry. Interviews reveal insights beyond current literature, such as using EaaS to counter machine sales decline and introducing new product packages, suggesting it as a tool to familiarize customers with costlier equipment. These findings open avenues for future research on EaaS marketing drivers in terms of verifying these findings and applicability to other industries. Financial drivers, highlighted

in 53% of interviews and literature, include EaaS's accounting benefits, growth potential, and company valuation, pointing to significant financial incentives for German machinery providers after external shocks. 40% of interviews further mention strategic drivers indicating a strong relevance also for the German market while still leaving room for more pressing drivers. While literature focuses primarily on competitive positioning when it comes to strategic drivers, the interview findings provide additional value by emphasizing the potential to bind customers long term to the provider. These findings were especially relevant in the pharma and med-tech industry revealing potential future research paths to validate those findings. Only 20% of experts recognize the importance of operational aspects such as AI integration and predictive maintenance, reflecting trends that reshaped the industry and were enhanced by the pandemic. This low frequency may stem from limited awareness or education on this novel topic. These insights expand literature by showing practical applications of technological innovations in the industry and suggest future research directions. Surprisingly, there seems to be no significant motivation for EaaS adoption among providers for sustainability reasons according to the expert interviews. This partially contradicts the analyzed literature which highlights the beneficial impact of servitization on sustainability (Abdelkafi et al. 2022). Lastly, while the literature and interviews acknowledge the importance of broad organizational changes, the interviews further suggest that industry experts should prioritize real-world, actionable strategies such as direct sales involvement in processes. However, it is noteworthy that only 20% of all experts mentioned the relevance of organizational drivers, setting its relevance into perspective.

Operational inhibitors, mentioned by 73.3% of respondents making it the most pressing challenge for providers in the German machinery industry. The findings are generally in line with literature results and add additional insights into specific hurdles such as managing customer data complexities and addressing workforce skill gaps. Especially the letter finding offers a grounded perspective on the operational challenges unique to the German machinery

industry after the pandemic and the war and highlights potential future research paths such as an in-depth analysis of how data complexities and workforce skill gaps can be overcome. Strategic inhibitors are well documented in literature and highlighted by 56.7% of respondents suggest mainly a need for strategic reorientation to support the shift to EaaS models, reflecting a cautious approach to adopting new business models that diverge from traditional practices. Financial inhibitors, noted in 53% of interviews, include complexities with accounting standards like IFRS 15 and hesitancy towards self-financing. These points, expanding on existing literature, highlight the German machinery industry's specific reluctance towards investments and financial restructuring for EaaS models, emphasizing the practical financial concerns in this precision-driven, capital-heavy sector. Organizational inhibitors, noted by 43.3% of respondents and supported by literature, underscore practical challenges like major shifts and reluctance to change, crucial for moving to service-centric models. New findings include concerns over risk assumption and long sales cycles, not extensively covered in literature, suggesting future research opportunities in practical frameworks and roadmaps to shorten sales cycles for machinery companies. However, the frequency of these mentions suggests that providers face more pressing inhibitors. In terms of marketing inhibitors, the interviews perceive them as least pressing with 30% of respondents mentioning their relevance. Marketing EaaS at higher prices and communicating its added value, is particularly pertinent in the German industry known for conservative buying behaviour. These insights extend literature findings and suggest a need for targeted marketing strategies in future research and practice to address price sensitivity and customer hesitancy to successfully promoting EaaS offerings in the machinery sector.

Interviews suggest that COVID-19 has notably affected EaaS adoption, adding depth to existing literature. With 56.67% of data showing a positive pandemic impact on EaaS drivers and 33% of participants noting increased adoption, it appears the pandemic has spurred a move towards

more agile, digital solutions. These trends offer research opportunities for statistical validation and identifying industries best suited for EaaS. The Ukraine war, impacting EaaS adoption drivers for 33% of respondents and surpassing its effect on inhibitors (27%), has led to increased demand (10%) due to supply chain and economic disruptions. This highlights EaaS's role as a versatile solution in uncertain times. COVID-19 and the Ukraine conflict had a weaker impact on impeding EaaS adoption than on promoting it, with companies during these crises focusing on immediate operations rather than strategic investments like EaaS. This shift reflects an industry dealing with increased risk and resource scarcity, prioritizing short-term challenges over innovations. Future research might explore how firms can swiftly adapt EaaS in such crises, as these events have hindered the allocation of financial and strategic resources for service-oriented investments.

To conclude, in Germany's machinery industry, EaaS adoption is primarily driven by marketing and financial factors but hindered by operational and strategic challenges. Surprisingly, sustainability isn't a major motivator, opening up a future research path to validate this finding. The COVID-19 pandemic and Ukraine war have led robust firms to agile solutions and others to prioritize immediate operations over strategic EaaS investments. EaaS fits firms with certain financial and technological capabilities, not as a universal solution.

Discussion of EaaS Drivers and Inhibitors: Customer Perspective

Most of the analysed documents (83.33%) contain references to financial drivers, demonstrating substantial consideration of these drivers within practice and existing literature. This suggests that the financial incentives of EaaS adoption among customers, such as increased flexibility due to the CapEx to OpEx shift are well-recognized and documented in most of the research examined. Operational drivers, mentioned by 60.00% of interviews indicates a focused but not universal engagement with these drivers. The findings highlight the operational efficiencies and advancements that businesses seek through EaaS, with a strong focus on

maintenance support, process efficiency, and operational flexibility. Particularly regarding maintenance coverage by the EaaS provider, the comparative analysis shows a correspondence of these drivers in literature and in practice. Among the interviews, 43.33% mentioned strategic drivers, potentially indicating areas where further research is needed such as acquiring state-of-the-art technology for a competitive edge which scholarly works scarcely address. Literature further underrepresents the role of EaaS in offering market intelligence and cost savings for end-users, which could stem from an overlap with financial drivers, where cost-related benefits are more extensively discussed. The expert interviews did not emphasize marketing drivers. Surprisingly, they neither mentioned a significant motivation for EaaS adoption among customers for sustainability reasons. This suggests another potential discrepancy between the theoretical advantages proposed in scholarly research and the practical motivations experienced by the interview participants.

As the analysis of financial inhibitors shows, 43.33% of interviews did mention specific challenges for EaaS adoption, suggesting other more pressing barriers or implying irrelevance of these financial aspects for customers. Operational challenges were mentioned in 43.33% interviews, suggesting that less than half of the sample explicitly acknowledges these issues as significant barriers indicating that the rest may either lack concern or values other challenges more. Notably, the interviews revealed possible theoretical gaps by uncovering several critical aspects not covered in the analyzed literature such as limited understanding of the EaaS model, concerns over losing control over core business competencies, challenges to global value chains due to the pandemic, and a notable lack of SME digitalization. In total, 33.33% of documents reference organizational challenges, implying that they represent significant concerns for the minority of experts. Those who do not mention these specific challenges, might either do not perceive these factors as barriers or possibly have overcome these challenges. In contrast, various organizational inhibitors, particularly the limited legal capabilities to assess EaaS

contracts, are underrepresented in existing literature, indicating another potential future research path.

Overall, 74.19% of the interviews recognize the impacts of COVID-19 pandemic, on drivers indicating that the majority recognize the pandemic's influence on EaaS adoption for costumers. The data suggests that the pandemic has prompted businesses to reconsider their operational models, with EaaS becoming a strategic option to address emerging challenges. The emphasis on de-risking supply chains through nearshoring (22.58%) indicates a pandemic-driven shift towards supply chain resilience, a major EaaS adoption driver due to its potential for localized and flexible supply solutions. The increased risk avoidance and limited CapEx (19.35%) point to a heightened awareness of operational risks and a reluctance to commit capital expenditures post-pandemic, making the EaaS model more appealing to customers. Further, Inflation and energy cost concerns, as noted in interviews, may push businesses towards EaaS for cost management.

Despite 67.74% of interviews contain statements referring to the Ukraine war's impact as a driver for EaaS adoption, the significant proportion of indifferent responses (25.81%) could imply a strategic detachment or focus on other predominant factors. Rising energy costs (19.35% of respondents) and increased investment wariness (also 19.35%) likely boost EaaS appeal due to its predictable operational costs and lower upfront expenses, while general risk avoidance suggests businesses might favor EaaS for its risk mitigation in the current heightened risk environment. Additionally, nearshoring strategies and avoidance of high investment costs were mentioned in interviews suggesting, again, that the supply-chain risks and the desire to avoid large capital expenditures due to the war may drive the adoption of EaaS, which could be a viable option due to its flexibility and scalability. Nevertheless, the frequent indifferent responses imply further research paths to explore the impact of the Ukraine war on EaaS customer drivers.

The pandemic's effect on EaaS adoption inhibitors is inconsistently recognized, with half of the documents acknowledging it and the other half not. The analysis shows that a notable 16.67% of respondents are indifferent to the pandemic's effect on EaaS adoption barriers, indicating no change in their perspective due to COVID-19. Concerns over supply chain vulnerability, cited by 13.33% of respondents, could increase or decrease hesitation in adopting new models like EaaS. Economic uncertainties possibly have led customers to scale back their EaaS initiatives, while 6.67% show a trend towards insourcing and a more cautious stance on EaaS adoption. In addition, customers may need more information to integrate EaaS effectively, as the noted lack of understanding about EaaS and rethinking of their own service offerings show.

Less than half of the documents (46.67%) indicate the Ukraine war exacerbates EaaS adoption inhibitors, showing varied perceptions among companies about the war's impact on EaaS-related decisions. Most respondents (23.33%) are indifferent about the Ukraine War's impact on EaaS adoption, implying the conflict hasn't altered their stance. However, 10% finding EaaS too costly indicates heightened cost concerns due to the war. A 10% rise in change resistance, probably from war-related uncertainties, points to caution in EaaS adoption, underscoring the importance of understanding client barriers in a post-conflict economy.

To enhance its credibility, future market education needs to focus on articulating the benefits of technological accessibility and financial flexibility for SMEs, alongside presenting robust business cases, and clearly addressing legal concerns.

Discussion of Firm-level Conditions and Validation Roadmap

Considering the findings related to RQ7, RQ8 and RQ9, a pronounced dependence on financing partners for the successful implementation of EaaS models is highlighted repeatedly. Especially under the influence of current external shocks, fluctuating interest rates and market conditions are identified as critical factors influencing the feasibility of EaaS financing. Future research could explore how EaaS models can be implemented sustainably, even within unstable financial

environments. It could also assess the reliability and consistency of financing partners under fluctuating market conditions. Moreover, the findings indicate a necessity for companies to adapt their organizational structures to achieve readiness for EaaS implementation. This includes examining ways to streamline process so that companies can implement or test EaaS models more efficiently. Moreover, the importance of an MVP approach is repeatedly emphasized and therefore included in our proposal for a validation roadmap. Further research could refine or test the validation roadmap in the field.

Discussion of Provider and Customer Personas

In the German machinery industry, particularly in MedTech, the ideal EaaS provider persona demonstrates the necessity of robust financial support and advanced technological infrastructure. These providers, as first movers, have the potential to set market standards and capitalize on the untapped market, especially in high-value, technology-driven sectors like healthcare. However, this raises questions about the challenges for smaller providers who may lack these resources and how they can effectively compete in the EaaS landscape. Consequently, EaaS appears to be more of a solution to companies that already possess the above-mentioned financial and technological requirements rather than a one size fits it all model that is applicable to any company. Concurrently, the customer personas reveal a strong inclination towards EaaS among SMEs, accounting for a significant portion of the market (88.89% of respondents). This preference is likely due to the flexible and cost-effective nature of EaaS models. Larger enterprises, representing a smaller segment (33.33% of respondents), show less interest but are still part of the EaaS customer base. This diversity across sectors, notably healthcare and agriculture, suggests EaaS's broad appeal and utility but also the need for an initial customer segmentation. Previous studies have raised concerns about persona creation, such as time consumption, biases, and their decision-making relevance (Salminen et al. 2018). In our research, personas are crafted from 30 interviews, offering a focused yet brief

methodology. While these personas provide qualitative insights, they necessitate real-world validation to confirm their practicality and effectiveness, suggesting a future research direction. As the key challenge for providers is the pre-financing of machines, future research could explore ways to match financiers with providers not having the ability to self-finance the machines while especially focusing on SMEs. Financially robust companies, as described in the provider persona, can expand into new customer segments, including SMEs and start-ups, with an EaaS offering. By integrating early into businesses' critical processes, OEMs can exploit EaaS to enhance customer lifetime value. In turn, these segments reap the benefits of the EaaS model, gaining access to advanced technology without substantial capital investment. However, they require clear guidance and reassurance about the advantages and risks associated with EaaS models. In summary, while the research-backed EaaS personas provide foundational industry insights, they also present a point of reference for further exploration and validation.

8 Limitations

This thesis sheds light on Germany's EaaS model in the machinery industry, but its insights are limited by the newness of EaaS research in Germany and the absence of long-term studies. Consequently, our study can only offer an updated snapshot of the current state of EaaS, rather than an in-depth analysis of its evolution over time. The scope of the literature review, confined to a Scopus search of 21 journals and 22 additional sources, presents another limitation. This selective approach means the review encompasses just a segment of the global EaaS research landscape, potentially omitting crucial insights and broader developments in the field. As a result, the literature-based conclusions drawn in this thesis may not fully encapsulate the entirety of global EaaS research. Furthermore, the study's reliance on a limited number of interviews (n=30) poses a constraint. While these interviews provide valuable perspectives, they might not capture the full diversity of opinions and experiences within the industry. This

limitation is particularly relevant given the geographical focus on the German machinery industry, raising questions about the applicability of the findings to other industries or markets. Caution is advised in generalizing these results beyond the specific context of this study. The methodology of the interviews, primarily semi-structured, limits the comparability of data across different respondents. This approach also restricts the ability to conduct more quantitative analyses, such as statistical regression, especially as few categories reached the threshold of 30 mentions required for such analysis. Consequently, the data's statistical significance is impacted, with high p-values indicating that the results, while indicative, do not provide clear, definitive evidence. The dominance of certain perspectives in the interview sample also presents a limitation. The majority of participants were from consultancy firms and providers, with a noted challenge in acquiring a broader range of customer insights. This imbalance potentially skews the understanding of the EaaS ecosystem, emphasizing the provider and consultant viewpoint over that of the customer. Additionally, engaging a larger number of representatives from German manufacturing firms familiar with EaaS proved difficult, further limiting the breadth of industry insights in the study. Lastly, the legal, financial, and accounting perspectives play a crucial role in the concept of EaaS. Due to the limited scope of this thesis, the financial and accounting implications of EaaS are explored only at a high level, ensuring a general understanding rather than a detailed examination.

In conclusion, while this thesis contributes important perspectives to the understanding of EaaS in the German machinery industry, these limitations underscore the necessity for further, more comprehensive research within the EaaS domain.

9 Conclusion

This thesis has comprehensively examined the adoption of EaaS within the German machinery industry, addressing a range of research questions from both OEMs' and customers'

perspectives, and considering the impact of external shocks namely the COVID-19 pandemic and the Ukraine war. In the course of this work, we were able to validate the numerous drivers and inhibitors of EaaS models as mentioned by experts from the field and specify the aspects relevant to both providers and customers. It becomes evident that EaaS is not a model that can or should be arbitrarily adapted by OEMs and their clients. EaaS can particularly be an innovative measure in the offerings for larger and financially stronger companies as part of a differentiation strategy. For financially weaker SMEs with a high demand for state-of-the-art technology in their machinery, EaaS can be implemented as a measure within an efficiency strategy. It is crucial that potential providers thoroughly investigate the needs of the respective customer segments and integrate these early into the creation of their EaaS offerings. To optimize this process, a cost-effective, MVP-driven approach is important. One possibility is to explore the potentials of EaaS outside the core organization, for example, through an organizational unit that can operate independently of slow corporate processes. To also enable better scalability of this approach, providers might focus on machines with a high degree of standardization, although these tend to require less service effort than highly customized machines. The advantages here are, on one hand, the replicability of insights from customer feedback. On the other hand, these machines can be offered again in the secondary market after they are no longer part of an EaaS offering. It also becomes apparent that EaaS can contribute to the principles of the circular economy (reuse/reduce), although this aspect, surprisingly, did not find significant mention as a driver in our study. Thus, the adoption of EaaS is primarily driven by the goal of differentiation, financial flexibility, and operational efficiency, and can, as a by-product, enable a more sustainable use of machinery.

10 Bibliography

Abdelkafi, N., M. Pero, A. Masi, and I. Capurso. 2022. “Revisiting the Servitization-Sustainability Link: A Case Study in the Professional Printing Supply Chain.” *Cleaner Logistics and Supply Chain* 4. https://doi.org/10.1016/j.clscn.2022.100061.

Baines, T. S., H. W. Lightfoot, O. Benedettini, and J. M. Kay. 2009. “The Servitization of Manufacturing: A Review of Literature and Reflection on Future Challenges.” *Journal of Manufacturing Technology Management*. https://doi.org/10.1108/17410380910960984.

Billwerk. n.d. “Equipment as a Service (EaaS).” Accessed September 17, 2023. https://www.billwerk.plus/de/wiki/geschaftsmodell/equipment-as-a-service-eaas/.

Bunde, Nicolas. 2021. “Covid-19 Und Die Industrie: Führt Die Krise Zum Rückbau Globaler Lieferketten?” https://www.ifo.de/DocDL/sd-2021-01-bunde-branchen-dialog-industrie.pdf.

Butcher, Natasha. 2023. “Equipment-as-a-Service: Moving to a New Revenue Model.” March 2, 2023. https://www.simon-kucher.com/en/insights/equipment-service-moving-new-revenue-model.

Chang, Yen-ning, Youn-kyung Lim, and Erik Stolterman. 2008. “Personas: From Theory to Practices.” In *Proceedings of the 5th Nordic Conference on Human-Computer Interaction: Building Bridges*, 439–42. New York, NY, USA: ACM. https://doi.org/10.1145/1463160.1463214.

Chauhan, Nikhil. 2022. “The Power Of XaaS In Manufacturing: New Business Models Boost Productivity And Generate Recurring Revenues.” *Forbes*, 2022. https://www.forbes.com/sites/windriver/2022/08/02/the-power-of-xaas-in-manufacturing-new-business-models-boost-productivity-and-generate-recurring-revenues/?sh=2875b1d75a33.

Ciupek, Martin. 2023. “Folge Des Kriegs in Der Ukraine: Deutsche Industrie Setzt Neue Prioritäten.” VDI Nachrichten. February 24, 2023. https://www.vdi-nachrichten.com/technik/produktion/folge-des-kriegs-in-der-ukraine-deutsche-industrie-setzt-neue-prioritaeten/.

DMG MORI. n.d. “PAYZR by DMG MORI.” Accessed December 15, 2023. https://de.dmgmori.com/produkte/payzr.

Dunphy, Steve, and Paul A. Herbig. 1995. “Acceptance of Innovations: The Customer Is the Key!” *The Journal of High Technology Management Research* 6 (2): 193–209. https://doi.org/10.1016/1047-8310(95)90014-4.

Ehret, Michael, and Jochen Wirtz. 2017. “Unlocking Value from Machines: Business Models and the Industrial Internet of Things.” *Journal of Marketing Management*. Routledge. https://doi.org/10.1080/0267257X.2016.1248041.

Felix Prumbohm. 2023. “Production as a Service: Promoting Growth through Asset Sharing.” August 25, 2023.

Gill, P., K. Stewart, E. Treasure, and B. Chadwick. 2008. “Methods of Data Collection in Qualitative Research: Interviews and Focus Groups.” *British Dental Journal* 204 (6): 291–95. https://doi.org/10.1038/bdj.2008.192.

Grubic, Tonci, and Ian Jennions. 2018. “Do Outcome-Based Contracts Exist? The Investigation of Power-by-the-Hour and Similar Result-Oriented Cases.” *International Journal of Production Economics* 206 (December): 209–19. https://doi.org/10.1016/j.ijpe.2018.10.004.

Humbeck, Philipp. 2022. “Modell Zur Analyse Und Gestaltung von Business-Ökosystemen Für Die Entwicklung von Produkt-Service-Systemen Im Maschinen-Und Anlagenbau.” https://doi.org/10.18419/opus-12562.

Johnston, Wesley J., and Thomas V. Bonoma. 1981. “The Buying Center: Structure and Interaction Patterns.” *Journal of Marketing* 45 (3): 143–56. https://doi.org/10.2307/1251549.

Kamp, Bart, Kristina Zabala, and Arantza Zubiaurre. 2023. “How Can Machine Tool Builders Capture Value from Smart Services? Avoiding the Service and Digitalization Paradox.” *Journal of Business and Industrial Marketing* 38 (2): 303–16. https://doi.org/10.1108/JBIM-12-2021-0588.

Kristoffersen, Eivind, Fenna Blomsma, Patrick Mikalef, and Jingyue Li. 2020. “The Smart Circular Economy: A Digital-Enabled Circular Strategies Framework for Manufacturing Companies.” *Journal of Business Research* 120 (November): 241–61. https://doi.org/10.1016/j.jbusres.2020.07.044.

Küpper, Daniel, Kristian Kuhlmann, Ayisha Corey, Monika Saunders, Arnd Huchzermeier, Phillipp Hypko, and Jan Nordemann. 2022. “Boosting Resilience with Production as a Service.”

Ladas, Konstantinos, Stylianos Kavadias, and Christoph Loch. 2019. “Product Selling Versus Pay-Per-Use Service: A Strategic Analysis of Competing Business Models.” https://ssrn.com/abstract=3356458.

Mastrogiacomo, Luca, Federico Barravecchia, and Fiorenzo Franceschini. 2019. “A Worldwide Survey on Manufacturing Servitization.” *International Journal of Advanced Manufacturing Technology* 103 (9–12): 3927–42. https://doi.org/10.1007/s00170-019-03740-z.

Mayring, Philipp. 2000. “Qualitative Content Analysis.” http://www.zuma-mannheim.de/research/en/methods/textanalysis/.

McKinsey & Company. 2020. “Rapid-Steps-That-Help-Can-Help-Machinery-and-Industrial-Operations-Recover-Vf.” https://www.mckinsey.com/industries/industrials-and-electronics/our-insights/beyond-covid-19-rapid-steps-that-can-help-machinery-and-industrial-automation-companies-recover#/.

———. 2023. “War-in-Ukraine-Twelve-Disruptions-Changing-the-Worldupdate.”

Monitor Deloitte. n.d. “Equipment-as-a-Service From Capex to Opex-New Business Models for the Machinery Industry.”

Moro, S. R., P. A. Cauchick-Miguel, and G. H.S. Mendes. 2020. “Product-Service Systems Benefits and Barriers: An Overview of Literature Review Papers.” *International Journal of Industrial Engineering and Management* 11 (1): 61–70. https://doi.org/10.24867/IJIEM-2020-1-253.

Najmaei, A., and Z. Sadeghinejad. 2023. “Green and Sustainable Business Models: Historical Roots, Growth Trajectory, Conceptual Architecture and an Agenda for Future Research—A Bibliometric Review of Green and Sustainable Business Models.” *Scientometrics* 128 (2): 957–99. https://doi.org/10.1007/s11192-022-04577-2.

Niu, Y., Z. Jiang, N. Geng, and S. Jiang. 2021. “Disclosing the Formation and Value Creation of Servitization through Influential Factors: A Systematic Review and Future Research Agenda.” *International Journal of Production Research* 59 (23): 7057–89. https://doi.org/10.1080/00207543.2020.1834158.

Oliva, Rogelio, and Robert Kallenberg. 2003. “Managing the Transition from Products to Services.” *International Journal of Service Industry Management* 14 (2): 160–72. https://doi.org/10.1108/09564230310474138.

Pirola, F., X. Boucher, S. Wiesner, and G. Pezzotta. 2020. “Digital Technologies in Product-Service Systems: A Literature Review and a Research Agenda.” *Computers in Industry* 123. https://doi.org/10.1016/j.compind.2020.103301.

Priyono, Anjar. 2017. “Understanding the Benefits of Product-Service Systems for Parties Involved in Remanufacturing.” *Journal of Industrial Engineering and Management* 10 (2Special Issue): 323–51. https://doi.org/10.3926/jiem.2050.

relayr. n.d. “Enabling the Equipment As-a-Service Model.” Accessed September 15, 2023. https://relayr.io/insurance-and-financing-strategies-eaas/.

Roth, Pascal, Karl Strempel, Oliver Straehle, and Helen Liu. 2022. “Machinery as a Service: A Radical Shift Is Underway.” https://www.bain.com/insights/machinery-as-a-service-global-machinery-and-equipment-report-2022/.

Salminen, Joni, Bernard J. Jansen, Jisun An, Haewoon Kwak, and Soon-gyo Jung. 2018. “Are Personas Done? Evaluating Their Usefulness in the Age of Digital Analytics.” *Persona Studies* 4 (2): 47–65. https://doi.org/10.21153/psj2018vol4no2art737.

Schaefers, T., S. Ruffer, and E. Böhm. 2021. “Outcome-Based Contracting from the Customers’ Perspective: A Means-End Chain Analytical Exploration.” *Industrial Marketing Management* 93: 466–81. https://doi.org/10.1016/j.indmarman.2020.06.002.

Schlipf, Matthias, and Uwe Seebacher. 2021. “Equipment-as-a-Service.”

Schroderus, Joonas, Lester Allan Lasrado, Karan Menon, and Hannu Kärkkäinen. 2021. “Towards a Pay-Per-X Maturity Model for Equipment Manufacturing Companies.” In *Procedia Computer Science*, 196:226–34. Elsevier B.V. https://doi.org/10.1016/j.procs.2021.12.009.

Schymanietz, M., J.M. Jonas, and K.M. Möslein. 2022. “Exploring Data-Driven Service Innovation—Aligning Perspectives in Research and Practice.” *Journal of Business Economics* 92 (7): 1167–1205. https://doi.org/10.1007/s11573-022-01095-8.

Smith, Kel. 2013. “Defining Inclusive Innovation.” In *Digital Outcasts*, 93–124. Elsevier. https://doi.org/10.1016/B978-0-12-404705-1.00005-4.

Stanula, P., C. Praetzas, O. Kohn, J. Metternich, M. Weigold, and A. Buchwald. 2020. “Stress-Oriented, Data-Based Payment Model for Machine Tools.” In *Procedia CIRP*, 93:1526–31. https://doi.org/10.1016/j.procir.2020.03.080.

Stojkovski, I., A.-K. Achleitner, T. Lange, and S. Jarchow. 2022. “Equipment as a Service and the Role of Technology: The Transition towards Usage-Based Business Models.” *International Journal of Entrepreneurial Venturing* 14 (4–5): 413–48. https://doi.org/10.1504/ijev.2022.127454.

Stojkovski, Isabella, Ann-Kristin Achleitner, and Thomas Lange. 2022. “Equipment as a Service: The Transition Toward Usage-Based Business Models *.” https://ssrn.com/abstract=3763004.

Trumpf. n.d. “Pay per Part.” Accessed December 15, 2023. https://www.trumpf.com/de_INT/produkte/services/services-maschinen-systeme-und-laser/pay-per-part/.

VDMA e. V. 2023. “Global Machinery Turnover.” 2023. https://www.vdma.org/mechanical-plant-engineering-figures-charts#:~:text=Die%20Maschinenexporte%20der%20EU%2D27,Italien%20mit%2089%2C9%20Mrd.

Wang, J., K. Zhang, K.-Y. Lin, and L. Feng. 2023. “A Systematic Review for Organizing Servitization by Multi-Actor Collaborations: Lenses, Factors and Outcomes.” *Journal of Business and Industrial Marketing* 38 (4): 828–51. https://doi.org/10.1108/JBIM-07-2021-0355.

Witell, Lars, and Martin Löfgren. 2013. “From Service for Free to Service for Fee: Business Model Innovation in Manufacturing Firms.” *Journal of Service Management* 24 (5): 520–33. https://doi.org/10.1108/JOSM-04-2013-0103.

11 Appendix

11.1 Figures

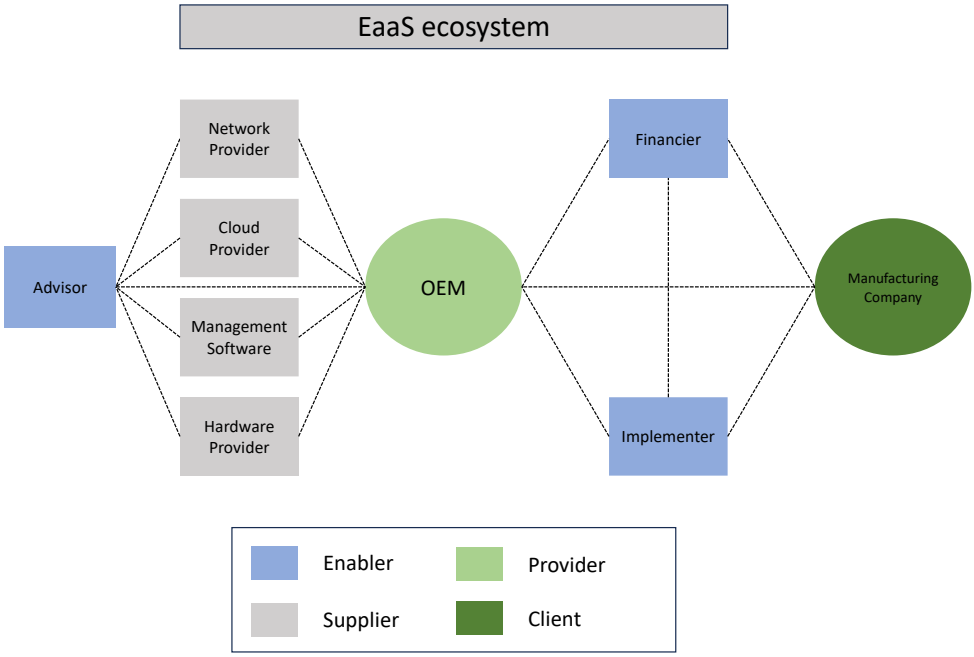

Figure 1: EaaS Ecosystem

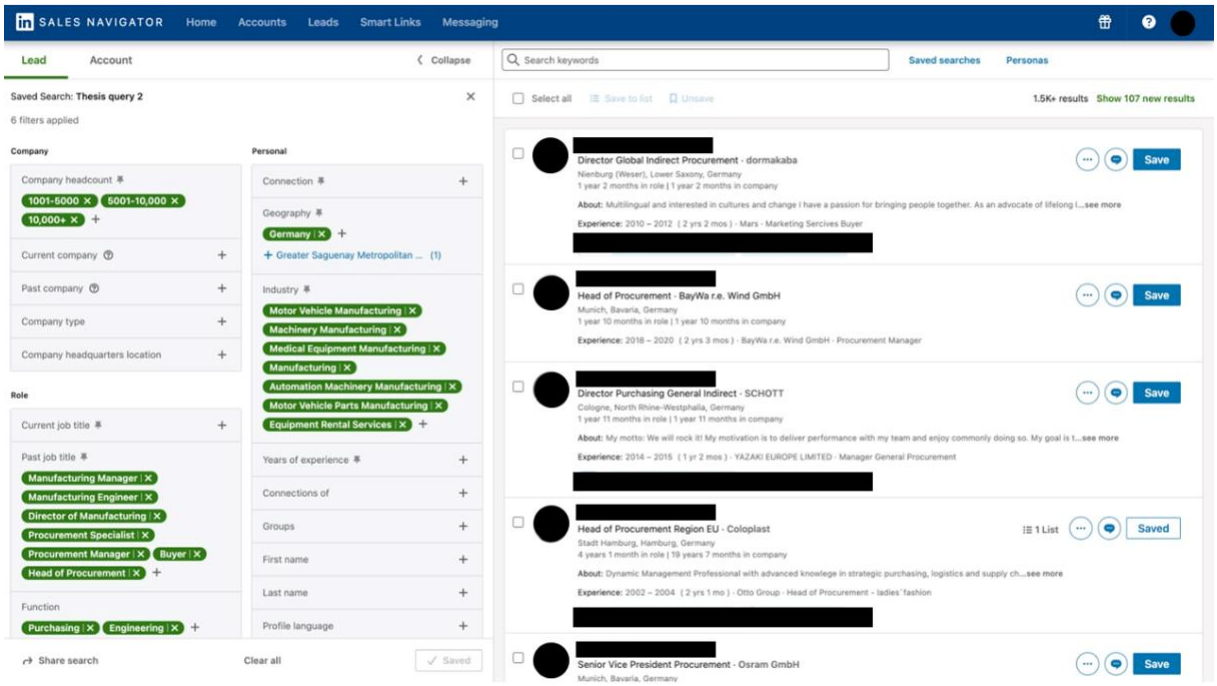

Figure 2: Candidate Selection - LinkedIn Search Query 1/2

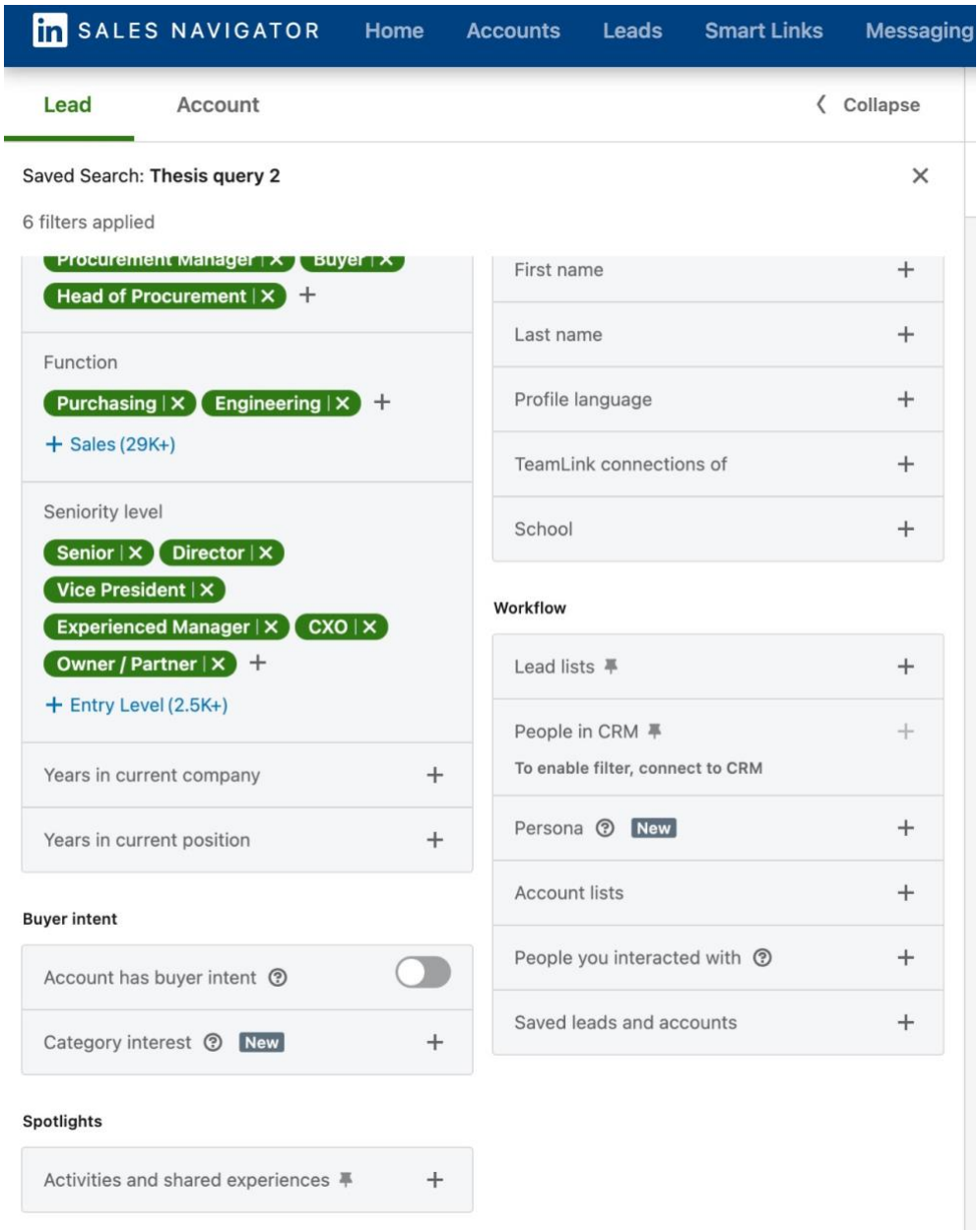

Figure 3: Candidate Selection - LinkedIn Search Query 2/2

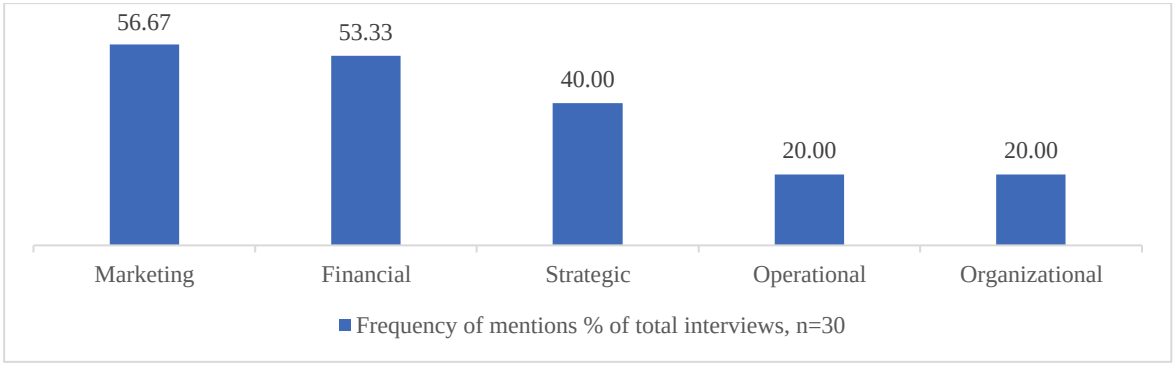

Figure 4: Interview Firm Level Drivers of EaaS Adoption

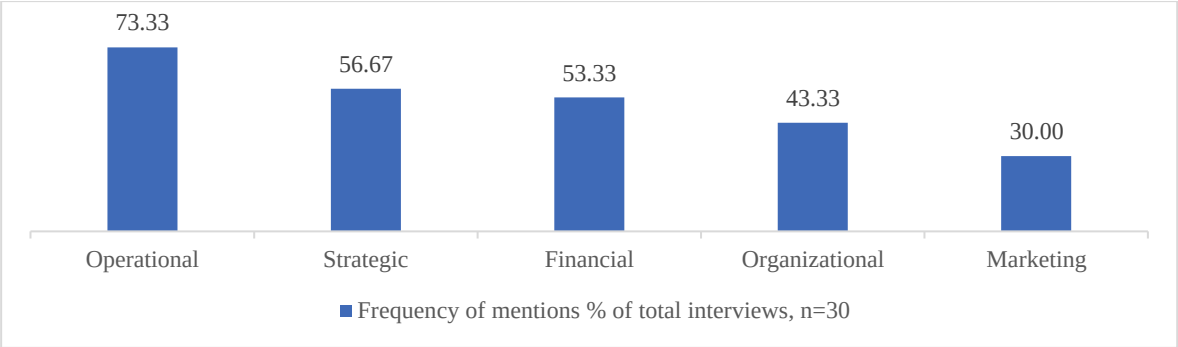

Figure 5: Interview Firm Level Inhibitors of EaaS Adoption

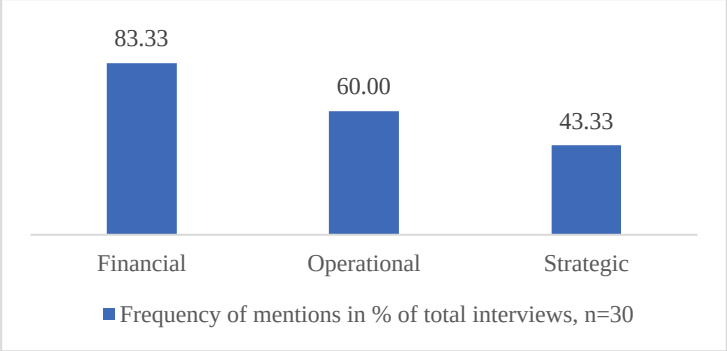

Figure 6: EaaS Adoption Drivers for Customers

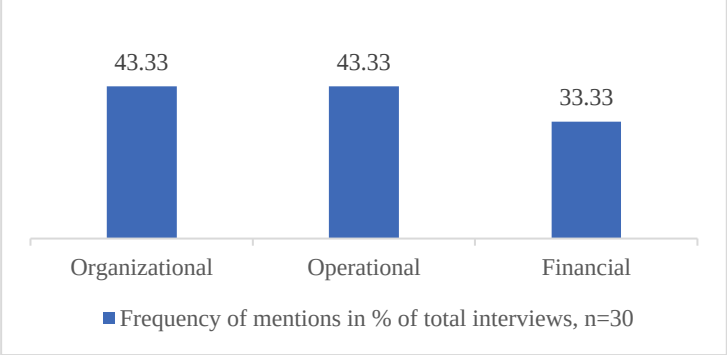

Figure 7: EaaS Adoption Challenges for Customers

11.2 Tables

Manual Research					
Item type	**Authors**	**Title**	**Publisher**	**Year**	**Link**
Journal Article	Oliva R,Kallenberg R	Managing the transition from products to services	International Journal of Service Industry Management	2003	http://dx.doi.org/10.1108/09564230310474138
Journal Article	Kamp B,Zabala K,Zubiaurre A	How can machine tool builders capture value from smart services? Avoiding the service and digitalization paradox	Journal of Business and Industrial Marketing	2023	http://dx.doi.org/10.1108/JBIM-12-2021-0588
Journal Article	Grubic T,Jennions I	Do outcome-based contracts exist? The investigation of power-by-the-hour and similar result-oriented cases	International Journal of Production Economics	2018	http://dx.doi.org/10.1016/j.ijpe.2018.10.004
Miscellaneous	Krenz W,Kronenwett D	IS "PAY-PER-USE" THE FUTURE IN MACHINERY PRICING?	Oliver Wymann	n/a	https://www.oliverwyman.com/our-expertise/insights/2019/nov/perspectives-on-manufacturing-industries-vol-14/manufacturing-in-a-changing-world/is-pay-per-use-the-future-in-manufacturing-industries.html
Journal Article	Koen, Peter A., Bertels, Heidi M. J., Elsum, Ian R.	THE THREE FACES OF BUSINESS MODEL INNOVATION:	Research Technology Management	2011	https://www.researchgate.net/publication/233550340_The_Three_Face

		CHALLENGES FOR ESTABLISHED FIRMS			s_of_Business_Model_Innovation_Challenges_for_Established_Firms
Journal Article	Jiang ZZ,Feng G,Yi Z,Guo X	Service-oriented manufacturing: A literature review and future research directions	Frontiers of Engineering Management	2022	http://dx.doi.org/10.1007/s42524-021-0171-3
Journal Article	Witell L,Löfgren M	From service for free to service for fee: Business model innovation in manufacturing firms	Journal of Service Management	2013	http://dx.doi.org/10.1108/JOSM-04-2013-0103
Journal Article	Kastalli IV,Van Looy B,Neely A	Steering Manufacturing Firms Towards Service Business Model Innovation	California Management Review	2013	http://ssrn.com/abstract=2407392https://ssrn.com/abstract=2407392Electroniccopyavailableat:http://ssrn.com/abstract=2407392http://www.jstor.org/discover/;http://dx.doi.org/10.1525/cmr.2013.56.1.100?uid=3737952&uid=2134
Journal Article	Baines, T. S., Lightfoot, H. W.,Benedettini, O., Kay, J. M.	The servitization of manufacturing; a review of literature	Journal of Manufacturing Technology Management	2009	http://dx.doi.org/10.1108/17410380910960984
Conference Paper	Schroderus J,Lasrado LA,Menon K,Kärkkäinen H	Towards a Pay-Per-X Maturity Model for Equipment Manufacturing Companies	Procedia Computer Science	2021	http://dx.doi.org/10.1016/j.procs.2021.12.009
Journal Article	Stojkovski I,Achleitner AK,Lange T	Equipment as a Service: The Transition Toward Usage-Based Business Models *	International Journal of Entrepreneurial Venturing	2022	https://ssrn.com/abstract=3763004

Miscellaneous	Ladas K,Kavadias S,Loch C	Product Selling Versus Pay-Per-Use Service: A Strategic Analysis of Competing Business Models	Management Science	2019	https://ssrn.com/abstract=3356458
Journal Article	Ehret M,Wirtz J	Unlocking value from machines: business models and the industrial internet of things	Journal of Marketing Management	2017	http://dx.doi.org/10.1080/0267257X.2016.1248041
Report	Schlipf M,Seebacher U	Equipment-as-a-Service Market Study 2021 - Prerequisites, barriers and success factors for EaaS – an international and industry-wide study in the capital goods segment	Munich University of Applied Sciences	2021	https://mediapool.hm.edu/media/fk10/fk10_lokal/alte_website_1/05_die fakultt/03_personen/schlipf/studien/Equipment-as-a-Service_MarketStudy_2021_en_HM_Schlipf_Seebacher.pdf
Web Article	Billwerk	Equipment as a Service (EaaS)	Billwerk	2022	https://www.billwerk.plus/de/wiki/geschaftsmodell/equipment-as-a-service-eaas/;http://dx.doi.org/10.18419/opus-12562
Whitepaper	Relayr	Enabling the Equipment as-a-Service Model	Relayr	2021	https://www.hannovermesse.de/apollo/hanover_messe_2021/obs/Binary/A1086204/EN%20-%20Enabling%20the%20EaaS%20Model-Insurance%20and%20Financing%20Strate

					gies%20LR.pdf
Blog Article	Butcher N	Equipment-as-a-Service: Moving to a new revenue model	Simon Kucher	2023	https://www.simon-kucher.com/en/insights/equipment-service-moving-new-revenue-model
Web Article	Chauhan N	The Power Of XaaS In Manufacturing: New Business Models Boost Productivity And Generate Recurring Revenues	Forbes Magazine	2022	https://www.forbes.com/sites/windriver/2022/08/02/the-power-of-xaas-in-manufacturing-new-business-models-boost-productivity-and-generate-recurring-revenues/?sh=2875b1d75a33
Journal Article	Priyono A	Understanding the benefits of product-service systems for parties involved in remanufacturing	Journal of Industrial Engineering and Management	2017	http://dx.doi.org/10.3926/jiem.2050
Journal Article	Moro SR,Cauchick-Miguel PA,Mendes GH	Product-service systems benefits and barriers: an overview of literature review papers	International Journal of Industrial Engineering and Management	2020	http://dx.doi.org/10.24867/IJIEM-2020-1-253
Journal Article	Abrell T,Pihlajamaa M,Kanto L,Brocke JV,Uebernickel F	The role of users and customers in digital innovation: Insights from B2B manufacturing firms	Information and Management	2016	http://dx.doi.org/10.1016/j.im.2015.12.005
Journal Article	Koji Kimita et. Al	Servitization maturity model: developing distinctive capabilities for successful	Journal of Manufacturing Technology Management	2022	http://dx.doi.org/10.1108/JMTM-07-2021-0248

		servitization in manufacturing companies			
		Scopus Query			
Journal Article	Abdelkafi N,Pero M,Masi A,Capurso I	Revisiting the servitization-sustainability link: A case study in the professional printing supply chain	Cleaner Logistics and Supply Chain	2022	http://dx.doi.org/10.1016/j.clscn.2022.100061
Journal Article	Xing Y,Liu Y	Integrating product-service innovation into green supply chain management from a life cycle perspective: A systematic review and future research directions	Technovation	2023	http://dx.doi.org/10.1016/j.technovation.2023.102825
Journal Article	Kanzari A,Rasmussen J,Nehler H,Ingelsson F	How financial performance is addressed in light of the transition to circular business models - A systematic literature review	Journal of Cleaner Production	2022	http://dx.doi.org/10.1016/j.jclepro.2022.134134
Journal Article	Wang J,Zhang K,Lin KY,Feng L	A systematic review for organizing servitization by multi-actor collaborations: lenses, factors and outcomes	Journal of Business and Industrial Marketing	2023	http://dx.doi.org/10.1108/JBIM-07-2021-0355
Journal Article	Najmaei A,Sadeghinejad Z	Green and sustainable business models: historical roots, growth trajectory, conceptual architecture and an agenda for future research—A bibliometric review of green and sustainable business models	Scientometrics	2023	http://dx.doi.org/10.1007/s11192-022-04577-2

Journal Article	Schymanietz M,Jonas JM,Möslein KM	Exploring data-driven service innovation—aligning perspectives in research and practice	Journal of Business Economics	2022	http://dx.doi.org/10.1007/s11573-022-01095-8
Journal Article	Stojkovski I,Achleitner AK,Lange T,Jarchow S	Equipment as a service and the role of technology: the transition towards usage-based business models	International Journal of Entrepreneurial Venturing	2022	http://dx.doi.org/10.1504/ijev.2022.127454
Journal Article	Stahl B,Häckel B,Leuthe D,Ritter C	Data or Business First?—Manufacturers' Transformation Toward Data-driven Business Models	Schmalenbach Journal of Business Research	2023	http://dx.doi.org/10.1007/s41471-023-00154-2
Miscellaneous	Hidalgo-Carvajal D,Carrasco-gallego R,Morales-alonso G	From goods to services and from linear to circular: The role of servitization's challenges and drivers in the shifting process	Sustainability (Switzerland)	2021	http://dx.doi.org/10.3390/su13084539
Conference Paper	Alaluss M,Drechsler C,Kurth R,Mauersberger A,Ihlenfeldt S,Marré M,Labs R	Usage-based leasing of complex manufacturing systems: A method to transform current ownership-based into pay-per-use business models	Conference on Manufacturing Systems	2022	http://dx.doi.org/10.1016/j.procir.2022.05.138
Miscellaneous	Häckel B,Huber R,Stahl B,Stöter M	Becoming a Product-Service System Provider – A Maturity Model for Manufacturers	Lecture Notes in Information Systems and Organisation	2021	http://dx.doi.org/10.1007/978-3-030-86790-4_13
Journal Article	Niu Y,Jiang Z,Geng N,Jiang S	Disclosing the formation and value creation of servitization through influential factors: a systematic review	International Journal of Production Research	2021	http://dx.doi.org/10.1080/00207543.2020.1834158

		and future research agenda			
Book	Sledziewska K,Włoch R	The economics of digital transformation: The disruption of markets, production, consumption, and work	Routledge	2021	http://dx.doi.org/10.4324/9781003144359
Conference Paper	Stanula P,Praetzas C,Kohn O,Metternich J,Weigold M,Buchwald A	Stress-oriented, data-based payment model for machine tools	Conference on Manufacturing Systems	2020	http://dx.doi.org/10.1016/j.procir.2020.03.080
Book	Erixon F,Weigel B	The innovation illusion: How so little is created by so many working so hard	Yale University Press	2016	https://doi.org/10.1177/0019793919864 5
Journal Article	Schaefers T,Ruffer S,Böhm E	Outcome-based contracting from the customers' perspective: A means-end chain analytical exploration	Industrial Marketing Management	2021	http://dx.doi.org/10.1016/j.indmarman.2020.06.002
Journal Article	Bressanelli G,Saccani N,Perona M	Investigating Business Potential and Users' Acceptance of Circular Economy: A Survey and an Evaluation Model	Sustainability (Switzerland)	2022	http://dx.doi.org/10.3390/su14020609
Journal Article	Pirola F,Boucher X,Wiesner S,Pezzotta G	Digital technologies in product-service systems: a literature review and a research agenda	Computers in Industry	2020	http://dx.doi.org/10.1016/j.compind.2020.103301
Journal Article	Acerbi F,Taisch M	A literature review on circular economy adoption in the manufacturing sector	Journal of Cleaner Production	2020	http://dx.doi.org/10.1016/j.jclepro.2020.123086

Miscellaneous	de Sousa Jabbour AB,Luiz JV,Luiz OR,Jabbour CJ,Ndubisi NO,de Oliveira JH,Junior FH	Circular economy business models and operations management	Journal of Cleaner Production	2019	http://dx.doi.org/10.1016/j.jclepro.2019.06.349
Journal Article	Kristoffersen E,Blomsma F,Mikalef P,Li J	The smart circular economy: A digital-enabled circular strategies framework for manufacturing companies	Journal of Business Research	2020	https://www.sciencedirect.com/science/article/pii/S0148296320304987;http://dx.doi.org/10.1016/j.jbusres.2020.07.044

Table 1: Literature Search

List of Interviewees

Name	Position	Company	Work experience in years	Additional notes	Duration in minutes
[redacted]	C-Level	Synctive	5	[redacted]	[redacted]
[redacted]	Consultant	INVERTO	4	[redacted]	[redacted]
[redacted]	C-Level	Telekom	30	[redacted]	[redacted]
[redacted]	Sales Manager	Bosch	15	[redacted]	[redacted]
[redacted]	Head of International Vendor Accounts Management	Siemens Financial Services	16	[redacted]	[redacted]
[redacted]	Senior Business Manager	Carl Zeiss Meditec	8	[redacted]	[redacted]
[redacted]	C-level	Made Global	11	[redacted]	[redacted]

[redacted]	Division Manager Big Data Advanced Analytics	Commerzbank	22	[redacted]	[redacted]
[redacted]	Chapter Lead	Ernst & Young	8	[redacted]	[redacted]
[redacted]	Assistant to the Chief Service Officer	GEA Group	4	[redacted]	[redacted]
[redacted]	Project Leader	Boston Consulting Group	13	[redacted]	[redacted]
[redacted]	Professor	Munich University of Applied Sciences	18	[redacted]	[redacted]
[redacted]	C-Level	Service Lobby	16	[redacted]	[redacted]
[redacted]	Senior Project Manager	INVERTO	6	[redacted]	[redacted]
[redacted]	Rental Sepcialist	Jungheinrich	6	[redacted]	[redacted]
[redacted]	Head of Production	Daimler Truck	28	[redacted]	[redacted]
[redacted]	Project Leader	Boston Consulting Group	6	[redacted]	[redacted]
[redacted]	Partner	Roland Berger	11	[redacted]	[redacted]
[redacted]	Manager Manufacturing	John Deere	22	[redacted]	[redacted]
[redacted]	Senior Manager	Monitor Deloitte	10	[redacted]	[redacted]
[redacted]	C-Level	relayr	22	[redacted]	[redacted]

[redacted]	Head of Consulting	Siemens Healthineers	10	[redacted]
[redacted]	Principal	Roland Berger	8	[redacted]
[redacted]	Head of Advanced Procurement	Marquardt Group	18	[redacted]
[redacted]	Head of Data Intelligence	Heidelberger Druckmaschinen	16	[redacted]
[redacted]	Digital Sales & Business Process Management	SEW-Eurodrive	14	[redacted]
[redacted]	Financing Solution Partner	Siemens Financial Services	34	[redacted]
[redacted]	Trend & Innovation Manager	Deutsche Leasing	12	[redacted]
[redacted]	Product Manager	Vogelsang	11	[redacted]
[redacted]	Partner	Oliver Wyman	30	[redacted]

Table 2: List of Interviewees

Marketing Drivers	Prevalence	Percent	Percent (valid)
Entry offer for trying out new technologies	9	30.00	52.94
Customer retention	7	23.33	41.18
Increased customer-centricity	4	13.33	23.53
Opportunity to make machine acquisitions affordable	3	10.00	17.65
Brand awareness & reputation	3	10.00	17.65
Decline in machine sales	2	6.67	11.76
Additional growth	2	6.67	11.76
Relevant customer segments are lacking creditworthiness	1	3.33	5.88
Documents with code(s)	17	56.67	100.00
Documents without code(s)	13	43.33	-
Analyzed documents	30	100.00	-

Table 3: Firm-level Drivers Provider Perspective - Marketing

Financial Drivers	Prevalence	Percent	Percent (valid)
Recurring revenues	9	30.00	56.25
Shift from CapEx to OpEx	6	20.00	37.50
Accounting: balance sheet relief	3	10.00	18.75
Higher evaluation	3	10.00	18.75
Upselling potential	3	10.00	18.75
Larger share of wallet	2	6.67	12.50
Plannable turnover	1	3.33	6.25
Documents with code(s)	16	53.33	100.00
Documents without code(s)	14	46.67	-
Analyzed documents	30	100.00	-

Table 4: Firm-level Drivers Provider Perspective - Financial

Strategic Drivers	Prevalence	Percent	Percent (valid)
Securing competitive position	6	20.00	50.00
Differentiation from the competition	5	16.67	41.67
Bind customer to long-term contract	5	16.67	41.67
Defend market share against external EaaS providers	4	13.33	33.33
Upselling	4	13.33	33.33
Achieve targets in saturated markets	4	13.33	33.33
First mover advantage	2	6.67	16.67
Selling entire machine portfolio	2	6.67	16.67
Know-how generation on product development	1	3.33	8.33
Documents with code(s)	12	40.00	100.00
Documents without code(s)	18	60.00	-
Analyzed documents	30	100.00	-

Table 5: Firm-level Drivers Provider Perspective - Strategic

Operational Drivers	Prevalence	Percent	Percent (valid)
Data accessibility, AI & Predictive Maintenance	4	13.33	66.67
Efficiency increase	3	10.00	50.00
Documents with code(s)	6	20.00	100.00
Documents without code(s)	24	80.00	-
Analyzed documents	30	100.00	-

Table 6: Firm-level Drivers Provider Perspective - Operational

Organizational Drivers	Prevalence	Percent	Percent (valid)
Direct sales Involvement from the start	3	10.00	50.00
Creating a customer success role	3	10.00	50.00
Top management push & support	2	6.67	33.33
Superior legal capabilities	1	3.33	16.67
Documents with code(s)	6	20.00	100.00
Documents without code(s)	24	80.00	-
Analyzed documents	30	100.00	-

Table 7: Firm-level Drivers Provider Perspective - Organizational

Operational Inhibitors	Prevalence	Percent	Percent (valid)
Lack of experience with servitization models	10	33.33	45.45
Data Security concerns & lack of access to customer data	9	30.00	40.91
Difficulty of implementing a new sales approach	7	23.33	31.82
Shortage of skilled workers in own production	5	16.67	22.73
Not possible to ensure sufficient utilization of equipment on customer side	3	10.00	13.64
Sufficient digital infrastructure to operate machines	2	6.67	9.09
EaaS compliant machinery design	2	6.67	9.09
Difficult implementation due to highly customized machines	2	6.67	9.09
Difficulty processing in ERP system	2	6.67	9.09
Documents with code(s)	22	73.33	100.00
Documents without code(s)	8	26.67	-
Analyzed documents	30	100.00	-

Table 8: Firm-level Inhibitors Provider Perspective - Operational

Strategic Inhibitors	Prevalence	Percent	Percent (valid)
Lack of long term strategy / vision	8	26.67	47.06
Reservations against complete risk assumption	6	20.00	35.29
Reservations against changing the business model	5	16.67	29.41
Length of sales cycle	4	13.33	23.53
Lack of relevant involvement in customer's production processes	3	10.00	17.65
Missing customer fit	1	3.33	5.88
Lack of portfolio breadth to meet tender criteria	1	3.33	5.88
Lack of digitalization among SMEs	1	3.33	5.88
Documents with code(s)	17	56.67	100.00
Documents without code(s)	13	43.33	-
Analyzed documents	30	100.00	-

Table 9: Firm-level Inhibitors Provider Perspective - Strategic

Financial Inhibitors	Prevalence	Percent	Percent (valid)
Reservations against advanced/ own financing	9	30.00	56.25
Assess profitability of service model	6	20.00	37.50
Accounting hurdles (e.g.; IFRS 15)	5	16.67	31.25
Liquidity issues due to increased cost base	4	13.33	25.00
Fear of cannibalization	2	6.67	12.50
Balance sheet extension	2	6.67	12.50
Documents with code(s)	16	53.33	100
Documents without code(s)	14	46.67	-
Analyzed documents	30	100.00	-

Table 10: Firm-level Inhibitors Provider Perspective - Financial

Organizational Inhibitors	Prevalence	Percent	Percent (valid)
Requirement of deep Organizational Change	10	33.33	76.92
Conservative Manner towards change	9	30.00	69.23
Lack of general understanding and experience	6	20.00	46.15
Not attractive for CFOs in the beginning due to revenue dent	1	3.33	7.69
Lower receptiveness for financial metrics among small companies	1	3.33	7.69
Lower receptiveness for financial metrics in family businesses	1	3.33	7.69
Documents with code(s)	13	43.33	100.00
Documents without code(s)	17	56.67	-
Analyzed documents	30	100.00	-

Table 11: Firm-level Inhibitors Provider Perspective - Organizational

Marketing Inhibitors	Prevalence	Percent	Percent (valid)
Difficulty to market EaaS with higher prices than traditional models due to services	6	20.00	66.67
Uncertainty of customers	5	16.67	55.56
Pricing design	4	13.33	44.44
Contractual design	2	6.67	22.22
Too few marketing activities promoting EaaS	1	3.33	11.11
Documents with code(s)	9	30.00	100.00
Documents without code(s)	21	70.00	-
Analyzed documents	30	100.00	-

Table 12: Firm-level Inhibitors Provider Perspective - Marketing

Impact of COVID-19 on Drivers	Prevalence	Percent	Percent (valid)
Positive impact on drivers	17	56.67	80.95
No impact at all on drivers	4	13.33	19.05
Indifferent about impact on drivers	3	10.00	14.29
Documents with code(s)	21	70.00	100.00
Documents without code(s)	9	30.00	-
Analyzed documents	30	100.00	-

Table 13: Impact of COVID-19 on Drivers of EaaS Adoption - Provider Perspective

Drivers Promoting EaaS Adoption Noted by COVID-19	Prevalence	Percent	Percent (valid)
De-risking of supply chains through nearshoring	10	33.33	76.92
Boost in Digitalization & promotion of remote machine operation	6	20.00	46.15
Open-mindedness towards novelties	5	16.67	38.46
Rising uncertainty reduce willingness of high CapEx invest	4	13.33	30.77
Documents with code(s)	13	43.33	100.00
Documents without code(s)	17	56.67	-
Analyzed documents	30	100.00	-

Table 14: Drivers Promoting EaaS Adoption Noted by COVID-19 - Provider Perspective

Impact of COVID-19 on Adoption of EaaS	Prevalence	Percent	Percent (valid)
Rising adoption EaaS	10	33.33	100.00
Documents with code(s)	10	33.33	100.00
Documents without code(s)	20	66.67	-
Analyzed documents	30	100.00	-

Table 15: Impact of COVID-19 on Adoption of EaaS - Provider Perspective

Impact of Ukraine War on Drivers	Prevalence	Percent	Percent (valid)
Positive impact on drivers	10	33.33	66.67
Indifferent about impact	5	16.67	33.33
No impact at all	2	6.67	13.33
Documents with code(s)	15	50.00	100.00
Documents without code(s)	15	50.00	-
Analyzed documents	30	100.00	-

Table 16: Impact of Ukraine War on Drivers of EaaS adoption - Provider Perspective

Impact of Ukraine War on Adoption of EaaS	Prevalence	Percent	Percent (valid)
Demand increase	3	10.00	100.00
Documents with code(s)	3	10.00	100.00
Documents without code(s)	27	90.00	-
Analyzed documents	30	100.00	-

Table 17: Impact of Ukraine War on Adoption of EaaS - Provider Perspective

Drivers Promoting EaaS Adoption Noted by Ukraine War	Prevalence	Percent	Percent (valid)
De-risking of supply chains through nearshoring	4	13.33	50.00
Financial pressure (need to stabilize revenues. reduce CapEx	3	10.00	37.50
Increased importance of aftermarkets	2	6.67	25.00
Drove Inflation and prices	2	6.67	25.00
Documents with code(s)	8	26.67	100.00
Documents without code(s)	22	73.33	-
Analyzed documents	30	100.00	-

Table 18: Drivers Promoting EaaS Adoption Noted by Ukraine War - Provider Perspective

Impact of COVID-19 on Inhibitors of EaaS Adoption	Prevalence	Percent	Percent (valid)
Negative Impact on EaaS adoption	11	36.67	78.57
Indifferent about impact	6	20.00	42.86
Documents with code(s)	14	46.67	100.00
Documents without code(s)	16	53.33	-
Analyzed documents	30	100.00	-

Table 19: Impact of COVID-19 on Inhibitors of EaaS Adoption - Provider Perspective

Inhibitors Hindering EaaS Adoption Noted by COVID-19	Prevalence	Percent	Percent (valid)
Survival mode. companies not able to focus on business model innovation	8	26.67	72.73
Uncertain market development due to COVID-19 and Ukraine war	3	10.00	27.27
Documents with code(s)	11	36.67	100.00
Documents without code(s)	19	63.33	-
Analyzed documents	30	100.00	-

Table 20: Inhibitors of EaaS Adoption Noted by COVID-19 - Provider Perspective

Impact of Ukraine War on Inhibitors of EaaS Adoption	Prevalence	Percentage	Percentage (valid)
Negative Impact on EaaS adoption	8	26.67	72.73
Indifferent about impact	4	13.33	36.36
Documents with code(s)	11	36.67	100.00
Documents without code(s)	19	63.33	-
Analyzed documents	30	100.00	-

Table 21: Impact of Ukraine War on Inhibitors of EaaS Adoption - Provider Perspective

Inhibitors Hindering EaaS Adoption Noted by Ukraine War	Prevalence	Percentage	Percentage (valid)
Companies are stuck in crisis mode	5	16.67	62.5
Increased costs e.g. energy. production etc.	4	13.33	50.00
Deglobalization	3	10.00	37.5
Customer resistance to share data	1	3.33	12.50
Documents with code(s)	8	26.67	100.00
Documents without code(s)	22	73.33	-
Analyzed documents	30	100.00	-

Table 22: Inhibitors of EaaS Adoption Noted by Ukraine War - Provider Perspective

Financial Drivers	Prevalence	Percent	Percent (valid)
Increased flexibility due to CapEx to OpEx shift	19	63.33	76.00
Shift risk to provider	9	30.00	36.00
Increased planning security	7	23.33	28.00
Liquidity issues	7	23.33	28.00
Balance sheet optimization	7	23.33	28.00
Margin improvement	5	16.67	20.00
Documents with code(s)	25	83.33	100.00
Documents without code(s)	5	16.67	-
Analyzed documents	30	100.00	-

Table 23: Firm-level Drivers Customer Perspective - Financial

Strategic Drivers	Prevalence	Percent	Percent (valid)
Getting state of the art equipment ahead of competition	7	23.33	53.85
Refocus on core business	5	16.67	38.46
Shifting risk towards provider	4	13.33	30.77
Faster time-to-market	3	10.00	23.08
Better market understanding & prices through tenders	3	10.00	23.08
Flexibility to adjust output volume	2	6.67	15.38
Competitive advantage due to lower capital costs	2	6.67	15.38
Differentiation	1	3.33	7.69
Documents with code(s)	13	43.33	100.00
Documents without code(s)	17	56.67	-
Analyzed documents	30	100.00	-

Table 24: Firm-level Drivers Customer Perspective - Strategic

Operational Drivers	Prevalence	Percent	Percent (valid)
Covering service and maintenance of ever more complex machines	11	36.67	61.11
Increased process efficiency with state of the art products	9	30.00	50.00
Potential efficiency gains through improved utilization	7	23.33	38.89
Easier access to new machines	5	16.67	27.78
Increased production flexibility	3	10.00	16.67
Secure uptime and availability	2	6.67	11.11
Documents with code(s)	18	60.00	100.00
Documents without code(s)	12	40.00	-
Analyzed documents	30	100.00	-

Table 25: Firm-level Drivers Customer Perspective - Operational

EaaS Customer Demand	Prevalence	Percent	Percent (valid)
High demand	11	36.67	55.00
Low demand	8	26.67	40.00
Moderate demand	3	10.00	15.00
Indifferent	2	6.67	10.00
Documents with code(s)	20	66.67	100.00
Documents without code(s)	10	33.33	-
Analyzed documents	30	100.00	-

Table 26: EaaS Customer Demand

Financial Inhibitors	Prevalence	Percent	Percent (valid)
High price-level of EaaS	7	23.33	70.00
Difficulty to assess overall price	7	23.33	70.00
Preference for CapEx	4	13.33	40.00
Consistent financial constraints	1	3.33	10.00
Documents with code(s)	10	33.33	100.00
Documents without code(s)	20	66.67	-
Analyzed documents	30	100.00	-

Table 27: Firm-level Inhibitors Customer Perspective - Financial

Operational Inhibitors	Prevalence	Percent	Percent (valid)
Data security considerations	8	26.67	61.54
Fear of dependency	3	10.00	23.08
Lack of understanding	3	10.00	23.08
Fear of giving up core competencies	2	6.67	15.38
COVID-19 stressed global value chains	2	6.67	15.38
Lack of digitalization among SMEs	2	6.67	15.38
Fear of potential disruptions	1	3.33	7.69
Length of sales cycle	1	3.33	7.69
No time for strategic topics due to survival	1	3.33	7.69
Fear of unreasonable maintenance amount	1	3.33	7.69
Topic with less priority	1	3.33	7.69
Doubts regarding a fair pricing	1	3.33	7.69
Documents with code(s)	13	43.33	100.00
Documents without code(s)	17	56.67	-
Analyzed documents	30	100.00	-

Table 28: Firm-level Inhibitors Customer Perspective - Operational

Organizational Inhibitors	Prevalence	Percent	Percent (valid)
Limited legal capabilities to evaluate contracts	6	20.00	60.00
Preference for equipment ownership deeply rooted in operations	4	13.33	40.00
Resistance towards change in general	4	13.33	40.00
Change in control models	3	10.00	30.00
Perceived loss of control over operations	3	10.00	30.00
Lack of understanding about EaaS	2	6.67	20.00
Documents with code(s)	10	33.33	100.00
Documents without code(s)	20	66.67	-
Analyzed documents	30	100.00	-

Table 29: Firm-level Inhibitors Customer Perspective - Organizational

Impact of COVID-19 on Drivers of EaaS Adoption	Prevalence	Percent	Percent (valid)
De-risking of supply chains through nearshoring	7	22.58	30.43
General risk avoidance	6	19.35	26.09
Lack of CapEx	6	19.35	26.09
Indifferent about impact	5	16.13	21.74
Open-mindedness towards novelties	5	16.13	21.74
Inflation	4	12.90	17.39
Rising energy costs	3	9.68	13.04
Rising adoption of EaaS	3	9.68	13.04
Lack of skilled workforce	3	9.68	13.04
No Influence	2	6.45	8.70
Benefit expectancy	2	6.45	8.70
No impact at all	2	6.45	8.70
Pressure on health system	2	6.45	8.70
Willingness to invest	1	3.23	4.35
Secure equipment uptime	1	3.23	4.35
Rising interest rates	1	3.23	4.35
Efficiency gains	1	3.23	4.35
Improve overall equipment effectiveness	1	3.23	4.35
Faster time-to-market	1	3.23	4.35
Access to advanced technology	1	3.23	4.35
Documents with code(s)	23	74,19	100,00
Documents without Code(s)	8	25,81	-
Analyzed documents	31	100,00	-

Table 30: Impact of COVID-19 on Drivers of EaaS Adoption - Customer Perspective

Impact of Ukraine War on Drivers of EaaS Adoption	Prevalence	Percent	Percent (valid)
Indifferent about impact	8	25.81	38.10
Rising energy costs	6	19.35	28.57
Reduced willingness to invest	6	19.35	28.57
General risk avoidance	5	16.13	23.81
Desire to transfer risk due to uncertainty	5	16.13	23.81
De-risking of supply chains through nearshoring	4	12.90	19.05
Avoidance of high investment costs	4	12.90	19.05
Inflation	3	9.68	14.29
Flexibility in adjusting equipment/machine portfolio	2	6.45	9.52
Improve of overall equipment effectiveness	2	6.45	9.52
Easier to access advanced technology	1	3.23	4.76
Faster-time-to market increased	1	3.23	4.76
Future benefit expectancy increased	1	3.23	4.76
Rising interest rates	1	3.23	4.76
Willingness to invest increased	1	3.23	4.76
Impact only on certain industries	1	3.23	4.76
No Influence	1	3.23	4.76
No impact at all	1	3.23	4.76
Efficiency Gains	1	3.23	4.76
Industry-specific growth	1	3.23	4.76
Documents with code(s)	21	67.74	100.00
Documents without code(s)	10	32.26	-
Analyzed documents	31	100.00	-

Table 31: Impact of Ukraine War on Drivers of EaaS Adoption - Customer Perspective

Impact of COVID-19 on Inhibitors of EaaS Adoption	Prevalence	Percent	Percent (valid)
Indifferent about impact	5	16.67	33.33
COVID disclosed vulnerability of supply chains	4	13.33	26.67
COVID favored EaaS attractiveness as a business model	3	10.00	20.00
EaaS efforts were scaled back	3	10.00	20.00
COVID encouraged trade-offs between outsourcing and insourcing	2	6.67	13.33
Focus on smaller steps towards a EaaS offering	2	6.67	13.33
EaaS leads to higher life cycle costs in the long term	2	6.67	13.33
No impact at all	2	6.67	13.33
More restrictive financing capabilities	2	6.67	13.33
Rethinking own service offering	2	6.67	13.33
Increased lack of understanding about EaaS	1	3.33	6.67
COVID has favored digitalization and remote issues	1	3.33	6.67
Focus on operational safeguarding of the core business	1	3.33	6.67
Declined resistance towards change in general	1	3.33	6.67
Increased preference for equipment ownership	1	3.33	6.67
Change in usage behavior and predictability of companies	1	3.33	6.67
Documents with code(s)	15	50.00	100.00
Documents without code(s)	15	50.00	-
Analyzed documents	30	100.00	-

Table 32: Impact of COVID-19 on Inhibitors of EaaS Adoption - Customer Perspective

Impact of Ukraine war on adoption challenges	Prevalence	Percent	Percent (valid)
Indifferent about impact	7	23.33	50.00
No impact at all	3	10.00	21.43
Price of EaaS solutions is increasingly perceived as too high	3	10.00	21.43
Increased resistance towards change in general	3	10.00	21.43
Increased lack of understanding about EaaS	3	10.00	21.43
EaaS leads to higher life cycle costs in the long term	3	10.00	21.43
Companies are stuck in crisis mode	2	6.67	14.29
Increased energy costs	2	6.67	14.29
Increased fear over lost of control over operations	2	6.67	14.29
Increased preference for equipment ownership in operations	2	6.67	14.29
Increased preference for CapEx	1	3.33	7.14
Focus on operational safeguarding of the core business	1	3.33	7.14
Documents with code(s)	14	46.67	100.00
Documents without code(s)	16	53.33	-
Analyzed documents	30	100.00	-

Table 33: Impact of Ukraine War on Inhibitors of EaaS Adoption - Customer Perspective

Critical Success Factors of EaaS Implementation	Prevalence	Percent	Percent (valid)
Early stage team involvement	9	30.00	50.00
Data accessibility	7	23.33	38.89
Organizational structure	5	16.67	27.78
Trust among parties	4	13.33	22.22
Digital readiness	3	10.00	16.67
Documents with code(s)	18	60.00	100.00
Documents without code(s)	12	40.00	-
Analyzed documents	30	100.00	-

Table 34: Critical Success Factors of EaaS Implementation

Impact of COVID-19 or Ukraine War on EaaS Implementation	Prevalence	Percent	Percent (valid)
Understanding the customer issue	3	10.00	33.33
Focus on safeguarding core business	2	6.67	22.22
Budgets allocations being trimmed	2	6.67	22.22
Implementation projects came to a stop	1	3.33	11.11
No impact at all	1	3.33	11.11
COVID-19 made renting models more attractive	1	3.33	11.11
Documents with code(s)	9	30.00	100.00
Documents without code(s)	21	70.00	-
Analyzed documents	30	100.00	-

Table 35: Impact of COVID-19 or Ukraine War on EaaS Implementation

Implementation Hurdles	Prevalence	Percent	Percent (valid)
Lack of customer orientation	8	26.67	53.33
Legacy systems	8	26.67	53.33
High change management effort	7	23.33	46.67
Lack of personnel	6	20.00	40.00
Financing	4	13.33	26.67
Lack of MVP approach	3	10.00	20.00
Documents with code(s)	15	50.00	100.00
Documents without code(s)	15	50.00	-
Analyzed documents	30	100.00	-

Table 36: Implementation Hurdles

Importance Level of Servitization Degree	Prevalence	Percent	Percent (valid)
High servitization level lowers implementation effort	5	16.67	62.50
High servitization level causes cannibalization effects	1	3.33	12.50
High servitization level can be beneficial and harmful	1	3.33	12.50
High servitization level increases implementation effort	1	3.33	12.50
Documents with code(s)	8	26.67	100.00
Documents without code(s)	22	73.33	-
Analyzed documents	30	100.00	-

Table 37: Importance Level of Servitization Degree

Importance Level of Digitalization Degree	Prevalence	Percent	Percent (valid)
High digitization level lowers implementation effort	12	40.00	92.31
Level of digitalization has no impact	1	3.33	7.69
High digitization level might harm implementation	1	3.33	7.69
Documents with code(s)	13	43.33	100.00
Documents without code(s)	17	56.67	-
Analyzed documents	30	100.00	-

Table 38: Importance Level of Digitalization Degree

Measures to Promote EaaS Implementation	Prevalence	Percent	Percent (valid)
Design EaaS models together with relevant customers	3	10.00	30.00
Get rid of German way of thinking	2	6.67	20.00
Promote EaaS more actively	2	6.67	20.00
Use EaaS as tool to create room in CapEx or OpEx	2	6.67	20.00
Set attractive commercial conditions	2	6.67	20.00
Address customers with value-based pricing	2	6.67	20.00
Build a network to ensure utilization	1	3.33	10.00
Providers have to make upfront investments	1	3.33	10.00
Providers must tackle data security concerns	1	3.33	10.00
Gather references with relevant industry players	1	3.33	10.00
Organizational Set-Up of service organization	1	3.33	10.00
Involve subsidies from German digital pact	1	3.33	10.00
Documents with code(s)	10	33.33	100.00
Documents without code(s)	20	66.67	-
Analyzed documents	30	100.00	-

Table 39: Measures to Promote EaaS Implementation

Measures to Reduce Implementation Risks	Prevalence	Percent	Percent (valid)
Understanding the whole value creation chain	5	16.67	38.46
Starting with small projects	5	16.67	38.46
Risk sharing with financing partner	5	16.67	38.46
Define specific customer groups and use cases	2	6.67	15.38
Awareness for change effort	2	6.67	15.38
Openness for interface access	1	3.33	7.69
Industry standard for data	1	3.33	7.69
Documents with code(s)	13	43.33	100.00
Documents without code(s)	17	56.67	-
Analyzed documents	30	100.00	-

Table 40: Measures to Reduce Implementation Risks

The Need to Build a Business Case	Prevalence	Percent	Percent (valid)
Need to build a business case	7	23.33	100.00
Documents with code(s)	7	23.33	100.00
Documents without code(s)	23	76.67	-
Analyzed documents	30	100.00	-

Table 41: The Need to Build a Business Case

Practical Examples of Successful EaaS Implementation	Prevalence	Percent	Percent (valid)
Trumpf	10	33.33	55.56
Hilti	6	20.00	33.33
Heidelberger Druck	6	20.00	33.33
DMG Mori	5	16.67	27.78
Rolls-Royce	5	16.67	27.78
Siemens Healthineers	3	10.00	16.67
Kärcher	3	10.00	16.67
Käser	3	10.00	16.67
Jungheinrich	2	6.67	11.11
Bosch	2	6.67	11.11
FlexFactory	2	6.67	11.11
Siemens	1	3.33	5.56
John Deere	1	3.33	5.56
GEA	1	3.33	5.56
Lack of references	1	3.33	5.56
Toyota	1	3.33	5.56
Claas	1	3.33	5.56
Liebherr	1	3.33	5.56
Swiss company doing Tooling-as-a-Service	1	3.33	5.56
247TailorSteel	1	3.33	5.56
Hörbiger	1	3.33	5.56
Tesla	1	3.33	5.56
Mercedes Benz	1	3.33	5.56
BMW	1	3.33	5.56
Eaton	1	3.33	5.56
Schneider Electric	1	3.33	5.56
Documents with code(s)	18	60.00	100.00
Documents without code(s)	12	40.00	-
Analyzed documents	30	100.00	-

Table 42: Practical Examples of Successful EaaS Implementation

Use of MVP Approach	Prevalence	Percent	Percent (valid)
Crucial for implementation success	13	43.33	86.67
Not important at all	1	3.33	6.67
Only useful for technical assessment	1	3.33	6.67
Unreasonable administration for a single machine	1	3.33	6.67
Documents with code(s)	15	50.00	100.00
Documents without code(s)	15	50.00	-
Analyzed documents	30	100.00	-

Table 43: Use of MVP Approach

Requirements of Providers	Prevalence	Percent	Percent (valid)
Strong capital base to pre-finance machines	9.00	30.00	47.37
Selling machines also suited for a secondary market	9.00	30.00	47.37
Accessability of customer data	6.00	20.00	31.58
Ability to conceal prices from competition	3.00	10.00	15.79
Capability of selling entire machine portfolio	2.00	6.67	10.53
First mover advantage	2.00	6.67	10.53
Relevance in the customers value creation systems	1.00	3.33	5.26
Documents with code(s)	19.00	63.33	100.00
Documents without code(s)	11.00	36.67	-
Analyzed documents	30.00	100.00	-

Table 44: Provider Personas - Requirements of Providers

Providers Company Size	Prevalence	Percent	Percent (valid)
Larger companies	8.00	26.67	66.67
SMEs	4.00	13.33	33.33
Documents with code(s)	12.00	40.00	100.00
Documents without code(s)	18.00	60.00	-
Analyzed documents	30.00	100.00	-

Table 45: Provider Personas - Company Size

Provider Industries	Prevalence	Percent	Percent (valid)
Medtech & Healthcare industry	12	40.00	50.00
Automotive industry	8	26.67	33.33
Printing	5	16.67	20.83
Logistics industry	4	13.33	16.67
Energy generation	4	13.33	16.67
No specific industry	4	13.33	16.67
CNC milling	4	13.33	16.67
Construction industry	4	13.33	16.67
Laser feeding systems	3	10.00	12.50
Steel & Metall processing industry	3	10.00	12.50
Chemical industry	3	10.00	12.50
Agricultural industry	3	10.00	12.50
Office equipment & hardware (e.g.. printers. computers etc)	2	6.67	8.33
Elevator industry	2	6.67	8.33
Motor construction industry	2	6.67	8.33
Machine tool manufacturing	2	6.67	8.33
Aviation industry	2	6.67	8.33
Factory-as-a-Service	2	6.67	8.33
Paper processing	1	3.33	4.17
Food and beverage industry	1	3.33	4.17
Gastronomy machines industry	1	3.33	4.17
Mining industry	1	3.33	4.17
Valve industry	1	3.33	4.17
Measurement technology	1	3.33	4.17
Utilities	1	3.33	4.17
Food processing	1	3.33	4.17
Documents with code(s)	24	80.00	100.00
Documents without code(s)	6	20.00	-
Analyzed documents	30	100.00	-

Table 46: Provider Personas - Industries for EaaS

Machine Characteristics for Providers	Prevalence	Percent	Percent (valid)
High degree of standardization	19	63.33	79.17
High degree of mobility	10	33.33	41.67
Existing connectivity	8	26.67	33.33
Low degree of complexity	8	26.67	33.33
High price or volume	8	26.67	33.33
High flexibility	5	16.67	20.83
Highly frequented machine	4	13.33	16.67
High degree of complexity	3	10.00	12.50
High degree of data standardization	3	10.00	12.50
High degree of maintenance standardization	3	10.00	12.50
Large sized machines	3	10.00	12.50
Small sized machines	2	6.67	8.33
Already remotely maintainable	2	6.67	8.33
Computer-aided	2	6.67	8.33
Low mechanical complexity	1	3.33	4.17
Long service life	1	3.33	4.17
Geographically hard to reach	1	3.33	4.17
Medium sized machines	1	3.33	4.17
Low degree of mobility	1	3.33	4.17
Documents with code(s)	24	80.00	100.00
Documents without code(s)	6	20.00	-
Analyzed documents	30	100.00	-

Table 47: Provider Personas - Machinery Characteristics

Promising Machines for EaaS	Frequency	Percentage	Percentage (valid)
Larg Medical devices MRI. CT. X-ray Machines etc	6	20.00	31.58
3D printers	3	10.00	15.79
CNC milling machines	3	10.00	15.79
Construction tools	3	10.00	15.79
Large Devices for Hospital Pharmacies	3	10.00	15.79
Packaging machines	2	6.67	10.53
Printing machines	2	6.67	10.53
Paper machines	2	6.67	10.53
High-end machines	2	6.67	10.53
Plastic recycling	1	3.33	5.26
Honing machines	1	3.33	5.26
Lapping machines	1	3.33	5.26
Grinding machines	1	3.33	5.26
Lathes machines	1	3.33	5.26
Industrial coffee machines	1	3.33	5.26
CNC machines	1	3.33	5.26
No specific machines	1	3.33	5.26
Agricultural machines	1	3.33	5.26
Documents with code(s)	19	63.33	100.00
Documents without code(s)	11	36.67	-
Analyzed documents	30	100.00	-

Table 48: Provider Personas - Promising Machines for EaaS

Financial Characteristics of EaaS Adoption	Prevalence	Percent	Percent (valid)
High machinery acquisition costs	6	20.00	60.00
Liquidity shortage	3	10.00	30.00
High downtime costs	2	6.67	20.00
Lacking financial resources	1	3.33	10.00
Financial KPI-driven (CapEx to OpEx) background	1	3.33	10.00
Documents with code(s)	10	33.33	100.00
Documents without code(s)	20	66.67	-
Analyzed documents	30	100.00	-

Table 49: Customer Personas - Financial Characteristics of EaaS Adoption

Strategic Characteristics of EaaS Adoption	Prevalence	Percent	Percent (valid)
SMEs that can't afford risk	3	10.00	30.00
Faster innovation cycles require more frequent purchases	3	10.00	30.00
Efficiency driven customers	2	6.67	20.00
Companies with high uncertainties	2	6.67	20.00
Documents with code(s)	10	33.33	100.00
Documents without code(s)	20	66.67	-
Analyzed documents	30	100.00	-

Table 50: Customer Personas - Strategic Characteristics of EaaS Adoption

Operational Characteristics of EaaS Adoption	Prevalence	Percent	Percent (valid)
Equipment has to be process-critical	4	13.33	44.44
In-house operation and maintenance has cost disadvantage	3	10.00	33.33
Companies with low utilization	3	10.00	33.33
Equipment is not used to its full capacity	2	6.67	22.22
Majority of legacy machines	1	3.33	11.11
As much variability as possible	1	3.33	11.11
SMEs are lacking own maintenance teams	1	3.33	11.11
Seek to save logistics route to contract packers and back	1	3.33	11.11
Documents with code(s)	9	30.00	100.00
Documents without code(s)	21	70.00	-
Analyzed documents	30	100.00	-

Table 51: Customer Personas - Operational Characteristics of EaaS Adoption

Sales & Marketing Characteristics of EaaS Adoption	Prevalence	Percent	Percent (valid)
Existing business relationship	3	10.00	42.86
Companies with seasonal peaks that they want to cover	3	10.00	42.86
Existing maintenance and service contracts	3	10.00	42.86
Lacking critical scales	1	3.33	14.29
Documents with code(s)	7	23.33	100.00
Documents without code(s)	23	76.67	-
Analyzed documents	30	100.00	-

Table 52: Customer Personas - Sales & Marketing Characteristics of EaaS Adoption

Company Size Characteristics of EaaS Adoption	Prevalence	Percent	Percent (valid)
Small and medium- sized enterprises	8	26.67	88.89
Larger enterprises	3	10.00	33.33
Documents with code(s)	11	36.67	100.00
Documents without code(s)	19	63.33	-
Analyzed documents	30	100.00	-

Table 53: Customer Personas - Company Size Characteristics of EaaS Adoption

Industry Characteristics of EaaS Adoption	Prevalence	Percent	Percent (valid)
Healthcare sector	7	23,33	35,00
Agricultural sector	4	13,33	20,00
Mechanical engineering sector	3	10,00	15,00
Energy sector	2	6,67	10,00
Automotive Manufacturing Equipment	2	6,67	10,00
Facility cleaning sector	1	3,33	5,00
Retailers	1	3,33	5,00
Construction sector	1	3,33	5,00
Mining sector	1	3,33	5,00
Industrial Machinery	1	3,33	5,00
Environmental and Waste Management Equipment	1	3,33	5,00
Plastic and Rubber Processing Machinery	1	3,33	5,00
Cross-industry	1	3,33	5,00
Private Equity	1	3,33	5,00
Documents with code(s)	20	66,67	100,00
Documents without Code(s)	10	33,33	-
Analyzed documents	30	100,00	-

Table 54: Customer Personas - Industry Characteristics of EaaS Adoption

11.3 MAXQDA Code-Memos with Anchor Examples

Topic	Category	Subcategory	Example
Drivers of EaaS Adoption among Providers			
	Strategic		
		Defend market share against external EaaS providers	And so external players are gradually coming in, who might then take your market share.
		Securing competitive position	So what I said, you could also use it as a strategic driver in part, i.e. securing the position.
		Differentiation from the competition	And as I said, from the customer's point of view, from the provider's point of view, it is first and foremost a differentiation from the competition.
		Bind customer to longterm contract	So that can happen that you only have half-year contracts or the customer buys today from us, tomorrow from the other. Subscription keeps it fixed for five years. And that's a good way to increase the consumables business
		Upselling	I believe that the equipment under such partnerships tends to go beyond the quality that you actually need. So there is upselling potential.
		Selling entire machine portfolio	You usually replace an entire portfolio.
		Know-how generation on product development	Little feedback on the product, joint development, so also a bit of know-how generation.
	Financial		
		Accounting: balance sheet relief	Most companies look at it from the perspective of balance sheet relief
		Shift from CapEx to OpEx	If I don't have to give the full commitment of the Capex, but can somehow test drive more or less times.
		Higher evaluation	Okay, so that was one reason, the company is valued higher with Recurrent Revenue.
		recurring revenues	So it's the transactional sale of the machine or is it the quasi-recurring revenue that can be seen beforehand. And there it is classic to financially-driven companies, such as those who buy companies that are interested in setting up recurring revenue models.
		Upselling Potential	I believe that the equipment under such partnerships tends to go beyond the quality that you actually need. So there is upselling potential.
		Plannable turnover	Plannable turnover.
		Larger share of wallet	Larger share of wallet usually.
	Marketing		
		Decline in machine sales	You can't invest the way it was in the past. And you're more likely to enter into a service contract than to buy new equipment.
		Customer retention	So just try to keep other customer groups or customer groups better, so to speak, or increase the switching costs and so on.
		Additional growth	So from the vendor side, when I look at these categories now, I think this whole topic is already playing, additional growth or lock-in of customers, I would put that now under marketing drivers maybe is the main topic, I think.
		Increased customer-centricity	This means trust, customer intimacy are topics that are very important. Now you can also include topics around the whole topic, around customer experience, where you then think about what your customer really needs in a customer-centered way.
		Entry offer for trying out new technologies	Then you have such a barrier to entry. So according to the motto, I don't want to commit to it in the long term, because I don't know if it will work. So maybe as examples, the electric car, I don't even know if that's coming to Germany
		Opportunity to make machine acquisitions affordable	So then we're dealing with these increased acquisition costs. Here's the opportunity simply to make acquisitions affordable in the first place via EaaS.
		Relevant customer segments are lacking creditworthiness	Then there is also the customer perspective, that perhaps the customer segments for which this is relevant do not have creditworthiness.
		Brand awareness & reputation	Marketing for us for sure, a huge topic, because these partnerships can be marketed totally well.
	Operational		
		Data accessibility, AI & Predictive Maintenance	We use predictive service with this machine data, so all this digital infrastructure has to be in place so that we have a relatively good grip on the machine. Also the consumer wants the offer with these predictive services in his contract.
		Efficieny increase	It makes sense for us because we build machines that can deliver the high performance. But what we see in the market, is that the clients of our machines are not able or simply not using these high performance capabilities to the max.
	Organizational		

		Direct sales Involvement from the start	I really have to create service sales in my company and the company, they have to form a team
		Creating a customer success role	We have also built a Customer Success Manager that really every subscription customer has, a Customer Success Manager that takes care of them.
		Top management demand	I think the big driver was the board and the team that built it.
		Superior legal capabilities	Yes, these are contracts over hundreds of pages. There you also have, so you have a completely different level of professionalism from a legal department of the Siemens versus municipal hospital, they are totally at the mercy of others.
Impact of External Shocks on Drivers			
	Ukraine War		
		Negative Impact on EaaS Adoption	When it comes to energy costs, Ukraine is of course one of the main drivers.
		Customer resistance to share data	Customers are not willing to share operational data, somewhat increased.
		Deglobalization	And deglobalization, that I'm just not sure in some regions anymore. I would make that point five and six and that could really be a showstopper.
		Increased costs e.g. energy, production etc.	Yes, there are two ways to put it, but I think that one negative is the turnaround in interest rates.
		Companies are stuck in crisis mode	There it was simply about survival and not about, let's say, new fantasies.
		Indifferent about impact	Well, I don't think that added that much to it now. What it has done again, of course, in my view, has ushered in a time as far as monetary policy is concerned.
	COVID-19		
		Negative Impact on EaaS Adoption	It has definitely had a negative impact on the willingness to invest in general.
		Uncertain market development due to COVID-19 and Ukraine war	So the consequence was that the equipment as a service efforts were scaled back, but at least you say, ah, we still have homework to do.
		Survival mode, companies not able to focus on business modell	Corona pandemic dampened that significantly because suddenly completely different things became more important
		Indifferent about impact	They have changed the macroeconomic playing field, but as I said, not specifically Equipment as a Service topics.
Inhibitors of EaaS Adoption among Providers			
	Organizational		
		Behavioral	The younger, next generation, they are more open towards subscription models because they are used to it, but the old generation is not really like that and more sceptical.
		Lack of general understanding and experience	I think what is influenced negatively on both sides customer and also provider is just the understanding that you don't have a clear understanding.
		Not attractive for CFOs in the beginning due to revenue dent	That's why the financial point of view is a topic that most CFOs are not exactly enthusiastic about. Operationally, it's just super, super difficult. So one of the reasons why a lot of companies don't do this or have failed to do it is because it's the mother of all transformation.
		Lower receptiveness for financial metrics among small companies	That means the smaller the customer, the harder it is to score with financial metrics.
		Lower receptiveness for financial metrics in familiy businesses	So if you, we did a lot together with Trumpf and there you have a lot of such stores, so where the man is CEO, woman is CFO and then there are a few people who operate the machines, they have relatively little, how shall I say, preference for accounting.
		Requirement of deep Organizational Change	Equipment as a service is a team sport, which really demands a lot from the entire organization, and many people don't yet see the benefits of really pushing it accordingly.
	Operational		
		Sufficient digital infrastructure to operate machines	Since the connectivity is actually the suffering issue.

		EaaS compliant machinery design	But Germany still lives very much from an old legacy park. And the production machines there are over 20 years old. And that's the challenge at the moment.
		Not possible to ensure sufficient utilization of equipment on customer side	From the provider's point of view, I have very strong concerns that it will not be possible to ensure sufficient utilization of equipment to make the whole thing a functioning business.
		Difficult implementation due to highly customized machines	The problem is that in mechanical engineering, especially in special mechanical engineering, but also in other mechanical engineering, when I look at printing plants, for example, the machines are so expensive that they are always very individually adapted to the customer.
		Shortage of skilled workers in own production	One effect is the example of the shortage of skilled workers, which is becoming more and more acute.
		Difficulty of implementing a new sales approach	Now you have to know a thousand other things and explain even more. You also have to explain financially where the advantage or disadvantage is for the customer.
		Difficulty processing in ERP system	Invoicing must be automated.
		Data Security concerns & lack of access to customer data	There must also be a data return channel somehow. Many end customers find this difficult.
	Marketing		
		Too few marketing ativities promoting EaaS	Would we have to do more advertising, etc.? It is certainly a reason. On the other hand, we can't serve the whole world with subs. It doesn't fit every customer.
		Contractual design	I think the challenge is often in the pricing or in the contractual design, because it is a new concept for many companies, even contractually speaking, certain risks can simply be presented.
		Pricing design	EaaS can't be cheaper than CapEx.
		Difficulty to market EaaS with higher prices than traditional models due to services	I also think that if you honestly calculate what it has to cost to offer this, then it's just prohibitively expensive. Then most potential users will say, oh no, that's very expensive, then maybe I'll buy the machine after all, or maybe I won't buy it.
		Uncertainty of customers	Because, on the one hand, customers are very saturated with their existing business, do not fully understand the interrelationships and the importance of further development.
	Financial		
		Accounting hurdles (e.g.; IFRS 15)	So, from the customer's point of view, from the provider's point of view, of course, it should be very clear these financial accounting issues in several countries.
		Fear of cannibalization	He has to deal with how I cannibalize the product before.
		Balance sheet extension	And of course, there are financial considerations behind it, although these are usually from a purely financial point of view, from a CFO point of view, these are all problem issues, because it extends my balance sheet and so on.
		Liquidity issues due to increased cost base	And I need a partner who can get through the whole thing financially.
		Reservations against advanced/ own financing	It's always easier to plan if I somehow have costs and then a sales value that I get back right away.
	Strategic		
		Missing customer fit	You always have to have a measurable remuneration model for use.
		Lack of relevant involvement in customer's production processes	He usually wants to buy the stuff once and is happy with it and builds his empire the way he wants it. Therefore, as I mentioned at the beginning, the provider must be so deeply involved in the customer's perception and be anchored in its processes that it is seen by the customer as a natural extension of the business model and not as a hard-fought equipment-as-as-service initiative.
		Reservations against changing the business model	From my point of view, it's just a bit of fear to change your business model.
		Reservations against complete risk assumption	And what if the customer somehow goes broke, do I somehow get my money?
		Lack of portfolio breadth to meet tender criteria	In some things. So it's more about portfolio breadth. That might be interesting, because they know, for example, that when such an overall portfolio is put out to tender, they simply lack things and that they therefore cannot offer.
		Length of sales cycle	And for sales, it's completely different that you earn money over years.
		Lack of long term strategy / vision	Well, first of all, I think this has to have the strategy, where do I want to go in the long term? Otherwise I won't change such a model, yes.
		Lack of digitalization among SMEs	Yes, because German SMEs haven't really dealt with the topic of digitalization in detail yet.

Impact of External Shocks on Challenges			
	Ukraine War		
		Negative Impact on EaaS Adoption	When it comes to energy costs, Ukraine is of course one of the main drivers.
		Customer resistance to share data	Customers are not willing to share operational data, somewhat increased.
		Deglobalization	And deglobalization, that I'm just not sure in some regions anymore. I would make that point five and six and that could really be a showstopper.
		Increased costs e.g. energy, production etc.	Yes, there are two ways to put it, but I think that one negative is the turnaround in interest rates.
		Companies are stuck in crisis mode	There it was simply about survival and not about, let's say, new fantasies.
		Indifferent about impact	Well, I don't think that added that much to it now. What it has done again, of course, in my view, has ushered in a time as far as monetary policy is concerned.
	COVID-19		
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		Uncertain market development due to COVID-19 and Ukraine war	So the consequence was that the equipment as a service efforts were scaled back, but at least you say, ah, we still have homework to do.
		Survival mode, companies not able to focus on business modell	Corona pandemic dampened that significantly because suddenly completely different things became more important
		Indifferent about impact	They have changed the macroeconomic playing field, but as I said, not specifically Equipment as a Service topics.
Drivers of EaaS Adoption among Customers			
	Financial		
		Increased planning security for financing capital goods	"The basic idea of all these stories is that I get into a, let's say, predictable payment process, which preferably looks like I have the benefit immediately, for example the machine, the functionality, whatever, and then I pay."
		Balance sheet optimization	"(…) keep the balance sheet small and then of course I can present my return on invested capital nicely."
		Shift risk to provider	"But basically, if you have the opportunity to do that and of course then also give away something like load risk or other risks that go hand in hand with a view, I think that's always good for the customer and that's why it's still a driver, acceptance from my point of view on the micro level of customer sides."
		Margin improvement	"And maybe, if I don't get the machine utilization for my product, I can improve my margin if I only have to pay half of the equipment. That is certainly an issue for companies."
		Liquidity issues	"(…) a lot of hospital executives are busy with survival. Yes, so, yes, the result is liquidity crises. And you can hardly get away with strategic issues."
		Increased flexibility due to CapEx to OpEx shift	"It definitely makes a difference. The high-end machines from Trumpf cost twice as much at 300k upwards. You might consider leasing it, because it no longer has CapEx but OpEx."
	Operational		
		Covering service and maintenance of ever more complex machines	"From the customer's perspective, you don't usually have the top experts in your company for every machine or for every area of application."
		Increased process efficiency with state of the art products	"You will have better process efficiency with better equipment."
		Potential efficiency gains through improved utilization	"Because Equipment as a Service also leads to the bottom line that the utilization of a machine goes up. So you have machine tools at a start briefly addressed more with 20 percent utilization."
		Easier access to new machines	"You can start with equipment as a service to make sure that your production can make sense."
		Increased production flexibility	"So, we're seeing a lot of flexibility regarding things in the industry that were not considered so flexible in the past (…) So, I would like to extend this concept now to the yeah, let's say machine-as-a-service."

		Secure uptime and availability	"I want quasi the top service, where I have the security that if I call the provider, the phone rings max. 1 time and I receive support."
	Strategic		
		Getting state of the art equipment ahead of competition	"(…) because the biggest advantage for the customer of an EaaS model is that he has a machine that has a continuos improvement, that is always evolving with his needs and his possibilities."
		Refocus on core business	"And the third topic, which is partially the case, is of course the increasing focus on their own core business, also partly as a result of the fact that they cannot get skilled workers from non-core business processes."
		Shifting risk towards provider	"For the users, I think there are financial and operational reasons that are in the foreground, i.e. risk passing-on or minimizing financial risk."
		Faster time-to-market	"Faster time-to-market has a strong influence."
		Better market understanding & prices through tenders	
		Flexibility to adjust output volume	"You have the flexibility to quickly adjust your output volume."
		Competitive advantage due to lower capital costs	"In the market and competitive environment, I basically always have an advantage, because I don't have the high capital costs."
		Differentiation	"Strategic drivers I would say, also from the customer point of view, especially with providers rather well, but for providers also when it comes to differentiation and the transformation to a solution provider respectively."
Inhibitors of EaaS Adoption among Customers			
	Financial		
		High price-level of EaaS	"EaaS can't be cheaper than CapEx, there's no question about that. It is more expensive."
		Difficulty to assess overall price	"I also often see that the organizations are not in a position to evaluate it properly financially. Total cost of ownership over ten years."
		Preference for CapEx	"The preference for CapEx has a very strong influence."
		Consistent financial constraints	"(…) a lot of hospital executives are busy with survival. Yes, so, yes, the result is liquidity crises. And you can hardly get away with strategic issues."
	Organizational		
		Limited legal capabilities to evaluate contracts	"Yes, these are contracts over hundreds of pages. There you also have, so you have a completely different level of professionalism from a legal department of the Siemens versus municipal hospital, they are totally at the mercy of others."
		Preference for equipment ownership deeply rooted in operations	"Preference for equipment ownership is deeply rooted in operations."
		Resistance towards change in general	
		Change in control models	"You know, you're no longer working towards this big sales moment, I don't know, 30 million euros are being pushed over the table again, but you're selling the thing off and mixing it with service and that's why it's actually not that much of a highlight."
		Perceived loss of control over operations	"There is a perceived loss of control over operations."
		Lack of understanding about EaaS	"Many companies are lacking understanding about EaaS models."
	Operational		
		Inability to maximize machine capabilities	"But what we see in the market, is that the clients of our machines are not able or simply not using these high performance capabilities to the max."
		Handling of several seperate EaaS contracts	"So you're not the only one who is there in your customer's work. In other words, the customer has nothing to do with 15 different equipment-as-a-service contracts with 15 different providers."
		Difficult implementation due to complexity of production	"I see more problems there, so integrating that into the operational production process is of course a challenge. You can perhaps see how suppliers are involved in such assembly by the automotive manufacturer. What a construct it is, how complex it is to adapt such a line together. I believe that an EaaS model will also be a very complex topic."
		Too much transparency in operations	"We also have data protection as a point because many customers are not willing to give the data to the provider or the manufacturer of the machine. So they say: "Great, I'll give him my raw data about how well my operation is running, so to speak, and he can use that to adjust the price model accordingly."

		Monitoring	"(…) And you have to be able to monitor that somehow. That's the first challenge."
		Implementation hurdles due to variety of data protocolls	"That's totally difficult because... Because there are 150 different types of protocol, especially when it comes to production machines. This means that you have to bring the data that you extract, the predictive maintenance data, to a backend system via a protocol, via a gateway. "
		Hybrid production fleets with high amount of legacy machines	"And above all, the truth is that many companies still have a very hybrid production fleet: Partly very new production machines and partly really legacy machines, 50 years old, where predictive maintenance is just a foreign word. These are the reasons."
		Difficult implementation due to highly customized machines	"This means that in mechanical engineering we often talk about customized machines, and I think that both on the supplier side and simply on the customer side, this prevents us from imagining such a shared model in the final analysis."
Impact of External Shocks on Challenges			
	COVID-19		
		Rethinking own service offering	At the same time, however, I think it has also led to a bit of persistence, not to make this leap to an equipment as a service provider, but more like something like a rethinking service offering.
		Focus on smaller steps towards a EaaS offering	So then this whole financing and accounting part, let's say, was parked and put on hold a little bit and in return we went back to the foundation of this connectivity and looked at how we can actually master and master this, so that we could maybe enrich our business model with other small variants on the journey to the Equipment as a Service providers, with remote services, with remote maintenance scheduling, i.e. smaller steps that create more value and can be interesting for both the company and the customer.
		EaaS efforts were scaled back	So the consequence was that the equipment as a service efforts were scaled back, but at least you say, ah, we still have homework to do.
		Change in usage behavior and predictability of companies	That's what we see in the market and yes, otherwise it's something like Covid. So when such a global shock comes, it changes the usage behavior and also the predictability of the companies.
		No impact at all	So with COVID, for instance, the power tools had the best year ever because everyone's starting doing work at home.
		Focus on operational safeguarding of the core business	And I think all the capacities of a spiritual nature in the boards and so on were suddenly completely in the operational safeguarding of the core business
		Indifferent about impact	They have changed the macroeconomic playing field, but as I said, not specifically Equipment as a Service topics.
		COVID favored EaaS attractiveness as a business model	The topic of EaaS was massively on the agenda for about a year or 9 months.
		COVID encouraged trade-offs between outsourcing and insourcing	And that's where you have to find the middle ground, that's where the cards are already laid out, what they keep in their own hands and what they are giving away now and then you have such an uncertainty.
		Corona disclosed vulnerability of supply chains	On the other hand, Corona has also shown us how complex your supply chain is, the more you have to tremble. The more you have in your own hands, the less you have to tremble.
		Corona has favored digitalization and remote issues	Yes. Of course, Corona has favored and optimized everything that digitalization and remote issues are, and it has given it a bit of an upswing.
	Ukraine War		
		No impact at all	Well, I don't think that added that much to it now. What it has done again, of course, in my view, has ushered in a time as far as monetary policy is concerned.
		Focus on operational safeguarding of the core business	And I think all the capacities of a spiritual nature in the boards and so on were suddenly completely in the operational safeguarding of the core business.
		Companies are stuck in crisis mode	It took a relatively long time for them to be taken up again. Some of them, I think, simply died of the phase. That has to be said very clearly. And you shouldn't forget that when something like this supply chain fragility came, where no machines could be produced at all for a very long time and that the substance of these industrial players went to them, they had no air at all to think about other things than how do I get my core business to make ends meet.
		Increased energy costs	The Ukraine war has caused energy costs to explode due to the energy crisis.
		Indifferent about impact	Wow. So, subjectively, I don't know if that would have had an impact on EaaS.

Implementation of EaaS Models			
	Impact of COVID-19 or Ukraine War on Implementation		
		Understanding the customer issue	I'm interested in my customer operating this usage-based business model for as long as possible with as much usage as possible.
		Focus on safeguarding core business	The immediate concern led to say, what are the most important things that we still have to maintain and all innovation projects were actually on pause that day.
		Budgets allocations beeing trimmed to the necessary	Now every budget is critically questioned again. And everything that is not essential for survival now tends to be pushed back a bit in time.
		Implementation projects came to a stop	They just came to a stop, that's for sure. So, Corona pandemic, I would say, was a different kind of crisis for us. We were much more directly affected than the Ukraine war, where we were hit a little more indirectly.
		No impact at all	Same answer as before. Not at all.
	Measures to Promote EaaS Adoption		
		Design EaaS models together with relevant customer segments	I think that's a very, very important factor that machine manufacturers have to deal with what are the archetypes in my industry, in my clientele, for which customer segments such a model works and for which it doesn't.
		Build a network to ensure utilization	But that's the only approach I can think of now to really make such a model fly. You just have to manage the utilization somehow or build a network that can ensure the utilization.
		Get rid of German way of thinking	I think we Germans are unfortunately always really, really bad at advertising on our own behalf and saying, hey, look, I have an asset here that lives for 20 years, but you don't want to have a 20-year-old machine on your farm.
		Promote EaaS more actively	So I think you just have to promote it a lot more actively. That's actually the main issue.
		Use EaaS as tool to create room in the CapEx or OpEx	Well, nice question. I would see these as I've told you before, being adapted to cases where you really want to tackle the CapEx and the OpEx side. So what do you want to do? Do you want to create room? Do you want to create room in the OpEx?
		Providers have to make upfront investments	You have to pay a lot in advance. So you just have to advance financially, risk-wise, trust-wise, you have to advance.
		Set attractive commercial conditions	You can't do anything as a provider. Unless you can just set extremely attractive, commercial conditions and etc.
		Providers must find solutions to tackle data security concerns	I think the topic of data is tricky, but I don't really know what the providers are going to do. They can go in the direction of data security, clearly say we are data secure, but that's difficult somehow, I have the feeling.
		Gather references with relevant industry players	So really take action by having references, by laying the egg once and then you can start, chickens and eggs again and so on and so forth.
		Organizational Set-Up of service organization	Basically, first of all, set up your service organization in such a way that you are able to start it at all.
		Involve subsidies from German digital pact	Even that, even that leads many companies to say: "Yes, but we have, why should we invest now?" Yes, and then we have to explain again: "There's a digital pact, you'll get subsidy money."
		Address customers with value-based pricing	That means you always have to go in with value-based pricing. Basically, you have to explain that if you bring this solution, the predictive maintenance solution, into your production fleet, you will save so many euros. You have a return on investment after X months.
	Measures to Reduce Implementation Risks		
		Risk sharing with insurance partner	Money, money and more money. Yes, so in such a moment you can only do it commercially. So either through policies, insurance, risk transfer options, so these are the usual measures, where you say, there is now a risk, who bears it.
		Understanding the end-to-end process of value creation	But I think you have to look at it holistically and you have to be aware that a relatively large number of areas are involved.

	Define specific customer groups and use cases	In other words, what individual risks and topics are it actually about and then selecting what is actually the right thing for different customer groups or use cases, except as trying to place the overall package.
	Start with small projects	You don't have to have somehow designed the thing down to the last part and then somehow go out large scale and now just screw up the model.
	Openness for interface access	Exactly, and then there is also the issue of interface openness. Some manufacturers are not even willing to pass on the issues to us, even if they are the data owner. That's where billing models come in.
	Industry standard for data	Another topic would be if, in the best case, there were also an industry standard for the topic of data.
	Risk sharing with financing partner	These are all such fears. Of course, it's not a problem if you have a financing partner with you, but we always have to explain everything to them first.
	Awareness for change effort	I have to completely change my going-to-market concept.
Implementation Hurdles		
	High individualization of hurdles within projects	This means that for a long time you actually only have to deal with successively removing each individual hurdle in order to either find a technological solution, find a commercial solution or find a risk transfer solution.
	Lacking guidance on how to deal with damage	How do we deal with broken equipment? How do we deal with the fact that the equipment is damaged by others on the factory floor? How do we deal with insurance services related to equipment?
	Network coverage in Germany	And still, it depends a bit on the network coverage in Germany. We've had that before.
	Lack of connectivity	It starts with connectivity. They say, ok, now the machine is going to some other farm. This means that I have to be able to check that it is not a problem as long as there is no problem in the open yard.
	Lack of in-detail process and product knowledge of providers	You have to know exactly how often which screw breaks on average, how often do I have to replace which parts on average, how often does a technician come, what does he cost and have to calculate it in such a way that on average you still earn money.
	High change management effort	It turns a lot of things upside down.
	Lack of knowledge about production processes on client site	So this process understanding at the customer is really important.
	Hetorogeneous system landscape on the client side	Okay. What implementation hurdles exist? You usually have quite a zoo on the client side in terms of the system landscape. You have everything from Excel to SAP. That makes integration on the customer side difficult.
	Lack of MVP approach	You'll notice when I get deeper into it now, so the MVP is a really important topic.
	Resistance to business model change by sales personnel	Because your people, including your salespeople, are simply used to selling machines for 500,000 euros. And then you can wake them up at night and then they rattle off the USPs somehow, whether technical or commercial.
	Lack of digital client management processes	Yes, we don't know. So, how can you monitor if there is an availability guarantee in it?
	Lack of customer orientation	If you don't know exactly which part of your customers you want to offer this to, then in the end you design a service that no one buys because there is either too much or too little in it
	Lack of service personnel	You're transforming your entire business model, and that starts with invoicing, but also how you manage your operational service.
	Legacy systems	But Germany still lives very much from an old legacy park. And the production machines there are over 20 years old.
	Lack of personnel	And then you have to think about how to do it, whether you have to set up an organization for it, a team, a separate unit.
	Variety of data protocolls	There are different data formats, ODB, OBD, I don't know. In any case, it is these connection formats that make the machine intelligent from the start.
	Data Security	And the issue of data security and so on.
	Sales training	Success factor for me is a clear sales training and also ne, let's say, well, always these sayings.
	Financing	Well, a success factor, of course then of course the topic of financing, which you somehow find an answer to and approach the topic.
Implementation Drivers of EaaS models		
	Importance of the level of digitization	Well, I think it was actually always excellent when the degree of digitalization of the machine is already within a reasonable corridor.
	Importance of level of servitization	A high proportion of service helps 100% if they are already doing it, who are used to doing business in a different way than just selling new machines.

		Need to build a business case	That's why I'd rather talk about the low risk of dramatic failures and go over the quantitative business cases rather than the machine itself and the quality of the machine.
		Use of MVP approach	MVP approaches, super important in my eyes.
		Use of pilot projects	So it's very important when implementing that you have to pilot, which means you choose one, two, three markets and then you have a pilot team.
		Critical success factors of EaaS adoptions	I really have to create service sales in my company and the company, they have to form a team

11.4 Interview Transcripts

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Interview Transcript Participant 1

Speaker 1 00:23
I'd just jump right in with your time in mind. Namely, to what extent are customers of machine manufacturers familiar with the concept of equipment-as-a-service?

Speaker 2 00:39
From my point of view, you are familiar with wording and business models on a meta-level, yes on a high level, and you have been dealing with them for several years, but some have already come into a kind of valley of tears.

Speaker 2 01:03
It's more complex than you think, you have to find the customers and do you really earn something with it. That's how I experienced it in the direction of mechanical engineering, that's my impression of it so far. People know this, know this, but the applications are still rather open.

Speaker 1 01:21
And does this also apply to the customers of machine manufacturers who offer these Equipment-as-a-Service models?

Speaker 2 01:32
Customers, do you mean those who then purchase this machine as a subscription and do not buy it?

Speaker 1 01:42
Yes, exactly.

Speaker 2 01:42
Yes, I think so too. My impression from the complex mechanical and plant engineering industry is that metaphorically it is such a chicken and an egg, that it is not yet the case that the real customers pull so much and the hustle and bustle, but rather that the suppliers try to make it palatable to their customers.

Speaker 2 02:03
And it's often exciting when you ask them, okay, they want to offer something like that now, do they have something like that for their own machines? Then there is actually a, no, we don't do that.

Speaker 1 02:14
Yes, exciting. What do you think are the reasons for this?

Speaker 2 02:24
It's definitely something new. And such a company so far, such a company is triggered in the direction of new machines. A good company is not only triggered by new machines, but also by service.

Speaker 2 02:37

But the whole package around, selling, but also, I think, selling your own company, that it's a business model that flies, that's not so without. And my impression is also that a sale has a certain clarity.

Speaker 2 02:57
Equipment as a Service is also clear. But I simply have to reckon with it as a provider, I have to go to the customer, simple maintenance work should perhaps be done by the customer himself, which is logistically difficult.

Speaker 2 03:12
So, there's just a lot that hasn't been done yet. And they already have the first references to who the companies are. And that's the right way to go because you only learn if you really do it.

Speaker 1 03:27
Yes okay, let's get to the customers of these EaaS offers. From your point of view, who are the typical current customers of such equipment as a service offers in mechanical engineering?

Speaker 2 03:45
My impression is that potential customers are more likely to be the larger companies, corporations, who can try it out. And since these of course come from one provider have the charm that they have several systems on site.

Speaker 2 04:06
It's of course tricky for you as a provider to offer something like this just for one system, because I have to advance the whole service. I have to be present etc. And the larger my population, the more worthwhile it will be to ask things like Visiting Engineer or etc.

Speaker 2 04:25
Therefore, I need the population with the customer, and I need a customer who wants to try it out and participate. The larger companies seem to me to be more predestined because they are more open, okay, let's try it out now.

Speaker 1 04:44
And then, from your point of view, who are the typical current customers in terms of the people who then claim these machine subscriptions?

Speaker 2 04:55
Still don't get it, Julian, again, please.

Speaker 1 05:03
Yes, so the question is mainly aimed at the end users of these equipment-as-a-service offerings. In other words, those who purchase services from equipment-as-a-service providers, such as Trumpf, who make use of services.

Speaker 1 05:20
Who are the typical current customers you will find?

Speaker 2 05:25

So, I mean, if I think it in the direction of Trumpf, who is the customer who buys the Trumpf bending machine or laser center?

Speaker 1 05:33
Exactly, right.

Speaker 1 05:37
Or to all the other companies that have introduced this model to the market as providers. As I said, in principle it could be charming for everyone, but how is it in different industries, or in different company sizes.

Speaker 2 05:53
It seems to me that the larger customers are more likely to respond to this.

Speaker 1 06:01
Could you perhaps elaborate on that a little further? So, what are the recurring common features or requirements from these customers?

Speaker 2 06:11
I mean, why is a customer doing this? For a customer, it may have a charm because they say it's a "no-worry solution." I don't really have to worry about it anymore. Even if he knows, of course I enter into a certain uncertainty.

Speaker 2 06:31
And it seems to me that the middle class and the SMEs can afford less to start an attempt that then doesn't work. Also, because they are far more conservative.

Speaker 2 06:50
You want to see this run first to believe in it. And they often own the machines, which of course reduces a risk. "I'm the one who can operate the machine well." "I don't want it to be anyone else."

Speaker 2 07:08
And now a motorist, who can rather fall behind, the process is only the assembly, the marketing, and the sales. Then I don't want to worry about production or individual parts at all and then that seems to me to be a pretty good solution.

Speaker 2 07:29
Although, yes, as it is with the large corporation, you have to go through several instances and there you can of course be tougher again for the user/provider. But that's how I come to the conclusion.

Speaker 1 07:44
Okay, but do you think that perhaps such a general catalogue of requirements or characteristics has already been worked out? From which side? If a company wants to offer equipment as a service, they can already be provided with a catalog at this stage, for example, that describes these characteristics or requirements, with which these offering companies can identify potential customers.

Speaker 2 08:31

From my point of view, however, most of them proceed rather differently and it is, yes not the case, that suddenly a customer falls from the sky, whom you have not yet known and where you know, ah, he can now be interested in Equipment as a Service, but you hopefully have a nice portfolio of existing customers or a portfolio of existing customers, who primarily have the maintenance and services done by you. And then you might also have an inventory portfolio of those that go into something like a real maintenance contract. Or a full-service contract that they can do a lot.

Speaker 2 09:16
And that's probably the springboard for them, that you say, okay, can we do more. So, in a customer place, where you have to make sure that you bring an original spare part to the man or woman.

Speaker 1 09:29
Okay, I see. Let's move on to, yes, the general assessment of the need for Equipment as a Service solutions, again from the end customer side. How high or low would you estimate the need for such solutions from the customer's perspective?

Speaker 2 09:56
Totally dependent on what the customer really feels, what advantages he gets. Accordingly, this can also quickly become high or can remain as it is now. I mean, we tried to find a clustering somewhere in our survey at the time.

Speaker 2 10:24
Are these rather mobile goods, are they complex goods? We didn't get anything out of it directly. I mean, there are companies that basically offer their tools, a little bit as equipment as a service or as leasing, and it works.

Speaker 2 10:39
And there are certainly complex machines where this also works. But the more complex you become, the more individual your product becomes, and the more difficult it is, I think, to predict in advance what the service cases are, etc.

Speaker 2 10:55
And with Equipment as a Service, you take up the warranty in front of your machines.

Speaker 1 11:10
Okay, let's talk about industries and machines. We've just touched on some of that. Once again, I explicitly asked myself which industries you think are predicated for the adaptation of Equipment as a Service and, as I said, again on the end customer side, i.e. these subscriptions, paper use, financing and then taking advantage of them.

Speaker 2 11:28
I think so, when you look at the idea of Software as a Service, you don't even talk about the fact that you're doing it. So, here's this huge advantage that all updates, maintenance, spare parts don't exist in that sense, but that you have it mapped online.

Speaker 2 11:46

Wherever this is the case, there is a tailwind. And this traditional mechanical engineering wherever I can't do everything via remote monitoring, I really have to think about that.

Speaker 2 12:03
Accordingly, the more I focus on the topic of remote service, remote diagnostics etc. and get better, the more these industries will have a tailwind.

Speaker 1 12:15
Do you have specific industries in mind that are already very advanced or that have a high demand for these remote services?

Speaker 2 12:27
In my view, it's all of them. I mean, everyone would find it nice if the service technician no longer had to travel there and pay the travel expenses, but if he somehow did it "over the air".

Speaker 2 12:49
I think everyone is suddenly ticking the same way. Yes. But of course, it's always when you have a lot of power in machines, a lot of wear and tear, etc., that's natural, you still have this wear. You can replace and repair parts.

Speaker 2 13:10
So, let's compare, if you have a heavy turning center or you have a press, there are of course more weights and there will also be more haptic service than with a coordinate measuring machine. All you have to do is measure this part and take a few photos.

Speaker 2 13:26
There's really little wear and tear. You can do more about the remote.
Speaker 1 13:40
Then maybe a different question. Which industries are easier to reach or already are, already have a certain degree of maturity so that these services can be adapted there?

Speaker 1 13:52
Are there perhaps industries that you have in mind, where you say, yes, they are already very advanced?

Speaker 1 14:01
It always depends a bit on the definition. There are some who completely dismantle equipment as a service, etc.

Speaker 2 14:09
I know there are some companies in the construction tool sector that don't sell most of their tools anymore, but have fleet management in the same way, which is also moving in the direction of equipment as a service, so I only pay for the use of the tools.

Speaker 2 14:30
And if they're broken, I'll give them back and get a new one right away. And if they need to be repaired, I'll give them back and get a new one right away. It works brilliantly. So that's where it works.

Speaker 2 14:44

I can replace standard products quickly. It clearly works throughout the software industry. And where the products become heavier, more complex, and customer-specific products, the tougher it gets.

Speaker 1 15:01
Okay, I see. Then, as I said, we already have it in part, you touched on it, but here again explicitly the question, which types of machines or equipment in mechanical engineering are best suited for equipment service models from your point of view?

Speaker 2 15:24
Well, I'm convinced, it really depends on the number of pieces. So, it's not the number of pieces that I produce, necessarily, but the number of pieces that is with the customer. Yes. So, if it's high, then I can imagine doing something with it.

Speaker 2 15:47
If that, this construction sector that I just mentioned, of course it doesn't sell it if you just buy a hammer drill. If you have an equipment service, you just have 100, 200, 300, and then you say, "okay, now we're talking."

Speaker 2 16:04
And then you asked about other characteristics. Yes, of course, if the thing is standardized, the products, the equipment, that's also an advantage. If I can do a lot remotely, it's an advantage, a huge advantage.

Speaker 2 16:29
And I ask myself, does the mobility of goods play a role right now? I would also say the thesis that yes, the more mobile it is, the better. So, by mobile, I mean, we have a problem, you just send it in.

Speaker 2 16:46
Or a paper machine, you put it in place once and it stays there for the rest of your life. When it comes to equipment service, this always means that I, as a provider, have to go to the customer. I can't somehow get that thing back. When you're with the customer, you need a lot of things from the customer to make it worthwhile. Because otherwise it's really tricky why I, as a provider, should make it cheaper or better than the company on the property and property of my machine.

Speaker 1 17:22
Yes, I understand. Yes, that makes sense. You have just given me a concrete example of a machine where it would not be very suitable. Do you have any other explicit examples of machines that would be well suited?

Speaker 17:40
Actually, make it an investment based on these criteria. So, there is a lathe, a turn-fraise center, which is standardized by a few companies. If they are standardized, they knock out a lot of them, then they also have a better feeling about how the service is going, what the availability is like, what the susceptibility to interference is. Cool. And the same company, however, makes a few custom-made products, customers, individual products in the center.

Speaker 18:10

And of course, it is now more difficult to say in advance, how is it going, what is the availability, when it will be cancelled, how many people have to be ready so that it can be serviced. If you're with Equipment as a Service, then it's never done, the customer will always ask, yes, if you do Equipment as a Service now, then I want availability.

Speaker 2 18:27
And if the availability is not there, then you pay a penalty. You don't want that. That's why I say, I think it depends less on the industries, in all industries and plants, there are complex customers and there is an attempt to standardize the thing. Whenever you are in standardization and have a standard maintenance, the certain mobility of things, then it will be cheaper to offer equipment as a service, more attractive than in any other case.

Speaker 1 19:02
And how would you rate the, i.e. the significance of the criterion of number of moving parts in a machine, for example?

Speaker 19:26
That's what I'd say, totally dependent. So, two thoughts. The more there are, you can say, the more breaks. The more it breaks, the more it has to replace and repair, etc. Of course, I think it still has something to do with the development design principles.

Speaker 19:41
Well, you know NASA, they shoot up a rocket, have a lot of parts, but they make such a redundancy that the rocket only breaks every ten years. So, it also depends on that to say how much redundancy. But probably, you'll find the analogy there, in the direction of how many bearings you have, how many targets breaking points, the number of divides.

Speaker 20:08
I've mentioned complexity before. So somehow, if you can quantify complexity about things like that, then I'm with you.
Speaker 1 20:08
Ok. Cool. Then we would move on now, to the challenges and consider.

Speaker 2 20:24
But one more thing, but I think the number of pieces is actually related to that. Ok. Because even if you have something that's made up of a lot of parts, but you make the part millions of times. Have a mega good database and you have optimized the thing. And if you're making your product with only three parts, but you're only doing that once, there's a higher chance that it's going to fail.

Speaker 1 20:53
Yes. Yes, I understand. That also heralds usher. Okay, let's move on to the next top point. Challenges and concerns. What are the primary challenges or concerns you see on the customer side when using Equipment as a Service models?

Speaker 2 21:14
Then I would have to rummage again. There's the survey we did. I think you will also find quite good food there or there it is ranked many more people. What concerns do people have on the customer side?

Speaker 2 21:29
The customer always asks himself, if something new is new, am I now in a worse financial position? Because you are now doing my service, I am now paying more. Does it do even more maintenance than I wanted anyway and that plays into my price.

Speaker 2 21:50
The other, although the EaaS can actually still be relatively well sprung. If we think about it, how is it really with availability, that is, the uncertainty that he has. Then he will ask himself, what about the data, will it not go away.

Speaker 2 22:07
And certainly, there is also a concern, okay, it takes away a part of my added value. Is this value creation a core competency of mine? And of course, you know that with the Ansoff matrix, you can do product diversification. You can always develop your business models in such a way that you add the supply chain onwards or upwards more and more. And then someone eats it up. Of course, this can also be the case if you think very strategically.

Speaker 1 22:43
What impact does the Corona pandemic or the Ukraine war have on these challenges or concerns?

Speaker 2 23:17
Yes. Of course, Corona has favored and optimized everything that digitalization and remote issues are, and it has given it a bit of an upswing. On the other hand, Corona has also shown us how complex your supply chain is, the more you have to tremble. The more you have in your own hands, the less you have to tremble. And that's where you have to find the middle ground, that's where the cards are already laid out, what they keep in their own hands and what they are giving away now and then you have such an uncertainty.

Speaker 2 23:50
Where is the question again, how did the Corona pandemic have an impact? In a pandemic, yes, this of course favors, so digitalization favors such business models where you can do things remotely. And along with that, you can, I'll say again, ask yourself more seriously the question, more seriously, EaaS, what for me or not. And then, I think, I'm more positive

Speaker 2 24:24
The second sub-question, Ukraine war. Wow. So, subjectively, I don't know if that would have had an impact on EaaS.

Speaker 1 24:24
Ok. Okay, then we come to the penultimate point. The promotion of EaaS adaptations. In your opinion, what measures could equipment asset service providers take to promote the adaptation of such models on the customer side?

Speaker 2 24:59
This has nothing specifically to do with EaaS, but in B2B, no, also in B2C. You'll always see references. You'll always see references and that it works. And then you say, okay, if that's there, then I'll do it too.

Speaker 2 25:20

If everyone has the iPhone and the iPhone looks good and everyone is talking positively, then they want all the people. And if Daimler sees, wow, BMW is doing EaaS and their numbers are going up, then I want to do the same.

Speaker 2 25:37
So really take action by having references, by laying the egg once and then you can start, chickens and eggs again and so on and so forth. I think the topic of data is tricky, but I don't really know what the providers are going to do. They can go in the direction of data security, clearly say we are data secure, but that's difficult somehow, I have the feeling.

Speaker 2 26:07
It's all a bit of a mystery, you can have super firewalls, and everything protected, but someone is always smarter and can knock it out somehow. And that with business models, so the company itself has to say, is it too risky for me that someone else takes over my value creation or not.

Speaker 2 26:33
You can't do anything as a provider. Unless you can just set extremely attractive, commercial conditions and etc.

Speaker 1 26:58
You just mentioned the chicken/egg problem, for this, I'll say, initial. In other words, the initial customers, users of EaaS. What strategies do you have in mind to attract these initial customers? I thought it was similar to what always happens with reference customers. You have to pay a lot in advance.

Speaker 2 27:26
I thought it was similar to what always happens with reference customers. You have to pay a lot in advance. So, you just have to advance financially, risk-wise, trust-wise, you have to advance. And then they have to pick up. If possible, as a provider, you have to say in advance, hey, if this works, then we have to be allowed to drum up a bit somewhere and take them as a reference customer and become an investment. Otherwise, it won't be of any use to us somewhere. You won't be able to avoid building this up with a customer and approaching them at the beginning.

Speaker 1 28:02
Yes. Wonderful. Yes, then the last question actually, before I ask my colleague again if they have any additions. Topic: Practical examples. What concrete practical examples of successful EaaS adoptions on the customer side are you aware of?

Speaker 2 28:24
So, companies that use EaaS services. As I said, in this tooling sector in the construction segment, I know that customers are happy to accept it. I can only talk about third parties, I don't remember exactly, for example Heidelberger.

Speaker 2 28:52
Druck has a few publications, so you'll have to read them yourself. I know that. also, one side and the other, I don't know exactly, they have to research afterwards. Sure, it's in the software sector.

Speaker 2 29:08
You know it, you know it super strong. Otherwise, it's more likely that there is still a lot of talk about it. And I do believe that these pilot applications are also there and are also being ventured forward.

Speaker 2 29:27
But at least with the companies that I am allowed to accompany in this way, it is not yet the case that you have a bouquet of references. And that's why you don't have as many best practices that you have. But as I said, I'm also more in the direction of complex machines, the customer's individuality.

Speaker 1 29:59
Yes, I see. Who is in my position in this area of construction tools right now, so would there be a conceivable company, for example Hilti? Who would be then, so how can we imagine that who would be Hilti's customer, are these major construction sites, are these, is this another distribution chain that follows or who would be the customer?

Speaker 2 30:29
Yes, we already know that these are, in that sense, end users. End user directly, okay, yes. We don't change that, not us, so we are really companies in the construction segment.

Speaker 1 30:48
Exactly, yes, so the last question now would be, what do you think has contributed significantly to the success of each project? You have already said that there is, there is a lot of talk about it, but perhaps you will have a few impulses for us in general as to what contributes or can contribute to the success of a successful Equipment as a Service introduction.

Speaker 2 31:25
I think reference, in the beginning with references like this, it's always the case that you need a lot of trust between the offeror and the buyer in the company. Otherwise, one company won't say, I'm entrusting you with this, because you know what's new, and the other won't do it.

Speaker 2 31:40
So of course, you need the trust, you need the clarity and the trust that they usually develop over a longer period of time here. So that's project success. And if it comes to more than references, then a project is a success if it is for both sides.

Speaker 2 31:59
First and foremost, economically attractive. We sell their service and make sales and the worry with the risk and uncertainty, which is also solved, then I'm good. That's actually it, then you can say, let's hack behind.

Speaker 1 32:14
Okay, great, yes, thank you very much. Then we're already done with the questionnaire. However, I have already heard here via my teleprompter that I believe that Mr. Capelli would like to add one more question.

Speaker 3 32:35

You also just mentioned the general trend of the push market in the EaaS context. I would just be interested in the provider side, what are your experiences or your assessment, would you say, what are the absolute drivers, what does the provider lend to it?

Speaker 2 33:07
I don't see them anymore; I don't know if the rest of them are the same. I don't know anymore. Or have I lost it? I think I just froze. Yes. Ah, now, yes. Okay, perfect. In general, yes, there is a trend that the EaaS environment is currently more of a push market.

Speaker 3 33:26
There is your assessment, what do you think, why are providers of equipment, is it, is it a hoped-for, continuous revenue stream, an increased revenue stream, or does it perhaps have a strategic component, or is it competitors who are already doing this, that there is simply a pressure to move in the market? What do you think the core drivers are there? So, where does the companies want to offer?

Speaker 2 34:02
Exactly, exactly. Yes. Of course, I do believe that the Business Development Department also has something to do. They have to think about that.

Speaker 2 34:27
I think the topic of digitalization and remote services also plays a major role in the fact that people are in a better position to think about it now than they were 15 or 20 years ago.

Speaker 2 34:50
That's a point. And probably, probably also such a megatrend is looking at the fact that we in the West are of course moving even more into the service society. And we have so far excluded Corona and Ukraine, so we have done quite well.

Speaker 2 35:11
So, supermarkets were full, bus came on time in the morning, you don't notice that for the first time. I always find it exciting when I go in to see my students now. Earlier you would have more demand, so the supply was smaller, so it wasn't 15 years anymore.

Speaker 2 35:41
But coming back to your question, what are you doing? And we're getting closer to this service society anyway. And you're outsourcing more production, more other stuff. And that it could be charming, of course. But I also think "you need to be prepared" for what's coming in the future and probably look a bit staring at the software industry. And say they make money; they have better graduates. But we have to cut it off.

Speaker 3 36:18
Okay, it makes sense. But then it also means the other way around. You've just said that there aren't the big success stories.

Speaker 3 36:34
Do you still have a success example from your own experience, so you happen to think of a provider that you may have worked with that has successfully implemented, i.e. an EaaS business model?

Speaker 2 36:51
I always think EaaS is at least in the top league as far as the literature and for definitions or others. I think where the companies are already doing well and where there is also a sense of security, everything in terms of maintenance contracts, rifle performance, renewal, capability, you get very close to EaaS.

Speaker 2 37:18
And I would say that the majority of them are in German mechanical engineering, and they are doing their homework. In the past, you've already professionalized a key business in service, that's the way it is, that's where things are going.

Speaker 2 37:38
And I think that's a far greater success and probably also the important way to slowly go up.
Speaker 1 37:51
Still as a supplementary question. How do you think German mechanical engineering is doing compared to its Chinese competitors?

Speaker 2 38:10
I don't know, actually. Because, yes, a lot of opinions, but I think I would have to have been to China for a long time, I think, to feel that. So, what is slipping over into electromobility above us is, of course... German engineering and all good. It's impressive from my point of view now, so that's why I don't want to... Don't venture out of it

Speaker 1 38:37
Yes, okay, I see. But with regard to service level agreements and so on, are the Chinese competitors on a similar level to the Germans, or are there discrepancies between the services that a Chinese provider and a German provider bring in, for example?

Speaker 2 39:11
I'm overwhelmed, although of course there is always the point that where they are geographically closer, they are of course always at an advantage in service. Of course, this means that a European company with Homebase Europe will only have an easier time doing your service in Europe than if you bypass.

Speaker 2 39:33
So, vice versa just like that. Yes. Ok. Gentlemen, unfortunately I have to look at the clock. How long do you need for your study? I mean, the more I listen to you, the more exciting it becomes for me.

Speaker 1 39:51
Yes, indeed. So, yes, we still have time until the end of December. It's relatively tightly scheduled. Yes, resources are finite. Interest and curiosity are great. Yes, that's the time frame. We're also talking to a lot of other players from this whole ecosystem.

Speaker 1 40:11
We would also like to talk to you again if you like. So, if you have any questions, if we have any questions, we would be very happy about it. We would also be very happy to let you know the final result accordingly, what we have found.

Speaker 1 41:15

Yes, and otherwise. Thank you for your time.

Interview Transcript Participant 2

Speaker 1 00:16
Then I would also start directly into the questions because of the time, I think, if it suits you.

Speaker 2 00:21
Yes, I'm happy to say that I've basically been with my company for eight years. I mainly look after pharmaceuticals, but also a lot of medical technology customers. And in this context, I have also done a lot in the equipment area.

Speaker 2 00:38
So, for manufacturers of medical equipment who have to place their products in clinics or in larger GPOs.

Speaker 1 00:52
Very, very cool. Technical question in advance. Would it be okay for you if we recorded the interview so that we could transcribe it afterwards?

Speaker 2 01:02
As long as it's just for you to transcribe, that's okay. Yes, that would be. I haven't been able to prepare for it that way. But I haven't seen the questions from you in advance either. So, let's see how well I can help you.

Speaker 1 1:17
Is completely fine. Then the moment starts, because now the recording starts. Jonas can open this one of you, because if I don't feel like it. Yes, so that's how it is. And otherwise, that's how we start.

Speaker 3 01:38
No, not really, maybe that's because, you might have a conflict. Because with you maybe it's not possible to record that, can that be?

Speaker 2 01:50
Otherwise you just measure your phone.

Speaker 1 01:56
Then I'll share a screen, then you can see the questions on the side. I think it's easier for everyone involved. So briefly the topic, exactly the first question, to what extent are you familiar with the concept of Equipment as a Service.

Speaker 1 02:11
What would you say, customers that you look after, that you advise? What is the general basic understanding of Equipment as a Service on the part of your customers? Currently, it is large, medium, weak.

Speaker 2 02:29
I think an understanding is basically already 100% there, but it's not the most common way to act in the hospital sector at the moment, because you're still very much on CapEx models, where you get the return directly, so to speak.

Speaker 2 02:58
I think the difficulty with equipment is that they are service models, and that you always have to have a measurable remuneration model for use, if I understand correctly, because for service use actually has to be made measurable.

Speaker 2 03:16
And you have to be able to monitor that somehow. That's the first challenge. And then, I think, it's also an issue that is still difficult for customers to calculate. So that they themselves feel uncomfortable. In the hospital, they like to have transparency before the purchase as far as the costs are concerned.

Speaker 2 03:47
This can only be compared to a limited extent with a service concept. This is perhaps another point why there is perhaps a certain restraint.

Speaker 1 03:58
Yes, well, very cool, yes, that would actually be the second question, so the second point, if you haven't already answered that. Then I would go straight into the need and attractiveness of EaaS solutions in general.

Speaker 1 04:11
Generally rough estimate, what would you say? Is it a clear minority of consulting projects that are supervised by you in an EaaS context? Is there strong growth present?

Speaker 1 04:25
So, what's the assessment?

Speaker 2 04:28
I think this is now a topic that will grow stronger. And you have also seen this with Covid, that the pressure that is in the health system is likely to increase even more.

Speaker 2 04:41
As soon as the pressure actually increases even more, one will have to look for alternatives for capex investment solution, where the value proposition is clear, what one can gain or lose from the service at the end of the day, also for the direct invoice to an individual patient, by using such equipment solutions.

Speaker 2 05:13
Well, I'll give myself an example, if we have DRG's in Germany, then I currently have no transparency at all for the patient in the hospital environment as to how much this patient actually brings into me.

Speaker 2 05:30
And maybe I just have the feeling that I have for the treatment of the DRG, minus a few points that I can assign, but a lot of points that I can't assign. The better I can assign this, the more it will help me in the future.

Speaker 2 05:45

And if I can really calculate patient profitability, then the hospitals actually all have to go, that's my understanding. They can also better assign the services accordingly.

Speaker 2 05:56
That is, in the long term for a well-equipped hospital, this would actually be something they would have to look for. I believe that in the medical technology equipment solution, the service of individual industries is already more the standard, there are just one or the other where it is developing more towards it.

Speaker 2 06:14
I think Dental is relatively innovative in this direction. I don't think I know about the classic topics like Siemens, Philips, or something like that, which sell equipment, big equipment, but maybe you talk to them again.

Speaker 1 06:32
Exactly that would actually be a question as well, so just like you said, we're talking to several major providers. Then also a question now that you have already touched on why or what are the reasons for you why, for example, Dental is a pioneer.

Speaker 1 06:46
Rough assessment, there are special reasons for this.

Speaker 2 06:53
A good question, so maybe, there may be several reasons for this, because the industry is professionalizing a bit faster due to the fact that the groups and chains have now also put in a lot of effort and also, yes, and I say, the customer structure is perhaps different from a rather conservative hospital, yes.

Speaker 2 07:25
If we in Germany de facto still have a relatively few, I'll say classic private individuals like Asklepios or Helios, who are perhaps a bit more innovative than other carrier types, yes and now this is not necessarily a Germany-wide phenomenon, but I think it's also global, just the part there, for example, is already a bit further, because there may be these new customer structures that are also developing there now, yes.

Speaker 1 08:03
Okay, cool. Very interesting. If we stay in this direction and just look at you as a consulting company, you advise or sell the projects primarily to companies that offer EaaS, i.e. on the provider site or to customers who accept it as a customer.

Speaker 2 08:31
As I said, I had a big topic, which we, we didn't do in the end, because the customer had thought about it again in detail, it wasn't directly about EaaS, but it was about service and selling solutions.

Speaker 2 08:47
And it was embedded in the larger context. And there was a big player in the organization who wanted to position itself accordingly. Basically, first of all, set up your service organization in such a way that you are able to start it at all.

Speaker 2 09:09
This is probably another big challenge. So, you can't assume that a medical technology company that is used to selling service and especially service in continuous support.

Speaker 2 09:29
So, in the past, a medical device company would have simply had classic salespeople who just sold a product once. But that's different from actually needing the ability to establish a continuous sales cycle.

Speaker 2 09:45
I also need other models afterwards, how I track that etc. I need another organization behind it. In other words, there is always an organizational component that I have to cover somehow.

Speaker 1 09:59
Total, absolutely. In addition, would you say that you are also actively pushing from your side, because that is what we are currently taking away from the literature and from the first interviews, that there is a strong push market, that the providers are actually the ones pushing the topic, and that the market is actually not yet ready in some cases.

Speaker 1 10:23
Could you confirm that, and would you say that consulting firms are also targeting this push or rather just confirming a need of the providers?

Speaker 2 10:33
Yes, I think the push is coming. So, I would ask, how is the push driven? The push is just driven by events like Corona, where you then realize, okay, it's problematic to bring Capex products that somehow cost 10,000 euros or more to the hospital, because this is the very first product, which is now in doubt not necessary in the short term.

Speaker 2 11:00
As a clinic, there is always a depreciated device somewhere when it comes to most applications. This means that depreciated equipment means no costs for the time being. And you will always be quick and postpone such investments into the future if I can't earn money directly through it.

Speaker 2 11:22
And then the companies have to come up with other models. Last year, I thought it was this year, we did a project for a pharma automation player, which is one of the only ones to be used as a payment model. These are large devices for hospital pharmacies to package medicines. Partly for the patient-specific delivery to the patient.

Speaker 2 12:00
And they were the only ones in their industry or in their segment who, let's say, offered pay-per-use models or similar constructs or offered leasing models for their equipment.

Speaker 2 12:19
Namely, they have moved away from CapEx models. That was internal in controlling, even for them it was not so easy to say when a project is really profitable. Of course, it's always easier to plan if I somehow have costs and then a sales value that I get back right away.

Speaker 2 12:36
So that was certainly one of the challenges. We looked at it in a sales process, we had to look at it from the buyer's side, so to speak, and we had to find our way through the fact that it was not so easy to understand how these contracts look profitable or not profitable at the end of the day.

Speaker 2 12:59
Because you can't see it so clearly anymore.

Speaker 1 13:05
Yes, interesting. Nope, that's definitely what it's aimed at. I would then go into one more point, which you have just noted. You have clearly said that the Corona pandemic can definitely be seen as a driver of such service models.

Speaker 1 13:20
Also, in the sense of CapEx, you would say, clearly Corona in the MedTech hospital sector, definitely. Would you also say that the Ukraine war has also led to certain liquidity bottlenecks, and you have also felt a push or was that rather irrelevant?

Speaker 2 13:39
I think Ukraine has, if it led to the fact that medical technology fundamentally, so it's no secret now, in 2021 and 2022 has medical technology, and you can see that, I think, also in our study that we published, the industry has grown by more than 15 percent in both years.

Speaker 2 14:00
But that wasn't the case, so of course there were a bit of roll-back effects from the 2020 year, because the rest is also strongly inflation-driven. Inflation was then simply passed on to prices.

Speaker 2 14:11
And if, I'll say, the consumer goods etc., consumer goods or consumables, all become correspondingly more expensive, then I have the topic of what CapEx means, of course, a different restrictiveness for everyone, because I'm already somehow exhausted anyway, because I somehow have higher wage costs, which have now also arisen due to inflation.

Speaker 2 14:36
And I think that's more of an indirect effect. So, you always have to describe very clearly that Ukraine has led to inflation, among other things, yes, and inflation will just lead to higher costs.

Speaker 2 14:49
Yes. And higher costs lead to less room for cash flow investments.

Speaker 1 15:02
Absolutely. Ne great. Then back to the topic, you mentioned roughly, what characteristics, what kind of customers. If we now take a look specifically at the hospital landscape, what are typical machines from your experience, if there are those or equipment that are suitable for EaaS models with which you have come into contact?

Speaker 2 15:28

The classic ones are just like that, what really makes a Siemens or a Philips etc. In other words, the real large-scale equipment, others for MRI, CT, X-ray machines. Other examples would now be robotic systems for surgery, i.e. from Intuitive, Da Vinci.

Speaker 2 15:57
Da Vinci as a robot costs 3 million. But other comparable robots also all cost more than 1 million. So, if you want to do surgeries in urology or prostate or groin surgeries, which you now also perform in part etc. so soft tissue surgeries, also lung surgeries, which are then done with robotic systems, you could theoretically reimburse them per use or by surgery. There are possibilities, but companies don't do that at the moment.

Speaker 2 16:40
And here the CapEx models are somehow still paid, at least now my understanding.

Speaker 1 16:50
Okay, if we stick to it, what would be the absolute pain points from the industry at the moment, why such models are not adapted?

Speaker 2 17:04
So, the pain point is that it's hard to calculate. Yes, that you don't have any... You actually have to calculate a model over several years and think about it, which is also more difficult to compare.

Speaker 2 17:21
I think that's also a topic, that you just have little experience with such models. That you may also be conservative in principle and have never done it that way. And also from the manufacturer's side, because I may not yet have the extremely strong push to convert the market in that direction.

Speaker 1 17:51
Then promoting EaaS adaptation. You had just mentioned, there was once a project that didn't take place after all, what are the absolute pain points in the implementation in a typical way, why maybe my project didn't get into the implementation after all.

Speaker 2 18:30
Well, first of all, I think this has to have the strategy, where do I want to go in the long term? Otherwise, I won't change such a model, yes. That means I have to think very, very much about which direction I want to go in, yes.

Speaker 2 18:43
Then I have to pour this into a format that increases profitability for me, yes. So that's the next step. Then I have to have the organization that can serve this model, yes. And then I have to somehow anchor this change naturally in the organization.

Speaker 2 19:03
So, and we're often still at the first step, yes, that I just have to develop the perspective there first. So that the companies now, I think, have a great understanding of, but the long-term, so, where do I want to be in five years and what do I actually need to be there in five years?

Speaker 2 19:26
That's kind of not there, yes. And if that's not there, there's already where the first log has. Well, it doesn't even necessarily have anything to do with the hospital, which it might not want to do somehow, but I think the push has to come from the industry, because the industry has the point that it can earn more money if it cleverly changes the model, yes.

Speaker 2 19:54
That's the perspective basically, yes. And that it could also sell more if it has an alternative offer, which is not CapEx side, then maybe you can sell more faster in the short term, yes.

Speaker 2 20:12
And that's why the push has to come from the industry side as well. And the pull will come when the offers are good and are correspondingly clean and clear in their design.

Speaker 1 20:31
Absolutely. To tick off the topic again, I will tell you if you have just said it, but do you then also approach companies concretely as a sales project, very specifically with the aim of the service idea or is it simply not like that from your side.

Speaker 2 21:07
So yes, it's one of the topics that we want to push and push because we believe that there is a lot of potential in it. And MedTech is actually still in its infancy or in its infancy.

Speaker 2 21:25
And, as I said, the strategy because it is not clear for many companies. Just today, I had a conversation with a German medical technology company that has a billion in sales and has asked for it.

Speaker 2 21:40
They have 120 different services globally, have clustered them, but have no plan at all in which direction this should actually go and how they have to develop further. So, there is also a strategic gap.

Speaker 1 21:57
Absolutely. Ne great. Otherwise, I would spontaneously only think of a question. Sure, logically you can't give any concrete customer examples, but of course we are interested in the provider side, because this is the pusher, but would you also say that customers or that you have heard of successful customers who were satisfied with a servitization model, who accept the gratitude or who are willing to accept it?

Speaker 2 22:33
There is certainly a customer. But I don't know if you've ever approached my colleague.

Speaker 1 22:46
Yes, I actually have a call with that on Monday.

Speaker 2 22:49
Yes. He can probably tell me more.

Speaker 2 23:00
They have two offers, one CapEx side. I think I can tell you that when I find it now.

Speaker 2 23:35
Dinova was that the example I mentioned here.

Speaker 1 24:00
Ah yes, great. Yes, great. We'll definitely take a look at that. Look, maybe even more are ready for an interview. That's great. Otherwise, I would be done with the questions for the time being.

Speaker 1 24:12
From my side, I would like to give my two colleagues the opportunity to ask another question if we want to get something off our chest. Exactly, then a lot of free time, Julian, and Jonas.

Speaker 3 24:50
Yes, I would actually have a follow-up question. That would be a bit aimed at the purchasing logic of companies. How common is this total cost of ownership approach in purchasing? So, I'd be happy to talk about industry and encroachment, can you tell us about that?

Speaker 2 25:10
Cost of Ownership consideration assumes that I have a transparency in usage over the long period of time. That's why it's typically not so common and is always graded again.

Speaker 2 25:28
So, the wider such a market is, also in medical technology, the more widespread it is, the more it will be in the USA or Germany, it will certainly be further than if we have done projects globally and if we look at the machines in Africa, then in Africa everything is paid for with CapEx.

Speaker 2 25:50
You'd never find a model like that. So even in Asia, CapEx will be used even more. There is also a component. And I think the biggest challenge is that you hardly have this cost of ownership perspective in Germany or the USA.

Speaker 2 26:10
And if you don't have the transparency, it's hard to compare, and then it's hard to make decisions based on it. That's why it's also that if someone only offers that, then you can somehow be an advantage for them, because they take that out of the equation as an obstacle, so to speak.

Speaker 2 26:27
But it's still always difficult for the buyer because he can't benchmark the one offer with anyone and then doesn't justify why he chose one or the other provider.

Speaker 2 26:38
And it has always had a price component.

Speaker 3 26:46

And do you know of any industries or sectors that have come closer to this transparency than others? Do you have some insights too?

Speaker 2 27:00
I know that from other companies like Stihl for example, who are there I think quite far, as a big chainsaw group. The fact that they have gone very strongly into service models, offering everything as a package via a platform and have changed everything accordingly, and have thus switched more to solution sales, especially for B2B customers.

Interview Transcript Participant 3

Speaker 2 03:16
So, how to say, the thing I've been doing in this innovation hub, I said, was equipment and service for plastic recycling machines is, let's say, a separate topic than what (company anonymized) does generally. So, it's basically, there's two aspects here.

Speaker 2 03:31
The first one is, (company anonymized) is a producer of hardware. Let's say, (company anonymized) is producer, with some 60% of our turnover being automotive parts. I don't know, it's generally not known because we all know (company anonymized) for power tools and washing machines.

Speaker 2 03:46
But actually, the biggest turnover of (company anonymized), the biggest part is on machine, sorry, automotive parts, like braking system injunction and that sort of things. So that's, we have more than 280 plants worldwide that produce these kinds of things.

Speaker 2 04:02
So in that regard, equipment as a service is a different topic. So basically, if we use it as a producer, do we rent or pay a fee on some equipment? In the majority, I would say no. (company anonymized) as a hardware producer basically owns his own machines.

Speaker 2 04:23
So we buy them once and we keep them. Interesting enough, so it's the way it is. But basically, when we buy machines, we buy them and they at some point have a turnover on price cost. At some point, the machine is just creating just benefit.

Speaker 2 04:43
As soon as you've paid on day one, five, seven, ten years after, your machine is repaid. But then, if everything goes fine, then you can use your machine for an additional 20 to 30 years. So, it's part of the company's capital basically to buy machines and keep them.

Speaker 2 05:01
So as the production that we do, generally speaking, we don't have to change our machine regularly. So that's, I said that in the (company anonymized) plants, you have machines that have been there for 40 years, for instance.

Speaker 2 05:14
So equipment as a service is not a thing, mostly. But for sure, it is interesting for new productions that when you have to have very, for instance, high-cost production, that you have to figure it out first.

Speaker 2 05:30
You can start with equipment as a service to make sure that your production can make sense. But at some point, if a company like (company anonymized), like a big producer or Siemens, these kinds of companies will always be owners of their own machines.

Speaker 2 05:44
That is for certain. At least, as it is for now. But when you need to have adaptive production,

for instance, or these new trends, so when you are as a customer, you can go on a website, for instance, and tailor -made your product for yourself, like your shoes or even your cars.

Speaker 2 06:01
At some point, you'd be able to say, I need that paint and that specific, and its very precisely tailor -made for you. Then it's a very limited series, if you want, and your production can make sense then to have as an equipment as a service.

Speaker 2 06:15
Instead of making series of always the same product. That's that. That's the (company anonymized) side. I mean, it dropped me because I can talk all day. So that's the (company anonymized) side, in the sense, the old type of production.

Speaker 2 06:32
But what I tried to achieve with this plastic -recycling thing is another idea. It's to say, we are here with the customer target market that we had. We're basically small enterprises or even NGOs, so very, very small units.

Speaker 2 06:50
And those people that are working, I said, with schools on recycling, so the idea is not to create a business, as of today, at least, but they have very little revenue, which is also specific to plastic recycling.

Speaker 2 07:06
Costs a lot to recycle, and its way cheaper to make new plastic than recycle. So that's that. But because of many other reasons, there are some businesses that can be built on plastic recycling. And my idea was to say, we can give them machines that they need.

Speaker 2 07:21
But as they can't pay it at day one, because it's big investment, actually, you want to sell it to them as a usage fee. So, the more you use the machine, the more you pay. So, at some point, you don't have to invest on day one, but you can actually give that over time.

Speaker 2 07:38
That was the original idea.

Speaker 1 07:41
So you're saying that it's the financial driver to, like the reason to use a government as a service model is in this case at least the financial driver or how would you describe the drivers or maybe inhibitors to adapt such a model?

Speaker 2 07:59
Totally financial decision one of the reasons (company anonymized) is owning all their machines also because we have money to invest on them if you don't then you have to find another way actually

Speaker 3 08:13
Just to tell you in here for a second, in terms of financial drivers, so it's not clearly financial, but so this sounds like a solely CapEx reason. So just an additional investment or do you also

expect higher revenue streams, some equipment as a service or something like that?

Speaker 3 08:31
Do you also have experience with that or just CapEx?

Speaker 2 08:39
So I said when I started this plastic recycling idea, originally, I wasn't looking at plastic in and I was thinking of proposing to a (company anonymized) company to actually buy their own machines entirely, the entire park, and to have them repaid on a monthly basis.

Speaker 2 09:00
So this was this difference between CapEx and OpEx saying would that make sense when I was actually speaking in a controlling way, but I said it has been pushed aside straight away saying that generally speaking I think it's seven years so that the machine is repaid in a classic production line.

Speaker 2 09:17
Seven years doesn't make sense to actually change the entire business model. So, it was not that much of a driver actually.

Speaker 1 09:28
Okay, interesting, because we've interviewed some people before and our tag was that most of the companies that implement equipment as a service model do it because of the formula, the drivers. So, it's more like a push market.

Speaker 1 09:43
So you're describing more like a pull market that it comes from the customer side, that they are in need of equipment as a service model in order to, since they don't have the financial capabilities to buy corresponding machines.

Speaker 2 09:59
Yes, I mean yes when we're talking of production, you know the price of a machine whatever it is I Mean it's it starts as a huge investment in any case when you want to start something as a company because of some Custom need for instance You want to take the risk but you can take the risk as small as possible and for that equipment as a service is the best the best idea So basically because you start from something but when you're talking Companies that produces for the last hundred and fifty years then it's way more complex process

Speaker 2 10:57
Hmm, I mean as much as I can talk for (company anonymized), I would say that there are not many drivers. Marketing would make no sense. I mean no one cares how a product are produced It's not like you could say yeah, I'm saving on this and that this would be no marketing argument. And I would say it has to be something specific in production, like injection, that hasn't improved all of a sudden over time, but slowly but surely. You still have patterns and so on, so your production has been evolving for the last 50 years, but the thing is that it's a slow degradation, so in the end your machine doesn't change much. But if suddenly there was a technological revolution and everybody had to start tweaking a certain part of the battery, then you either invest directly in new machines or you just do a random kind of hourly equipment as a service. But as I said, there's a difference in scale between companies and products depending on what you're actually producing, and there's no argument that says

that with the classic production that we have and the machines that have been paying for themselves for years, we're suddenly going to switch to AI, that's for sure

Speaker 1 12:49
Okay, interesting.

Speaker 2 12:55
I think you're going to send me that document.

Speaker 1 13:02
When it comes to external shocks, do you think there has been a shift inside the company when it comes to as a service model pre or post the COVID -19 crisis or the Ukraine war and the willingness to invest in such solutions?

Speaker 2 13:20
I wouldn't say so. I mean, I said, I guess the bottom line for the production plans at (company anonymized) is that the majority of the machines that we have been repaid. So, the worst, what happened during COVID is that, because that's already two weeks, there are shocks that are through different consequences.

Speaker 2 13:39
What happened with COVID, for instance, that we had people that couldn't go to work. And so, we had to stop production at some point in some plans for a certain time. So, we just, you know, stop the machine.

Speaker 2 13:52
And yes, repayment might have been taken longer, but that's it. It ultimately doesn't change much. And what we had at some point is some products went down and some product went up. So, with COVID, for instance, the power tools had the best year ever because everyone's started doing work at home.

Speaker 2 14:10
But yes, you saw less cars, but you saw more power tools. So, at the end, there was production up, production down. That didn't have any very strong impact. On the contrary, the Ukraine, for sure, had an impact.

Speaker 2 14:27
But I would think, what I would say the most external trauma that we have at the moment is the ship shortage. The ship shortage and eventually the US, China, or if you want, put it that way, the commercial saying that they're fighting for their producers and so on.

Speaker 2 14:48
And this actually has a huge impact. And if you ask me, you will start to make sense to say, maybe this very specific machine that we use for chips in whatever product, because there's everywhere, as you know, we could say, as there is a shortage, so we cannot produce continuously, if you want, we have to have phases.

Speaker 2 15:09
And there's some weeks you can produce and some weeks you can't. I mean, theoretically. So, you could say, instead of buying those machines that are pretty recent, we should be having

them as equipment, as a surface, and then pay them when we use them.

Speaker 2 15:23
Could be an idea. Now, I couldn't say if (company anonymized) is going that direction, but that would make sense.

Speaker 1 15:30
So you don't know if (company anonymized) had any thought about implementing such services because of

Speaker 2 15:41
I know I wouldn't be able to say. I mean, from what I've known, no. I don't know everything, you know. We have 400,000 people.

Speaker 1 15:51
Okay, interesting. So maybe Gianluca or, Julian, do you have like any like further questions, or should we go back to some of the questions before, since we kind of like ran through the questionnaire?

Speaker 3 16:22
Yeah, sure. I mean, I would be just a little bit more interested on especially drivers and inhibitors. Obviously, we talked a lot about financial and you also mentioned that it's mainly driven by finance decisions, but do you know are there any other levers which could be considered such as increased sustainability factors?

Speaker 3 16:45
For example, I mean, for example, you did something in recycling plastics. Was there also any reason in terms of using equipment as a service because there's a perception that it increases the sustainability outcome of the company overall or anything like that?

Speaker 2 17:03
Well, no. I mean, as far as I'm concerned, if you ask me for opinion, I don't see anything but financial interest. But I mean, unless you can give me an example, maybe I'm just like the knowledge.

Speaker 3 17:16
Yeah, I mean what literature says currently is that in general because you are using the same equipment and not as often, for example, if the machinery is used only when it's actually needed, the utilization rate is at 100%.

Speaker 3 17:35
And thus it's just the energy consumption, for example, is way less. So, this is a favorite economic and the sustainable outcome. So, this would be a reason.

Speaker 2 17:46
I am. But then that means to say we took equipment as a service like as a common machine. Like you basically have companies that use the same machine.

Speaker 3 17:56
Uh, yep, yep.

Speaker 2 18:01
Okay. Because in my understanding, equipment as a service is basically using, so you as a company, you're producing, for instance, we're talking manufacturing, we're producing on the machine, but we pay them not as, we pay the full price, 100,000 euros on day one, but we actually pay it over time, either by usage, either by monthly fee, either as blah, blah, blah.

Speaker 2 18:23
So this, I mean, this is actually pretty different because, for instance, when you're a production company and you have to fill in your deliveries or expected deliveries, then indeed you're going to use your machine when needed, but it's not going to be a shared machine.

Speaker 2 18:41
Like it's not like I'm producing. And at the end of my line, I need a machine, I paid as equipment as a service, and when I need it, someone ship it in. And when I'm done, they ship it out. Not going to happen.

Speaker 3 18:53
Yeah sure but I think I mean I wouldn't draw the line too strict here. I mean I think there's several models. I was just interested in an overall assumption from your side what is your current expertise, what is your experience, do you ever hear about anything which has an assist environmental impact or anything.

Speaker 3 19:11
If not it's just finance also good just was curious.

Speaker 2 19:18
I mean, from my understanding, it would be just fine. It's, yeah. I mean, still big enough arguments and so far, the biggest, I wouldn't see any other to be fair. Even if I see the idea, but then it's a specific, let's say, equipment, and I would not be familiar with it.

Speaker 2 19:34
Like this sharing thing, for instance. I wouldn't know.

Speaker 3 19:38
Okay, makes sense. Yeah, just going away from the drivers, especially inhibitors. As you said, (company anonymized) is currently not doing it. Of course, we have to finance the site. The plans and equipment can be seen just as an investment.

Speaker 3 19:50
But on the other hand, what are other inhibitors where are you saying, okay, it doesn't make sense for us because we have to reinvent our entire business model or there's just not a request from the customers, we are selling the equipment to?

Speaker 3 20:08
What would you say?

Speaker 2 20:13
So there is also one thing related to production is that, so as you know when you produce anything basically a set of processes that has to be turned into a physical process in a sense like your piece is made like this, a hole that's supposed to be like that with that side set of process.

Speaker 2 20:32
Using a machine is one thing but setting it up is something else. And this is let's say a knowledge that you have to have in your company or you have to externalize whatever but there is an aspect that is not just switched it on, switched it off and in that regards having an equipment as a service also implies that your equipment is some sort of standardized because you can it has to be yours if you want to set it up or configure it properly.

Speaker 2 21:02
And this knowledge is not something you can transfer to from one machine to another like that. I would say that you have to have the machines that you know because you own them sort of.

Speaker 3 21:14
Okay, so meaning also in general that the more, how should I put it, the more sophisticated the machinery is, the more difficult it will be to sell it as equipment as a service.

Speaker 2 21:28
And not only the machine but also the production process. The know -how is not neutral. You can't put it from one machine to another. And there's just one addition to this. This knows - how actually turns into, at some point, you can patent production processes.

Speaker 2 21:55
So when you do it specifically in a specific way, then...

Speaker 3 22:06
Oh yeah, true, makes sense. But are there actual concerns about data privacy and stuff in terms of machinery usage? Because there's also in literature often the point that firms are very afraid that their information can be mishandled by the certification company.

Speaker 2 22:27
also yes, and be working in IoT sufficiently, that no system is entirely safe. So better have it. I mean, specifically in Europe, but even worse in Asia, but I know for sure, you have to have every single piece of data you create on -site on -premises even.

Speaker 3 23:21
It was basically about the customer exploration because we're just because it touched a little bit base on it what are typical customers of equipment as a service as you mentioned. Where you were selling the recycling plastic machineries what are like typical customers obviously small to medium size companies in your case with limited capex but is there anything else is there any similarities in what kind of purchasing structure they have or what kind of machinery that in general would acquire what are the yeah business models do have any insides on that.

Speaker 2 24:03
Yeah, and higher would be pretty complex actually to map all those small companies that would be needing production capacity or would that need a specific machine and so on. I mean, I know that, for instance, I've been in touch with a lot of companies in the Netherlands and you have one guy working in some garage and he's just creating tabletops with one machine and that's it.

Speaker 2 24:27
So it's almost impossible to map, but I would still indeed, let's say, recommend. My opinion is it's way more interesting for small, small and medium -sized companies that are more flexible and that don't have the budget and so that don't need a specific process knowledge, you know, so rather a simple thing when the entire USP of the company is because it's cheap or it's designed and it's, I don't know, it has a specific thing but it's more not related to the production.

Speaker 2 24:58
That said, I mean, I'm from (company anonymized), but you should definitely have a look at new commerce such as Tesla and the lot because they probably have a different way of building up the same cars as we do. But their business model is very likely is different.

Interview Transcript Participant 4

Speaker 2 00:24
I'm one of the three founders behind (company anonymized). I am responsible for strategy, go-to-market, finance, and the like. And what we're doing with (company anonymized) is, we're an enabler of the journey towards Equipment as a Service for machine manufacturers.

Speaker 2 00:48
That is, this is under the term servitization, to support the development towards the As a Service model. In the broadest sense, this means an IoT start-up that has developed a platform that enables machine manufacturers to deliver better after-sale service in the direction of predictive maintenance.

Speaker 2 01:14
But even then, the topic of pay-per -use, pay-per -part models can be handled via the platform.

Speaker 1 01:22
Cool, thank you very much. Yes, then we will start with the first question, and it is aimed at familiarity with the concept of Equipment as a Service. To what extent are customers of machine manufacturers familiar with the concept of EaaS?

Speaker 2 01:39
I would say it's very, very different depending on what industry you're looking at. I would argue that in the field of metalworking, there are sometimes very, very high levels of adaptation, or that people are already familiar with it.

Speaker 2 02:00
Maybe an example. We once did an evaluation with a customer who manufactures machine tools. They conducted a survey among their customers, in which the topic of Equipment as a Service was also included as a quasi-relevance survey.

Speaker 2 02:18
And it was the case that almost 25 percent of the customers of this machine manufacturer said that this is super relevant. About 20 to 25 percent have said it is less relevant. For me, that would mean that almost 50 percent of the customers there can at least do something with the term and classify it for themselves.

Speaker 2 02:40
And that's how I would rate it. I believe that, basically, these types of use-based business models are now, I would say, on everyone's lips, but where there is a certain maturity for digitalization, especially in the industries, I would say that it is already well widespread.

Speaker 2 03:01
What I see as an example or counterexample is the topic of the woodworking industry. There is, I think, the Weinig company with a model that offers this to its customers, but nevertheless the woodworking industry is relatively far behind compared to the metalworking industry when it comes to digitalization topics.

Speaker 2 03:27
From this I derive a rather lower level of maturity, for example a level of familiarity.

Speaker 1 03:36
For those where the level of awareness is already quite high, what do you think has influenced this level of awareness?

Speaker 2 03:46
I believe that there, in the classic mechanical engineering and classic industry, that there often companies have educated the market in this direction, so to speak, in the sense of models in this direction, where they brought early into the market, for comparison, how Steve Jobs made the topic with the iPhone, to propagate the concept of a touchscreen there relatively early on.

Speaker 2 04:17
I think that's an important reason, but also a reason that, for example, the need for this type of model is very, very high in terms of financial flexibility in the industry is important.

Speaker 2 04:35
We can see this in the example of switching combustion engines to electric vehicles. Something is fundamentally changing in the industry. Pushed out of automotive and into metalworking areas.

Speaker 2 04:50
You see, hey, we can't plan that far ahead anymore. That said, buying a machine classic is risky. And that's why I can procure such a machine in an asset service model, for example, and have less risk because I only pay for the utilization.

Speaker 2 05:07
I think these are some of the reasons for adaptation that I could imagine.

Speaker 1 05:14
Mhm. Do you see, would you describe the Equipment as a Service market as a market with, say, a push logic or a pull logic? So, is it more provider-driven or customer-driven?

Speaker 2 05:31
I think you have to differentiate a lot here as well. I think it's rather, or at the moment from the feeling, it's more of a push from the machine manufacturer towards the market, because unfortunately a lot of God is still thought of only in terms of one's own benefit.

Speaker 2 05:51
Such a machine manufacturer thinks to himself, in the life cycle of the machine, I earn more with it. But now more and more manufacturers are also considering, what does my customer actually get out of it? And at the same time, this was now, last month, at a fairly large worldwide trade fair for production technology.

Speaker 2 06:11
And we also have some conversations where manufacturers have approached us and said that our customers want a flexible financing solution in this sense. And then there's the pull out of

the market, which then gets there.

Speaker 2 06:29
But that's just in connection with the fact that non-combustion engines are becoming fewer and fewer. This is very, very dependent on the target market in which you are located.

Speaker 1 06:42
Cool, okay, interesting. Then I would now go to the second point. That's already a bit touched upon, the typical customers of EaaS offers. In your opinion, who are the typical current customers of Equipment as a Service offerings in mechanical engineering?

Speaker 2 06:58
So, I'm exchanging ideas with many, many people who are looking at the whole topic from different directions. And I'm in contact with an expert in the field.

Speaker 2 07:15
And together we have found four archetypes of customers. And these four archetypes, spoken as very, very high-level of course, are just different in the motivation to accept or adopt this business model.

Speaker 2 07:39
And on the one hand, these are the quasi "out-sourcers", as we have called them. So those who are responsible for non-core activities can outsource them. And that then, so to speak, itself, an example is a wage packer.

Speaker 2 08:01
I make something, gummy bears, and send the finished gummy bears to a contract packer and he packs them into the bags. But if I realize that this packaging step is actually not the core of my value creation, I can get this capability internally, procure a machine in a pay-for-use model, for example, and then save myself the logistics routes to the contract packer and back, for example.

Speaker 2 08:28
I've gained an efficiency and I have a flexibility in my production and packaging. Then we have to practice the one who is very, very, let's say, financially KPI-driven, so very balance sheet-oriented, who really wants to make this change from CapEx to OpEx, very financially.

Speaker 2 08:54
Then we have identified the third "technophiles", who is either forced by the market to always have state-of-the-art technology in the yard, i.e. always the latest machines, always to enable the greatest output, so to speak.

Speaker 2 09:16
And the fourth archetype is the "partial utilizer", i.e. the one who knows actually I get along relatively well with the machines, with the production capacities that I have, but there are seasonal peaks and I would like to flatten these peaks by putting a machine in the yard that can be loaded, so to speak, as soon as such a seasonal peak has to be intercepted, for example.

Speaker 2 09:41

For me, these are now detached from the rounds, so the models or the customer types that may come into question.

Speaker 1 09:55
Cool, thanks. What are such recurring common features or requirements of these customers?

Speaker 2 10:02
I believe that the summary of this, so depending on what problem needs to be solved, so it's more of a balance sheet optimization topic, it's a partial workload because I have a seasonal business.

Speaker 2 10:16
It's because I have to meet very high technical requirements and therefore always need the latest. Or it's because I can't do core activities, usually outsourcing, but I can bring that in.

Speaker 2 10:31
And gain more efficiency as a result. So, if you take a look at it, I think DMG Mori does a super, super strong job in communication. If you take a look at all these typical advantages of an Equipment as a Service model for the end customer, you can cluster very, very well and find these four archetypes in it, so to speak.

Speaker 1 10:55
What role do factors such as the mobility of machines play? Yes, maybe also the size of the customer, the size of the markets they serve. What role do these factors play?

Speaker 2 11:14
Well, so the mobility of the machine is actually very exciting for the machine manufacturer. If a machine has a secondary market, i.e. it is standardized in such a way that it could be introduced into the used machine market, then this is very, very well suited for this.

Speaker 2 11:35
This also fits mobile machines. If we take the example of the forklift, this is a very, very standardized thing that definitely has a secondary market and is therefore very suitable for such a model.

Speaker 2 11:52
That's what it's called in the logistics industry. I don't know if that answers the question.

Speaker 1 11:56
Yes, we'll talk about it in a bit more detail in a moment. The third point would be the need for equipment-as-a-service solutions. How high or low will it estimate the demand for equipment-as-a-service solutions from this end-customer perspective?

Speaker 2 12:16
I think that the demand is already quite high, and it will definitely get bigger, because a few, I'll say from Marco's perspective, a few effects definitely speak for it.

Speaker 2 12:36
One effect is the example of the shortage of skilled workers, which is becoming more and more acute. If you think about it, in a classic sales model, I sell the machine and the customer

then has to see how he keeps it running.

Speaker 2 12:54
Either he has a maintenance contract with the machine manufacturer, or he doesn't. But if you think about the fact that service is and is a very, very big part of an Equipment as a Service model, that's, yes, it's going to come to a head very much, because this number of service technicians, for example, is going to shrink and sharpen more and more or more and more blatantly.

Speaker 2 13:23
And then the market as a whole has to look at where these resources are distributed. This is with the machine manufacturer itself or it is with the machine operator. And that alone is just one of the factors that will lead to machine users, i.e. customer machine manufacturers, opting more and more for such models, because they simply don't have the personnel to deal with them, for example, to create the machine.

Speaker 2 13:52
Yes, I think that's a facet of the whole thing.

Speaker 1 13:59
Mhm. Do you see any other factors?

Speaker 2 14:03
I think fundamentally different factors, such as in the direction of climate-related topics. I believe that, in addition to a factor of an Equipment as a Service model, is also the fact that machine manufacturers have access to data, data to improve machines more, to optimize that, also with regard to the issue of energy efficiency consumption of resources with simply certain information then available to carry out this optimization in the process or in the production itself of the machine.

Speaker 2 14:52
These are definitely fakes. And if you think about it or take a look, there is also a much stronger effect in the direction of market consolidation. You can see that many machine manufacturers who are smaller are somehow bought together and brought together in groups.

Speaker 2 15:14
And these are usually very, very financial market-driven effects, where machine manufacturers and companies are grouped together. And that's where they look, like at the start-up, what is somehow the source of revenue.

Speaker 2 15:32
So, it's the transactional sale of the machine or is it the quasi-recurring revenue that can be seen beforehand. And there it is classic to financially driven companies, such as those who buy companies that are interested in setting up recurring revenue models.

Speaker 2 15:52
These are other factors coming here from the financial direction.

Speaker 1 15:57

Okay, exciting. So now we come to industries and machines. Regarding industries, you've just mentioned a few industries. In your opinion, which industries are also predestined for the adaptation of Equipment as a Service?

Speaker 2 16:22
So basically, you see a very, very strong trend. So, I mean mobility stands for itself. We have the issue of energy generation as a very, very important factor. So here too, we are somehow on the road with the company or several companies from this area that manufacture machines and systems to generate electricity from alternative sources.

Speaker 2 16:48
This is also very, very predestined for this. I find it a bit difficult to narrow down the industries, because within these industries there are different prerequisites, so to speak.

Speaker 2 17:05
So, I think everything where such models are already known, that you pay a price before a performance, so to speak, it's an issue. So, in the mobility industry, we somehow have the taxi ride as one of the first solutions in this direction, which is also an equipment as a service model, so to speak.

Speaker 2 17:32
That means I can get from A to B with it. And I think these are markets where it will be very, very easy and the adaptation will arrive much faster. So, where this mechanic is already there for a performance, to pay money for an output.

Speaker 3 17:53
If I may hook in there for a moment, here is the voice from the up. You've just mentioned this very briefly in the direction of construction machinery. To have that on tape again. You would say it's a clear trend in the construction machinery industry.

Speaker 3 18:13
Das da Equipment Services already has a good response. Can you say it this way and that, have you had the experience yourself?

Speaker 2 18:22
Yes, absolutely. In other words, construction machinery is again such a part, such an industry that is very seasonal, for example. Just like the topic of agricultural machinery itself.

Speaker 2 18:39
So, where I am in agriculture, if you carry out certain work as a contractor and if there is such a mechanism that the contractor is paid for a service, then he can also pass on this mechanic in his value chain and not buy the combine harvester, but quasi flexible rents in theory.

Speaker 2 19:06
It doesn't work quite so well when it comes to combine harvesters, because the season in which it is used is very, very short and therefore it would be a low usage. That's the equipment.

Speaker 1 19:24

Exactly, to go back to the, so just mentioned, prerequisites in industries, in addition to the either already existing or non-existent level of awareness of the concept, what other prerequisites would you find to favor such an adaptation of Equipment as a Service?

Speaker 2 19:56
I think that in a market where very, very many players, so it's very fragmented, you tend to see the effect, because when the market is fragmented, it actually means that it's still relatively inefficient.

Speaker 2 20:12
And I think that's what Jose Brunner once said very, very well in an article, that these inefficiencies will be resolved by fragmentation at some point, because companies that don't generate high margins in a sales model, in the classic sales model, are just in competitive comparison, they have less money available to invest and continue to grow somehow, so relatively logical.

Speaker 2 20:42
This means that these very highly fragmented markets are great for this, once you have realized that you are manufacturing as machines, in such a fragmented market.

Speaker 1 20:58
What types of machines do you think are best suited for EaaS models?

Speaker 2 21:06
The machines, so in a classic model, for example, if we are talking about such a paper-use model, then the machine should already be very standardized. It should be as much as possible, so the higher the degree of mobility, the better it actually is.

Speaker 2 21:27
Plus, there should definitely be a second market for it, as I said before. This means that if we then make a comparison of an area, a super gigantic special machine or transmitter system is not super suitable for it, because it was only made for one customer, because it is gigantic in size to bring complex from A to B.

Speaker 2 21:50
And that's one of those factors that stands a little bit against it. Unless, in an as-a-service model, you are prepared to operate a super-large, super-customized system in an operator model and then conclude a contract for the lifetime of the machine, so to speak.

Speaker 2 22:12
That depends a bit on the mechanics of the whole thing. Basically, I think standard, mobile are good factors.

Speaker 1 22:22
What role do factors such as the number of mechanical parts plays?

Speaker 2 22:32
So, the number of mechanical spare parts plays into the, I would say, economic risk of the machine manufacturer, because the more mechanical parts that can break, so the risk stops.

Speaker 2 22:48
If you also understand EaaS as a full-service package, then it is of course quite risky. Exactly, and that also means that you can't monitor every mechanical component, every component, for example.

Speaker 2 23:05
But yes, that would be such a factor that you would also have to take into account in the amount.

Speaker 1 23:11
And finally, what role does the output volume of a machine play?

Speaker 1 23:28
Whether I now have a heavily frequented machine that produces horrendous quantities, for example, or that somehow only has an output of one every week, I'd say.

Speaker 2 23:41
I don't think you can give a general answer to that either. So of course, the more use is theoretically possible, the more sensible it actually is. But I think if it's a machine that delivers a high output, then you tend to go for it.

Speaker 2 23:59
So why was it built to deliver a high output, because that high output is needed somehow. This means that, as a customer of my machine designer, I strive to make maximum use of the thing.

Speaker 2 24:17
And then there is actually an area where as-as-service models may not pay off purely from a financial point of view and therefore represent more of a counterargument to the whole thing. As I said, it depends very much on.

Speaker 2 24:38
So as an example, the DMG Mori has machines that I wouldn't say now that can produce gigantic high output quantities, but already represents a high-performance machine, such a machine tool.

Speaker 2 24:53
And there, too, they have defined an exit criterion in the contract, so to speak, that if the utilization of the machine is so high that I would actually not be worthwhile or would not calculate an as-a-service model at all, that you can then virtually switch from the as-a-service model, if a I buy the machine at the residual value and then it is back to the classic transaction model.

Speaker 1 25:21
Cool. Exactly, let's get to the challenges and concerns. What are the primary challenges you see on the end customer side when using Equipment as a Service models?

Speaker 2 25:35
I think the challenge is often in the pricing or in the contractual design because it is a new concept for many companies, even contractually speaking, certain risks can simply be

presented.

Speaker 2 25:52
So, what we're seeing, I think it's a little bit colored by the fact that we're active in the attic, where you tend to be a bit pessimistic about things. And so, the risks are often touted along the lines of, hey, I don't know what I have in the number or I'm not sure.

Speaker 2 26:18
I think these are the challenges that exist. What is a factor, the next factor, is the whole topic again very, very strongly related to the attic space, I think, where an EaaS service model is somehow to be made available and billed automatically.

Speaker 2 26:42
There must also be a data return channel somehow. Many end customers find this difficult. In other words, there says, yes, my favorite example because of the proximity, because DMG Mori says, if I don't get access to the customer's data, to the machine, then the customer is not a target for me.

Speaker 2 27:03
Although, if I want to provide, it's just not suitable. That's so, I think the points for me.

Speaker 1 27:15
What impact did the Corona pandemic or the Ukraine war have on this challenge? I like to start with Corona first, with it the Ukraine war.

Speaker 2 27:33
I would say that when I look at the successful models or supposedly successful models, they worked very, very well, especially during the Corona pandemic. In other words, a great growth has arisen or a great adaptation.

Speaker 2 27:51
Many machines were sold in this model because that was a driver for it. This is a certain uncertainty in the market. In other words, this has shown the great advantages, for example, that I have a relatively manageable investment risk when I put such a machine on the farm as a customer and I know what happens.

Speaker 2 28:17
The topic of supply chain crisis and so on also goes in a similar direction. I think they had a very, very strong influence on the positive. However, I do not believe that this effect has lasted for a long time.

Speaker 2 28:35
We have come back to business as usual relatively quickly after the economy leveled off a bit during the Corona pandemic. I can only speculate about the Ukraine war factor right now.

Speaker 2 28:57
I would imagine that energy costs have risen very, very sharply. On the one hand, companies have purchased fewer new machines, have tended to use an EaaS model, i.e. for financial reasons, but also for the reason that, in principle or in theory and partly also in practice, a new machine is more energy-efficient, for example with resources, or delivers better quality than I

have to use less raw material, to produce the same product in the end.

Speaker 2 29:46
I don't think the factors that have related to this necessarily mean this whole cyber security issue.

Speaker 3 29:55
Mhm.

Speaker 1 29:56
Okay, that's just a bit overtalked. Drivers for EaaS adoption. What specific drivers are there that you think have driven the adoption and use of EaaS?

Speaker 2 30:14
I think one of the biggest drivers is actually successful models. In other words, the pioneers who have led the way, some of whom also show very loudly how this works and where sometimes customers also formulate that it really works.

Speaker 2 30:37
That is, where such a model, a win-win situation, has emerged, on a financial, technological, climate policy level, then there are definitely drivers who have fueled it, the acceptance of it, also the fact that there is a lot of talk about it.

Speaker 2 31:07
Helps in the enlightenment of the market and of course also the topic of technology, maturity on both sides, both at the machine manufacturer and at the machine user or at a customer of the EaaS service model.

Speaker 2 31:21
The topic of IoT technology as an enabler, I think it's very, very important to recognize that it's getting cheaper and cheaper, it's getting easier and easier to use such technologies, which in turn make it possible to offer an EaaS service model, but at the same time to handle it.

Speaker 1 31:44
And what drivers are there on a micro level, so on a sub-level, which ones come in line?

Speaker 1 32:00
That's a strategic level or competitive point of view. What other relevant drivers are there?

Speaker 2 32:10
In from the perspective is manufacturer or customer's

Speaker 1 32:15
From the customer's perspective.

Speaker 2 32:22
Basically, the topic of uncertainty is a very strong driver. I think there is a good reason why you have included the Corona pandemic and the Ukraine war as factors here.

Speaker 2 32:36

I think these are important aspects that you have to look at from the customer's point of view. Simply a planning uncertainty in a certain direction that you can no longer calculate. For the next five years, I have contracts, I'm a subcontractor and I have contracts with a motorist.

Speaker 2 32:58
This has changed a bit now due to different aspects, be it some crises or be it political decisions. These are such topics.

Speaker 3 33:11
Hm?

Speaker 1 33:12
And you are also welcome to illuminate this again from the manufacturer's side. What about the drivers?

Speaker 2 33:21
Well, I think it's mainly the issue of technological availability or ease of implementation that plays a role in the meantime. Also because of the factor that some models are very successful, some are not, but nevertheless you could learn a lot from it.

Speaker 2 33:42
The financing environment is, I think, very, very important. Now it may be playing into the hands of the machine users, because somehow loans are becoming more expensive and that is definitely a driver for people to look for other financing solutions.

Speaker 3 34:03
Mhm.

Speaker 1 34:04
Do you see other drivers at the company level of the manufacturers, so this is just called a financing aspect, a strategic aspect, more come to mind.

Speaker 2 34:16
I can very well imagine that in a company the pull from the market is simply there as one of the drivers. In other words, the customers themselves ask for it. It starts with how much service is offered, for example, to the sales machine.

Speaker 2 34:35
And more and more the vertical integration between the manufacturer of the machine and the user of the machine. And that that's a definite driver. So, the classic example of just-in-time delivery alone is also a factor of vertical integration.

Speaker 2 34:56
And is also a service and performance supplier. And I think that can be transferred in this direction.

Speaker 1 35:07
Looking at the time, we now have four minutes left according to the plan. Do you have a hard attack after that?

Speaker 2 35:13
No, so 6 p.m., about I would have to go. Ok. Shortly after 6 p.m. Okay, cool.

Speaker 3 35:25
Yes, in general, just as there is already roughly mentioned, financial drivers, of course logically rather, especially on the customer side. You've just spoken in the sense of archetypes, archetypes on the customer side.

Speaker 3 35:42
Could you also name such archetypes for providers, or do you have any very specific suppliers of machines that are actually typical providers that have the same characteristics? This is where we can offer the service.

Speaker 2 36:05
Yes, so I think the archetypes, they were relatively based on different company perspectives, so the financial, the technical, that's my production process and what is my production ecosystem like?

Speaker 2 36:24
I think you see companies that, if you look at the very fragmented markets again, especially when I notice that my machine sales are declining, and the profit margins are getting smaller and smaller.

Speaker 2 36:46
By the fact that somehow, so not, Ukraine war, Corona pandemic, everyone has caused that somehow commodity prices are super high, energy prices are super high. This means that at the end of this sold machine I have the piece of cake that I can never have from it as a profit, is getting smaller and smaller.

Speaker 2 37:07
I think that's such a big factor.

Speaker 3 37:11
Yes, great, no, fits, thanks.

Speaker 1 37:14
Exactly, then we have the penultimate point, the promotion of EaaS adaptation. In your opinion, what measures could EaaS providers take to promote the adaptation of such models on the customer side in the future?

Speaker 2 37:35
So, I think that you should develop all new models with the customer in mind. Speaking again for the DACH market and especially for Germany, somehow an engineering country that classically develops somehow according to a waterfall model and first brings the finished product to the market and then realizes that it doesn't work so well after all.

Speaker 2 38:05
I think that's a very, very important factor that machine manufacturers have to deal with what are the archetypes in my industry, in my clientele, for which customer segments such a model

works and for which it doesn't.

Speaker 2 38:22
And how do I develop a model together with the customer, which then creates a win-win situation in the end. And I think these are topics that are important because it leads to the customer dealing with this model, because he wants to, because he doesn't get something forced, but gets a solution that is better than the existing alternative for his own situation.

Speaker 3 38:53
Mhm.

Speaker 2 38:54
This is very, very soft on such a driver or measure.

Speaker 1 39:03
Exactly, then the last point. Practice. What concrete practical examples do you know of with regard to successful EaaS adoptions on the customer side?

Speaker 2 39:19
That is, concrete companies that have been successful, or where has been successful, or what is the meaning of the question?

Speaker 1 39:30
The companies are taking advantage of the successful Equipment as a Service offerings.

Speaker 2 39:40
So, without naming any specific companies, I would argue that in the area where compressor technology is used, for example, these can be examples. Well, I could name one now, but unfortunately, I'm not allowed to.

Speaker 2 40:10
Not yet at least. Maybe that will change in two or three weeks. Then I can send it to you again. Are you interested in specific companies with whom you can then have further discussions, for example, or

Speaker 1 40:29
We are primarily concerned with the fact that we have seen that there are these well-known examples from Rolls Royce, somehow Hilti, yes Liebherr and so on, which appear to be more successful as providers, but we have little knowledge about how many successful EaaS adaptations there have been on the customer side, i.e. who then use this Trumpf power by the hour or Rolls Royce power by the hour.

Speaker 1 40:56
There is the question, how many companies do you know that use these models successfully?

Speaker 2 41:04
So in our customer base, of course, a few principles, I think it's good because I'm going to mention it again now, because it's the prime example, the people from Bielefeld with the DMG Mori where there are also some stories I think publicly about the fact that companies are very strong advocates of our model, because I think they understood relatively early on,

that you bring a machine onto the market that represents an entry-level model, that perhaps makes sense for a customer segment, that, for example, would like to afford quality for the DMG Mori, but can't and that's why it worked.

Speaker 2 41:53
But I think it's purely public and I think that's very vendor-driven, because providers propagate very, very strongly, that they bring certain advantages for the customers in this model, but still relatively little is known from the side of the users, so to speak, the customer assistant of the model, so I would completely mirror the impression, I'll have to take a quick look to see if this is public somewhere.

Speaker 2 43:02
I just had an example; I know if you have ever had anything to do with SN mechanical engineering. SN? Yes.

Speaker 1 43:13
Nope, but is just noted.

Speaker 2 43:16
I can play you a video about what helps. That's there. I also think that I have at least read in the customer base of Kärcher, for example, with the solution of some success examples or success stories.

Speaker 2 43:41
This means in the cleaning sector, building cleaning and also customers of, for example, Jungheinrich or Toyota Handling, where an asset service model is offered in the broadest sense. It's kind of called short-term rental, but it's actually exactly the same model.

Speaker 1 44:08
Okay, I see. And when we think about these successful projects, what do you think has contributed significantly to the success of each project?

Speaker 2 44:21
I do believe that companies that have done this, have done it successfully, not only wanted to make a marketing gag out of it in the first place, which is often used by machine manufacturers, but have looked at each other in concrete situations and have looked at each other and have looked at whether there are similar customers of this archetype in the customer base, so to speak.

Speaker 2 44:52
I would argue that it was a mechanical engineering that was set up this way and became successful, would argue that the SN mechanical engineering was set up that way. I'd argue that Trump probably isn't necessarily one of them.

Speaker 2 45:09
Just there, I think if you look at the fact that you have a high-end, I think that's one of the most expensive products in the model. I don't know if it worked that well, to be honest, but my gut feeling doesn't tell me that much, because almost an entire process chain may not have been thought of as it should.

Speaker 2 45:36
You didn't look at it, maybe the situation of the customer and a laser cutting machine somehow also includes the procurement of raw materials and quasi the companies work in this microcosm laser cutting machine.

Speaker 2 45:55
So, I think the customer issue is very, very important, I think.

Speaker 1 46:01
So, from my side, the last question, what would such a roadmap or sequence of a successful Equipment as a Service implementation look like for you?

Speaker 2 46:18
Drawing together with the customer, at best, is a good approach alone if you as a machine manufacturer take a look at your CRM which orders or projects you have lost and what the reasons were.

Speaker 2 46:39
If, for example, the majority of people are moving in the direction that it was smaller companies that wanted to buy a machine, but the price, for example, was a factor, then that is an indication that if this segment is large, this number is large, that the digital solution is being developed.

Speaker 2 46:59
This means looking at different customer problems and mapping which form of a service model might be relevant. The technological is actually left out because it is an enabler, but it is not crucial to the success of this model.

Speaker 2 47:25
That is, customer problems, looking at the market, setting up a certain value proposition for a really sharp segment for the time being. And then, logically, deal with the topic of refinancing and then enter into the pilot launch, i.e. to do the whole thing over smaller iterations.

Speaker 1 47:53
Yes, super, super exciting. So, as you are used to, I am very highly information-dense in every statement. I think all three of us listened very intently, mentally ticked off things, and also gained a lot of insights into them.

Speaker 1 48:07
I don't have any more questions.

Interview Transcript Participant 5

Speaker 1 00:00
Thanks again for your time. Quick question in advance: Would it be okay for you if we recorded the interview in the sense of transcription?

Speaker 1 00:00
Yes, sure, that would be absolutely fine

Speaker 1 00:00
Yes, great, great. Exactly, then you are welcome to say two sentences to yourself and then I would start with the questions.

Speaker 2 00:18
Exactly, so, exactly, role, you know, now partner, I've actually been with (company anonymized) for 10 years exclusively in healthcare. In other words, hospital and MedTech as well. We now have a point of contact with your topic.

Speaker 2 00:34
Actually, because some of my customers, especially in the radiology sector, do such technology partnerships. It now also starts with the ultrasound. These are probably the main models.

Speaker 2 00:47
But we helped customers to evaluate something like that economically. Above all, however, I also help the industry to understand customer needs. So, I'm really active on both sides.

Speaker 1 01:39
To what extent, would you say, in your context, are machine manufacturers familiar with the general concept of Equipment as a Service?

Speaker 1 01:56
Is there a general basic understanding in the market? Are most market participants still totally blindsided? What is your assessment?

Speaker 2 02:04
Should I answer now for MedTech?

Speaker 1 02:09
So of course, if you can also bring something into a larger perspective, you can also bring it in, you can always mention briefly, whether it is MedTech specific or general.

Speaker 2 02:19
Well, I can now say MedTech, since it is fully on the agenda, of course, mainly a topic for those who also make investments.

Speaker 2 02:40
So urology, the big machines, ultrasound, are things like that, although now also heard from the USA, also approaches, like monitoring is a service, that's easy because you have a lot of

them, monitoring in the intensive care unit and so on, also comes then as well. For example, LAN is a service, these are things like that, so I don't know, so hospitals just have deficits everywhere and are quite happy if you can take such an initial investment from them, that means also in infrastructure issues, this is now also partly an issue.

Speaker 2 03:15
And we are actually building a diagnostic center in Braunschweig right now, where I am still half involved, which will then be operated very externally. Of course, it goes beyond the one system, but it really is the whole.

Speaker 2 03:34
So, Long Story Short, very present and there is a lot of thought about how to become more successful, what more you can do there. It can also be said here that many are also dissatisfied with the way things are now.

Speaker 1 03:53
Exactly, that is, agenda absolutely known. What would you say about the need for such solutions on the hospital side? Probably big? But above all, if you also look at both sides in the consultation, even the manufacturers of these machines that then provide in the hospital, do they have an incentive to provide that? Is there also a lot of interest? Or is it rather the hospital that pulls a pull?

Speaker 2 04:24
Great interest, so on both sides, because you usually replace an entire portfolio, that's a larger share of wallet usually, long-term contracts, plannable turnover, partly also, so that also means technology partnership, especially if you do that with university hospitals, actually also a little feedback on the product, joint development, so also a bit of know-how generation.

Speaker 2 04:50
They are already interested, in the end, of course, a hospital always hopes that it will save in total, which may be a bit down-side for a manufacturer, but due to the topic of share-of-wallet increase, of course, a higher total turnover is usually possible for MedTech.

Speaker 1 05:06
Yes, cool, so that kind of confirms our current hypothesis, which emerges from the literature in the first interviews. That was because there is actually a strong push market in the Equipment as a Service market.

Speaker 1 05:20
Would you be able to confirm this from your side in such a way that you say that it actually comes from the manufacturers in the industry?

Speaker 2 05:29
The hospitals did not come up with such ideas on their own. They're not that creative either.

Speaker 1 05:34
Yes, okay, great. And if we stay with the whole push topic right now, would you also say that you actively promote such projects as a consultant, strategy consultant and get the ball rolling yourself, or are the machine manufacturers already doing it themselves.

Speaker 2 05:54
Well, I always show customers the option, precisely because we also have customers who struggle with liquidity issues. In the end, however, it is very important that we advise manufacturers neutrally.

Speaker 1 06:13
Okay, good point. Exactly, let's stay with this push idea in general in the market. What drives him? Do you have any specific drivers for customers and also on the provider side that push the positive, the adaptation or simply the demand for equipment as a service, if we now look at a macro level?

Speaker 1 06:35
Is it the competition, because more and more competitors are pouring into the market who have such results and then in the other competition there is simply a compulsion? Or is it technological megatrends, regulatory determination?

Speaker 1 06:47
Exactly, do you have an assessment of that?

Speaker 2 06:55
Yes, we are in saturated markets, but in the end, there is still the question, as I said, share of wallet then also partly again, if you, well, it is yes, if now for example radiology is now again, it is not just the case that you then make the devices available in a customer, but you also make the service complete.

Speaker 2 07:12
Yes. So, you're just trying to attract more customers to yourself. To be honest, that's the main driver. In the end, i.e. to somehow still achieve the annual target in saturated markets service offerings such as technology partnerships can be an option.

Speaker 2 07:27
Yes, on the customer side, there is often the investment backlog that prevails. I can then make a big leap of liberation without having to invest a lot of my own. Then really expertise.

Speaker 2 07:42
My customers have more and more challenges, the devices are becoming more and more specialized and special challenges. In-house MedTech departments struggle to maintain maintenance. You then need more and more, then you need more maintenance anyway, then you can put it all in one hand, so to speak.

Speaker 2 08:01
Yes. So, that said, it's nice, if you get all this from Siemens as an example, it's not cheap either. That's also in a partnership, that's heavy. Some of them are also a bit naïve or I think they are lying to themselves a bit.

Speaker 2 08:18
And maybe I'm getting ahead of myself, I also often see that the organizations are not in a position to evaluate it properly financially. Total cost of ownership over ten years.

Speaker 2 08:30

Yes, these are contracts over hundreds of pages. There you also have, so you have a completely different level of professionalism from a legal department of the Siemens versus municipal hospital, they are totally at the mercy of others.

Speaker 2 08:44
If they come with demands at some point and stuff.

Speaker 1 08:48
Yes, that's super interesting. Let's also mention the topic of the type of machines that are available for this purpose. You just mentioned radiology. What would you say, the degree of complexity of machines, how much does it play a role, what is more suitable for Equipment as a Service, is it the more sophisticated, the better, or is it rather the more standardized, the better.

Speaker 1 09:12
What's your experience?

Speaker 2 09:20
I would have said now that the more complicated the things are, that you need them more, so the support from the OEM, because you can't do it yourself. At the same time, it is then contractually more difficult, of course, to hold onto.

Speaker 2 09:33
So, I think it's just challenging with such complex products, but it's probably that way between the two. So, I'm having a hard time with that, because most portfolios where this happened are a combination of everything.

Speaker 2 09:50
You have a lot of standards, there's still some high-end thing. But above all, I would also say that I believe that the equipment under such partnerships tends to go beyond the quality that you actually need. So, there is upselling potential.

Speaker 2 10:04
So, radiology, at the end, then the customer, i.e. our customer hospital, talks to the users but also the service provider, what kind of device does they need. If you ask a chief doctor, he always has the best.

Speaker 2 10:19
There is so little corrective, which is also a very important thing that our customers always advise, but you have to keep a certain minimum expertise in-house. You are completely at your mercy if you no longer understand what is happening in the house, what technology is behind it.

Speaker 2 10:37
You're already dependent.

Speaker 1 10:42
Yes, totally. Again, with the challenges and drivers, we have just touched on such a macro level, as I said, you already have financial drivers of course very clearly, to put it in detail

again.

Speaker 1 10:56
Drivers at the company level from the provider and the customer side, I would say it's really mainly financially driven or is that in some form strategic, but organizational, marketing.

Speaker 2 11:10
Sure, so now a customer, yes?

Speaker 1 11:14
Customer and provider like to do both.

Speaker 2 11:16
So actually, for okay provider is of course always, especially if you have houses with a lot of prestige or large universities as partners, is that helpful, can you also advertise with it? They also advertise it on their websites.

Speaker 2 11:31
And at the same time, of course, it is often attractive for customers, i.e. hospitals, for the employer brand when you have your new equipment. I would say, can you advertise, we have a full house full of Siemens here, that in any case.

Speaker 2 11:49
Ideally, of course, you will have better process efficiency with better equipment. That's what everyone promises. So, there are still a number of advantages.

Speaker 1 12:00
Yes, great, if we turn the page around you say, EaaS is on the agenda, so it's a topic. But it is also not the case that every hospital or even every provider of medical equipment is already offering this.

Speaker 1 12:15
What are the classic obstacles, where is the shoe currently still pinching mainly in the industry?

Speaker 2 12:23
In the industry, so both sides again?

Speaker 1 12:26
Sorry, sure. Exactly, gladly with my two sides.

Speaker 2 12:31
So, one of the topics that we have for all strategic issues right now is that a lot of hospital executives are busy with survival. Yes, so, yes, the result is liquidity crises. And you can hardly get away with strategic issues.

Speaker 2 12:45
But also, you have a lot of digitalization at the moment, which is also sometimes challenging. Then there is simply a high degree of complexity in the tenders, many of which are deterred,

so to speak, because they do not even encompass it.

Speaker 2 13:00
It's an extremely long sales cycle. This is annoying for both sides. This is also sometimes incredibly complex for MedTech providers. You have to advertise something like this as a public house, most people publicly.

Speaker 2 13:11
These are incredibly complex tenders. I know from Philips that some of them don't even apply for tenders anymore because they say that there are currently difficult chances against Siemens and the effort to apply for a tender.

Speaker 2 13:25
In some things. So, it's more about portfolio breadth. That might be interesting, because they know, for example, that when such an overall portfolio is put out to tender, they simply lack things and that they therefore cannot offer.

Speaker 2 13:43
Maybe it's not so good for the market either, because then you actually say that they are specialists in some areas, maybe they have best of breed. But then they can no longer win the partnership in such contracts because they lack it in other areas.

Speaker 2 13:59
The partners then also partially, but not always. But otherwise, the impediments are. I think the large total amounts, that may somehow still pay off economically per year.

Speaker 2 14:12
But still you have to build a municipal house, that was 40 million euros contract over ten years. You just have to explain that to all the supervisory bodies and them. That's just a very big hurdle as well.

Speaker 2 14:27
I think so often, but that's more of a personal impression. Nowadays in our country, you have to justify yourself more if you have always done something different and if it goes wrong than if you have done nothing else.

Speaker 2 14:37
So now as managing director again, if I just continue to drive my boot, but also to a new device. And at some point, someone says the technology is outdated, then they say yes, it's the same in all hospitals.

Speaker 2 14:48
When I take such an innovative approach and at some point, someone says, but that was a bit more expensive than the comparison, I have to justify myself. So that's what I mean, that's a risk to do something differently.

Speaker 2 15:00
And in many jobs, risk is not actually thanked. That's very bad in the authorities, but that's partly the case under that.

Speaker 1 15:11
Yes, absolutely. A solid point. This will actually tie in with the next question. It is now a matter of promoting the EaaS and also making consulting projects more attractive. And on the one hand, to pick up on that, you say how it pays off, the costs, the high risk.

Speaker 1 15:30
In general, it has been the case so far that in various industries, especially for smaller customers who have fewer investment opportunities and liquidity bottlenecks, etc.

Speaker 1 15:44
And now, of course, you're saying that such a technology partnership will probably end up with a similar volume for the customer. How do you calculate that in concrete terms? How do you sell it?

Speaker 1 16:00
Or what is the main benefit that you want to bring to such a consulting project, so USP consulting?

Speaker 2 16:07
So if we compare the costs or the benefit, or the other way around, it's just extremely difficult to compare. So, you would have to make a baseline, which devices would usually be replaced and when, how long will they still run, what level of quality are you replacing there?

Speaker 2 16:32
Yes, and that's extremely difficult to compare, then to say, because usually technology partnerships and devices are exchanged earlier, because then everything somehow aligns with one fleet.

Speaker 2 18:05
So, what is your core competency? Your core competence as a hospital is often no longer to operate your infrastructure yourself, but to make good medicine in it.

Speaker 2 18:18
And as I said, management have a number of challenges and are then also happy to be able to say, I have now somehow had breakfast off the topic for the next 10 years, which is running.

Speaker 2 18:31
And of course, you can, you can find a number of economic advantages, which are difficult to quantify, but so service level increases and thus better throughput, higher patient satisfaction and so on.

Speaker 2 18:45
So, there's a little bit of stuff to do.

Speaker 1 18:50
Okay, in general, what would you say, would you do more as consulting per se or do you sell more projects to the manufacturers of equipment, or do you mediate more consulting projects where you advise a hospital to enter into such a technology partnership?

Speaker 2 19:12

So not in such a way that we now do projects in exactly this area every day, but rather in such a way that I get involved in a project. But to be honest, the industry's willingness to pay is fundamentally different.

Speaker 2 19:25
So, hospitals are already there, reluctant and would rarely take money into their hands again to have such an expensive contract evaluated.

Speaker 1 19:33
Ja, totally fair. Would you say that such projects also have a higher attractiveness for you, for consulting companies, or an above-average financial attractiveness, basically in the sense of follow-up projects, further support of the project, is there also a need for you to continue to put together consulting projects or is it like any other project in the region?

Speaker 2 20:03
So, I think that's a little bit due to the nature of the business of strategy consulting. Because we're not involved in the implementation, if you're a classic medical technology planner or something, or any other hardware planner, then that's certainly exciting.

Speaker 2 20:18
But for us, it's no different. We would also have more of an economic view of it. It is actually more likely, most of the time, houses are advised on various issues, but in large transformation projects.

Speaker 2 20:33
And then that's just one of several questions.

Speaker 1 20:38
Okay, very. Exactly, if we then address the implementation topic, you have just said that the pure implementation side is not involved, but maybe you still noticed something left and right or still accompanied it to some extent.

Speaker 1 20:50
What are your experiences? Or your level of knowledge, how are Equipment as a Service models initially implemented in the end and, above all, what are, in your opinion, the most important criteria for a successful implementation on the customer side and of course on the provider side.

Speaker 2 21:09
So, it actually starts in the initial phase, with a really neat inventory, what is really needed. Within the framework of needs oriented. I can now rather negative examples, so in a house the electrical supply was not sufficient at all.

Speaker 2 21:33
So in order to install certain devices, or very much the ceiling is not sufficient, the device that is supposed to go in there does not support it at all. In the hospital, you also have a lot of old infrastructure.

Speaker 2 21:44

But then you also realize what kind of complexity is already in the beginning phase if you are supposed to clarify everything beforehand. And then you realize that somehow you can't get devices in there.

Speaker 2 21:56
It's probably important to allow yourself a certain amount of flexibility in the cooperation and to somehow record that in the contracts. When you then create, you have to bring in a device of a different quality that is still worthwhile for both sides.

Speaker 2 22:10
It's hard to plan ahead for the next ten years.

Speaker 1 22:15
Absolutely. If we stay with implementation or in general, we have already addressed drivers, such drivers, and obstacles of the adaptation of EaaS models. How do you want to say, on the one hand the Covid pandemic and on the other hand, if at all Ukraine gets, this need for equipment, that is, service according to service models, has driven or hindered the MedTech area and if so, to what extent and, above all, which drivers would influence it.

Speaker 2 22:48
If anything, economics, yes, both. In the hospital landscape, which has just been tense again, it will be the last few years anyway due to the lack of support from the sponsors, including municipalities and states that have money, because revenues are declining.

Speaker 2 23:08
And maybe that's why this economic factor has become even more important.

Speaker 1 23:15
Yes.

Speaker 2 23:16
Apart from that, there is also a shortage of skilled workers at such a main driver. I don't know now whether it has somehow risen well through Covid, which has been blatantly exacerbated by Covid. I don't know if you can show this scientifically, but...

Speaker 2 23:28
Yes, so also with the experts MedTech and IT and so on. That's awesome.

Speaker 2 23:34
Okay, super exciting. And Ukraine will probably then generally simply get rising, yes, simply uncertainties in the general economic situation and then probably less willingness to invest.

Speaker 1 23:48
Can you sum it up like that?

Speaker 2 23:52
Yes, exactly. So, I know, I'm jumping a little bit in the argumentation, but partly, so the MedTech’s above all, already promise economic advantages, which you can see in the partnership, because more bundling and such, that's of course something that is currently

pulling more again.

Speaker 2 24:06
So because the economic situation is tense for us, it is actually the case that medical supplies, all the consumables have become significantly more expensive in some cases because of all the raw material costs, and this has put pressure on the margins in hospitals again.

Speaker 1 24:22
Are the prices in the MedTech sector simply passed on directly to the customers?

Speaker 2 24:35
Yes, somewhat, but that's the way it is, so you have different logics. If you can show that the material costs have risen, that there is no other way, then it is partly contractually possible.

Speaker 2 24:49
Otherwise, then reassigned every few years after negotiation and thus definitely followed.

Speaker 1 25:04
Yes, then I would like to talk about practical examples. As I said, you said to yourself that this is one or the other project accompanied by such a technology partnership. Exactly, if you can, what concrete examples would you have of where such a successful technology partnership works?

Speaker 1 25:22
And if so, what do customers and vendors appreciate about this technology partnership, if you can give a few insights into what makes a project successful?

Speaker 2 25:33
I think the most popular example is the Braunschweig Municipal Hospital and Siemens. They had an old radiology park, dissatisfied doctors, weak MedTech department.

Speaker 1 26:16
Okay, great. Very cool. Otherwise, I want to take a quick look again to see if I can think of something. Otherwise, it's time for a first grind when my two colleagues ask if they already have the first questions that have now arisen from the conversation.

Speaker 1 26:34
So, Julian and Jonas, feel free to hook in if you have something.

Speaker 3 26:42
So, from my side there are currently no questions or if you wouldn't like to deepen thoughts. Great insight in any case. Thanks.

Speaker 1 26:59
Jonas else?

Speaker 4 27:03
Yes, exactly, maybe from my side again the question regarding implementation on both sides. Are there certain steps, such as a kind of checklist that must first be checked whether such a

model is feasible at all?

Speaker 4 27:19
Or is there a certain approach that is taken before such an implementation model can be imagined in principle?

Speaker 2 27:31
Industry page with security. On the customer side, there is a lot of workshop production. And there's a lot of the first time we do something like that. That's something where we're partly involved, to think about it, it makes sense to calculate it at the beginning.

Speaker 2 27:50
It's not so black and white at times. So now, for example, if someone goes on a sieve in partnership, it still goes partially. You have a chief physician who has been assured of a certain device by Philips in his contract and he only wants to work with it because he has been learning on it for 20 years.

Speaker 2 28:08
And then you just have to make something around it. So as an example. So that's nice, often needs a lot of individual solutions. And on the industrial side, what I get from the corporations is of course also, so maybe this fits your question relatively, high approvals would be, because they are simply blatant volumes.

Speaker 2 28:32
And the contract doesn't pay off. Over the next ten years, you really have a topic in your P&L: So just completely different release limits up to the C-level. Because there you have a high once or with a contract that binds a high volume in the next few years.

Speaker 2 28:46
Of course, I have to do the math. Yes, and yes, as I have already told you, at the beginning this consideration, how competitive are we when tenders are really made, I have to think carefully at the beginning what we are shooting at, because there is a lot of energy simply going into these contracts.

Speaker 4 29:07
So, there are big hurdles, especially in this MedTech area, but also bureaucracy or personnel, now it's also the doctors in the end, who then oppose or counteract certain things or maybe also on the side that I have managed to create here.

Speaker 2 29:27
Is there already rather exactly, so very different, depending on what the so those who are of course set to the product, which manufacturers they like and also what kind of house they are, the private hospitals just wave something like that through, they just say that's how it is now. But in public institutions, this does play a major role in the decision, universities, i.e. the university hospital, which also made a lot of commitment to MedTech in their appointment commitments.

Speaker 2 29:55
What you have agreed on is not as flexible as management to tell them otherwise.

Speaker 3 30:33
Then I'd try again to maybe make it a bit broader. To what extent can you say something about it, such as the familiarity of Equipment as a Service outside of the MedTech industry, how it exists?

Speaker 2 30:56
This really has to think about it. So, I can really only say and repeat a few standard phrases that you usually read. But my impression is that as a service is totally increasing in this area.

Speaker 2 31:11
And that in a lot of companies you simply ask yourself, what is my core competency and often infrastructure operation is somehow not one of them. That doesn't quite suit you now. We are getting more and more involved with such Contract Research Organizations.

Speaker 2 31:30
We do a lot of DDs, so they really want to be R &D as a Service. Or contract manufacturing. Of course, that's not exactly your topic right now.

Speaker 2 31:45
That's how I would put it, maybe in the respective expert role. And that also fits in with this topic. But I would give you a very sweeping statement now.

Speaker 3 31:56
If we now focus only on mechanical engineering, there are certain areas where you say that they have too high potential for Equipment as a Service.

Speaker 2 32:20
I think these basic rules come to mind. Complex machines have to develop here, where he says that it is worthwhile for the individual to no longer have the expertise to keep things running, to maintain them, and to operate them.

Speaker 2 32:42
Then, of course, partially, that's not essential, that's basically things where you say, these are special applications that you don't need often, where it's just worth sharing, maybe between different providers.

Speaker 2 32:57
This is now a classic laboratory in our hospitals, you have your own large laboratory and send a few special parameters, send them to some university laboratories, because it is not worthwhile to have the equipment yourself.

Speaker 2 33:09
But we are also building in Braunschweig, for example, where a complete laboratory is provided and maintained by the manufacturer, there is still our own staff in it, but at least then the laboratory lines will also be operated and also shared between several hospitals.

Speaker 2 33:27
That might go in that direction, but you can't deduce it from the fact that everyone has to do it that way now. So, because I can't think of such concrete example parameters.

Speaker 2 33:44
As I said, does self-production make more sense somehow? Does it still make sense for me to have expertise in this area? Sure, it's great for make or buy, quantification and really, this question is strategic.

Speaker 2 34:01
Do I really want to give this out? So, what should others do and what shouldn't they do? That's it, I have a certain, maybe it's Covid, maybe that's another point, I think, there has been a sensitization in the industry that things can always go differently.

Speaker 2 34:17
We have been on the road with global supply chains for years and you have already noticed, especially in the health care sector, that real things were simply no longer available, and I could imagine that this also sensitizes a bit in the direction that you say, for which things do I not want to make dependent on external ones?

Speaker 2 34:35
Well, automobile is also just for example, that's where the factory shut down because parts from the Czech Republic are missing.

Speaker 3 34:49
So, my last question would be about machines. What types of machines do you think would be best suited for Equipment Asus Service models?

Speaker 1 35:07
Industry-wide.

Speaker 3 35:09
Yes.

Speaker 1 35:09
Mhm.

Speaker 2 35:34
Mhh, you can inspire me, what are you discussing right now, what are we saying in others?

Speaker 3 35:40
Complexity was a good keyword. One hypothesis would be the number of mechanical parts. The higher the number of mechanical parts, the more wear and susceptibility, the more need for expectation.

Speaker 3 35:57
That would be a hypothesis. Another impetus we got was volume, which we also called. How heavily the machine is frequented and, as I said, with a high number of mechanical parts, it then becomes all the more critical.

Speaker 3 36:14
We still had the point of mobility before machines. Exactly, those were some example points.

Speaker 1 36:26
So actually, the statement, the more standardized the machine. Especially if it has a second market, if it can also be used again by another company, then it is much easier to serve it naturally, i.e. if it is super individual, and it only does something for one company.

Speaker 2 36:42
That's the industry perspective, of course, that's right. Of course, I'm very much on the road for the customers, but it's totally logical, that's true.

Speaker 4 36:49
Okay.

Speaker 2 36:50
That's right. And then, to be honest, probably also to take where for now I also find staff, so maybe not always, probably, I don't know, here look at what for me is not always just the question of which product which service goes, but also which location goes.

Speaker 2 37:09
Because then I have to, yes, so if my hospitals don't offend anyone here, but since there are no medical technicians in the East, the medical technology company still has to find someone who goes there regularly, so he won't always make it easy for himself.

Speaker 2 37:32
That's the main topic we discuss every day, which is also just so blatantly moving the industry right now.

Speaker 1 37:38
Last topic, which just came up to me spontaneously, because this was also a topic at one time, in other interviews and is probably not insignificant for the health sector. If a service model is used in a technology partnership, the operator of the companies, i.e. the machinery, will also draw a lot of data.

Speaker 1 37:56
What is the issue of data security and the influence or danger of data embezzlement in hospitals in such a service context? Is that an issue?

Speaker 2 38:08
So, there is a sharp distinction between operational data and patient data. That's how you're usually allowed to make it, and actually not the diagnosis or something like that. What you have at Siemens now, for example, I know that they provide you with such a cloud, you can see, usage map, devices, utilization and stuff, everything.

Speaker 2 38:30
That makes sense, of course. Yes. But those who are actually in diagnoses are not allowed to leave the house.

Speaker 1 38:38
Super, so even the scan recordings, which are then not submitted to the manufacturers.

Speaker 2 38:47

So I know the individual manufacturers who have such data, because it was somehow stored on the devices and stuff like that, but the huge issue is also because you say second market, if there is something, then you also have to break the hard drives before you sell the machine, sometimes destroy a little bit, which then totally reduces the value.

Speaker 2 39:08
Data protection is a huge issue with such data.

Speaker 1 39:13
Yes, cool. Yes, otherwise from my side it would definitely be that with the questions. Then definitely important if you have any other questions. We can still answer something for you somewhere.

Speaker 2 39:33
So, I think that's quite interesting, because we just recently had a discussion with a large lessor who also wants to get more into MedTech and hospitals. But of course, that doesn't go as far as you think now.

Speaker 2 39:47
But that's the first stage, that they say, I'll take the financing, or I'll just turn into investment, into OPEX. But what you're describing here is really a service component to go with it.

Speaker 2 40:00
Exactly. And here again the question arises, are the industrial manufacturers really the better financiers? So, they do a lot, you shouldn't look for a partner for the one who takes care of the finances and I then do the service.

Speaker 3 40:19
Yes, just as it was done by Trumpf and Munich Re, that's the prime example of Trumpf as a kind of IoT implementation partner and then Munich Re as a financing partner.

Speaker 3 40:31
And I think Commerzbank is also active in this area.

Interview Transcript Participant 6

Speaker 2 00:46
Then yes, would you like to introduce yourself please?

Speaker 1 00:50
I have been working at (company anonymized) for over a year now with a focus on trend and innovation management and am also in the function of Chapter Lead for Advanced Manufacturing and Digital Innovation and work at the interface of (company anonymized) and Adventure on the topics that go into mechanical engineering and look at topics from digital strategy to the implementation of MVPs.

Speaker 1 01:28
Before that, I was managing director of an Innovation Lab in Nuremberg for three years and before that I managed various third-party funded projects at Fraunhofer and Friedrich Alexander University and also did my doctorate in business informatics, with a focus on service systems engineering, and before that I studied industrial engineering with a focus on mechanical engineering.

Speaker 2 01:57
Nice to have you with us. Then I'd just give it a go. The first question deducts a bit on the familiarity, familiarity of the Concept Equipment as a Service. To what extent are machine manufacturers' customers familiar with Concept Equipment as a Service?

Speaker 1 02:20
I would say less in terminology. So, if you say you have their job then do it, then it is important to you that your stuff works, how you name it and in what way it is delivered is often quite irrelevant on the customer side.

Speaker 1 02:45
I'll give you an example of what we had with our plastics manufacturer. They have plastic sheets made of thermoplastics, and sensors are embedded in these thermoplastics.

Speaker 1 03:03
These plastic sheets are used, for example, in paper machines and these plastic sheets wore out. When the plastic sheets are worn out, they get warmer because they are simply not as thick anymore and you can then see that these plastic sheets need to be replaced.

Speaker 1 03:26
That means for the paper machine operator it's just like that, you have a maintenance contract for these plastic sheets somewhere and they say for them, it makes sense at this point, but also makes sense above all, because the plastics manufacturer does a lot of other things around the machine, so they also optimize the machine and then it's basically a component of this higher-quality value-add service, when it comes to replacing those plastic sheets.

Speaker 1 04:04
Maybe you can also give me a brief explanation of your understanding of Equipment as a Service, then I can sort it out in the further course.

Speaker 2 04:12
Yes, this coincides significantly, in the end Equipment as a Service, that the manufacturer remains the owner of the machine and offers the machine at a different pricing system, i.e. either subscription based, availability based, or performance based.

Speaker 2 04:31
Of course, this is also possible with a corresponding service level agreement, i.e. the manufacturer as the continued owner of the machine takes care of the complete service life of the machines, repairs, spare parts, etc.

Speaker 1 04:50
Yes, okay.

Speaker 2 04:50
Well, maybe because you just mentioned terminology. Perhaps under which terms is this better known to customers?

Speaker 1 05:09
Keyword: Predictive maintenance comes up again and again in this respect. It's not at the product level now. I would say that it is often sold to customers as smart products in some way, by saying, well, they often think as in products.

Speaker 1 05:27
If you have one, it doesn't matter, even if you buy a machine, then it is first and foremost a product for the customer. And if the product is smart and replaced accordingly, then it is a smart product.

Speaker 1 05:39
Smart Product Services, for example, is the terminology that we also took away from the customer in this way. IoT platforms are also often mentioned in this regard. Although this is not completely geared to the business model, customers are still thinking here, often relatively pragmatically, especially in the mechanical engineering segment.

Speaker 1 06:07
It's not about how things are named; it's about having a value-add somewhere.

Speaker 2 06:14
Exactly. Okay, cool. Super. Then we move on to the typical customers, i.e. the end users of these EaaS offerings, which are then offered from the machine station. From your point of view, who are the typical current customers of Equipment as a Service offered in mechanical engineering?

Speaker 1 06:36
So, from the current point of view that I have, I can now start by saying that it is paper machine manufacturers, for example. But it is also the topic in the mining sector.

Speaker 2 06:54
Mhm.

Speaker 1 06:55

Agriculture and wind turbines, for example. At least that's the thematic intention of our plastics manufacturer, which we've just looked at. But then there is also this topic, if you think about Siemens and Schäffler, for example, we also had a nice third-party funded research project on the topic of where machines are actually located.

Speaker 1 07:31
And Schäffler partly had the internal constellation that they distributed a lot of machines all over the world. Any rotary table storage machines, with which you can then also produce rotary table bearings.

Speaker 1 07:49
They're from DMG Mori. And then it is actually the corresponding plant operators who operate plants worldwide. They are very big ones who say, yes, I want the system to run, I don't really care how he manages it.

Speaker 1 08:10
This means, for example, someone like Schäffler or the whole automotive topic is of course predestined for Equipment as a Service offers. But customer segmentation is actually more interesting when you approach the many, many smaller customers.

Speaker 1 08:31
And that's where it's the topic, if you look at the features, then it's the topics where the customer doesn't necessarily want to and can't do it himself. In other words, the provider of Equipment as a Service must be sufficiently present and relevant in the value creation system of the respective customer so that such solutions can be legitimately offered at all.

Speaker 1 09:04
In other words, if you only insularly say, I want to replace a plastic plate now, then the issue itself is more associated with higher administrative effort on the part of the customer instead of simply doing it yourself.

Speaker 1 09:18
But if you say that you are optimizing the surrounding system and you have a larger scope and you are more integrated into the system of the respective customer, then you come here to a legitimate starting point to think about such topics.

Speaker 1 09:34
This means that the typical customer of Equipment as a Service already has a relatively high interaction rate with the providers on other levels.

Speaker 2 09:50
Can you think of any other features? Or requirements?

Speaker 1 10:01
So, there's still this topic, depending on which direction you're going, how far down streamed you actually are. So, in order to outline the whole value creation system of mechanical engineering, it is also important to know that there are apparently also relatively many dealers.

Speaker 1 10:22

That is, there are people who simply trade in machines or only deal in materials. These are actual, but not actually customer groups. This means that it is exciting to actually skip the dealer and to approach the customers directly via the dealer.

Speaker 1 10:40
This means that Equipment as a Service offers are not relevant for dealers. These are more relevant when it comes to going to the retailer's customer or to the customer's customer, who then stands in front of the retailer.

Speaker 1 10:54
And that's definitely customers who don't fall into the segment that is relevant. On the other hand, you have everything that is very remote in some way. In the case of Equipment as a Service, these are topics that become relevant in the mining sector in some mines in the Atacama Desert or in wind farms that are located in the North Sea or in ancillary equipment that is located in some mountain range, when it comes to any meteorological observations.

Speaker 1 11:39
Although lately I have little insight that it's just said that way when it comes to what predestined areas of application are. Everything that is difficult to reach actually plays a role.

Speaker 2 11:55
Thank you. Comes to the need for the EaaS solution and again also from this customer perspective. How high or low would you estimate the demand for Equipment as a Service solutions from a customer perspective?

Speaker 1 12:14
So, the immediate need is mostly low. The demand, if you manage to bring in a higher customer loyalty and the legitimacy to offer such solutions, then rather high.

Speaker 1 12:35
What we have observed now is that many customers do not recognize the relevance of such solutions for themselves at first. Rather, there is an increased defensive attitude when it comes to having any software solution in one's own factory halls of which one does not know what data is flowing.

Speaker 1 12:59
But if you put this in a larger value-added context and can legitimately say that it makes sense, then the need is already initiated again. As I said, the initial demand is usually rather low.

Speaker 2 13:17
We've just talked a little bit about that. We would like to deepen this here, the topic of industries and then also concrete machines. What industries do you think are showcased or well suited for the adoption of Equipment as a Service?

Speaker 1 13:40
Do you have a categorization of the level at which you would outline the industries?

Speaker 2 13:50
Very high level for the time being, so what I just said from the field of energy generation or

pressure was yes, a I think another thing you mentioned or Automotive, so on that would be more than enough

Speaker 1 14:13
So of course, you also have the chemical industry, when it comes to containers that are naturally chemically tackled, you have various corrosions due to chemical stress and also corresponding wear.

Speaker 1 14:38
Therefore, chemical industry, you have pharmaceutical industry, which is similarly process-oriented. It depends on where you attack and how you enter the ecosystem. You then have the typical of manufacturing machines, i.e. everything that is basically on the move in the steel processing industry, when it comes to cutting things to shape and saving all possible forms of processing, turning shops in the direction of metalworking industries.

Speaker 1 15:28
The plastics industry, by the way, rather not, it's more about really getting plastic to the customer, whether that's a big equipment as a service right now, that's often rather less relevant.

Speaker 1 15:50
I'm sure you can still see aviation, but the Royce theme is a very old one, it's the prime example of what Equipment as a Service or Servitization actually means. Then there are all the regenerative topics around wind turbines, around photovoltaics, these are all things that need to be maintained regularly.

Speaker 1 16:17
I would outline it like this, so these are the industry, where it definitely makes sense, where you can also build sensible business models out of it. In other words, everything where wear and tear of equipment ultimately occurs, on the one hand, but also where it becomes extremely expensive when downtimes are generated.

Speaker 1 16:38
But this is also an old topic and also not rocket science that can be calculated, but also, for example, in the oil drilling sector, if an oil rig is at a standstill somewhere because the drill head is in the bucket, then it comes to a standstill and simply costs the company an insane amount.

Speaker 1 16:58
Just like a wind farm with high investment costs, you can't really afford to let it stand still. The criticality is there. With a very, very slow plastic production machine, you can see a good amount of time in advance just by looking at it that it fails and if it fails, it's not so bad.

Speaker 1 17:21
It's more about the topics of critical infrastructures and infrastructures because they are just really expensive and usually remote.

Speaker 2 17:33
Cool, exciting. Then there are a lot of interesting points that we have heard before, but also a lot of new points. That's definitely very cool input. In your opinion, what types of machines

are best suited for Equipment as a Service models?

Speaker 1 18:00
Machines that usually already have the appropriate connectivity capability. There are different data formats, ODB, OBD, I don't know. In any case, it is these connection formats that make the machine intelligent from the start.

Speaker 2 18:24
Mhm.

Speaker 1 18:25
For example, Siemens has made an attempt to make the existing PLCs, which are installed in all kinds of machines, usable and then extract data from them.

Speaker 1 18:43
At that time, you deployed the Siemens Mind Connect Nano Box for the retrofit topic, which in principle makes the data from the Siemens PLCs usable in a plug-and-play-like manner and then also uploads it online.

Speaker 1 19:03
Of course, it's much, much easier if you already have the appropriate intelligence in the machine, where you can then derive the data. In the research project, we also had the topic of which data points are relevant in this respect, and in the case of the DMG Mori machine, for example, the topic of finished cartridges was filling level.

Speaker 1 19:29
A thing is actually a very simple use case, but if the finished cartridge is empty, it has to be replaced. It's only when the machine runs empty that it's just broken, which isn't a great topic.

Speaker 1 19:43
But even there the machines are what the machine qualifies, that they have relatively simple data points as a basis to be able to start with the topic of Equipment as a Service, because there is often far too complex thinking and in some data analytics topics.

Speaker 1 20:08
But what is important in general, when it comes to the diffusion of such topics, is to demonstrate the legitimacy of Equipment as a Service in the case and to go into it is then easier and more striking in the penetration if such a machine already contains the data points with which you can quickly do something.

Speaker 1 20:32
These are, I would say, not necessarily paper machines, because they are highly complex and customized. At best, they are machines that are 100 or 1000 times in a factory hall, which all work perhaps a bit differently, but also eject the same uniform homogenized data points.

Speaker 2 21:01
Okay, exciting. How would you rate factors such as mobility and susceptibility to repairs?

Speaker 1 21:20
So when it comes to mobility, then... So, by mobility, I want to see, for example, some kind of

mine excavator or some kind of dump truck. What do you mean when you talk about mobility in machines?

Speaker 2 21:35
So, a machine that is quite easy to move from A to B, so that it can be built at the customer's site and it's not a very high effort or maybe I can't even move it once I've set it up.

Speaker 1 21:51
Mobility actually plays a subordinate role in the view, because normally it is the case that when a maintenance or repair or maintenance is carried out, the corresponding plants fly in and bring the stuff they need to repair it.

Speaker 1 22:09
I haven't really noticed the reverse approach yet. And what do you mean by susceptibility to repair, that was the second dimension that you had?

Speaker 2 22:21
Exactly if that would be the criterion, for example, the sum of mechanical components in the machine, which could then possibly increase wear or wear risk somehow.

Speaker 1 22:36
Mhm.

Speaker 2 22:37
that it would be more attractive or could be more attractive to offer such a model because they are simply more vulnerable.

Speaker 1 22:46
You can argue that in two directions. You can say the machine is more vulnerable. That means you'll have more work to do to fix them. On the other hand, it is also the thing that you might have difficulty making a valid business model out of it, because the complexity is then correspondingly high and also becomes incalculable for you.

Speaker 1 23:18
That said, I wouldn't make the susceptibility to repair a criterion either. Above all, if you look at it in comparison with the competition, you will always take the one that has the lowest failure rates from a purely statistical point of view, similar to the breakdown statistics of cars.

Speaker 1 23:39
There are also people partly guided by what the breakdown statistics look like and then you take what has few breakdowns, to exaggerate that with an Equipment as a Service business model is probably not sustainable.

Speaker 1 23:55
That's why I'd rather talk about the low risk of dramatic failures and go over the quantitative business cases rather than the machine itself and the quality of the machine.

Speaker 2 24:20

Okay, cool. Now we come to the challenges and concerns. What primary challenges do you see on the customer side when they use equipment as a service model from manufacturers?

Speaker 1 24:36
If you're already using it or...

Speaker 2 24:38
think about using them.

Speaker 1 24:40
So when it comes to thinking about it, it's just the topic, the value adds, that's always the thing. That you should already have the feeling on the customer side that you definitely have an advantage here.

Speaker 2 25:00Hm.

Speaker 1 25:01
Compared to the current constellation you have with the provider. In other words, it has to be so attractive to enter into a contract with the customer in which you no longer own the thing and can no longer write it off and can no longer rebuild it yourself, in relation to the costs, that you tell the customer, I really get involved.

Speaker 1 25:33
And to present this utility value so consistently is actually the art.

Speaker 1 26:18
So, you're not the only one who is there in your customer's work. In other words, the customer has nothing to do with 15 different equipment-as-a-service contracts with 15 different providers.

Speaker 1 26:34
He usually wants to buy the stuff once and is happy with it and builds his empire the way he wants it. Therefore, as I mentioned at the beginning, the provider must be so deeply involved in the customer's perception and be anchored in its processes that it is seen by the customer as a natural extension of the business model and not as a hard-fought equipment-as-as-service initiative.

Speaker 1 27:13
Because mechanical engineering simply ticks differently than the software business due to the highly complex processes, where you say, well, I'm going to download Microsoft Office or some software suite, because you're totally used to things being online somewhere, of course.

Speaker 1 27:33
And run on the Internet, and then just install it on his PC. And there is still a pretty big difference between the software world and the hardware and mechanical engineering world.

Speaker 2 27:48
What influence did events such as the Covid pandemic or now the Ukraine war have on this challenge or concerns among potential EaaS customers?

Speaker 1 28:05
So, I would assume that it is an indirect influence, which is driven by the fact that companies are also more oriented towards digital strategies. With our customers, it was already the case that more was done in the direction of digital strategy and digitalization, and this runs through the entire company.

Speaker 1 28:31
I wouldn't consider it singularly relevant that this would have given Equipment as a Service in boost. But such things are also taken into account in the entire transformational environment, which means, for example, with our customers.

Speaker 1 28:50
The digital strategies were outlined in very limited outlines. They talked about Digital Administration, Digital Products & Services, Digital Production and Digital Sales. Along all these 4 dimensions, more was also done by the Corona pandemic, just in digital administration, so that people could work from home.

Speaker 1 29:20
In the course of this, appropriate infrastructures were created, which make it possible to set up a web shop, for example. Then more thought was given to it, now we have this, we can then start from the web shop, fill the thing sensibly.

Speaker 1 29:37
Then you get digital products and that's how you proceeded iteratively here and already saw this train of Covid as an opportunity to drive certain things forward.

Speaker 2 29:54
Do you also see such or similar influences from the current Ukraine war?

Speaker 1 30:04
That's totally ambivalent, I have to say. So those companies that have a defense division will make more profits in the defense division. On the other hand, of course, there is also the whole issue of natural gas, crude oil, and energy, which also poses challenges for companies, especially in the mechanical engineering sector.

Speaker 1 30:32
But this is more of a major macroeconomic issue than it would have an impact on Equipment as a Service. You can put forward the thesis before you buy a machine that you are more likely to enter into a maintenance contract.

Speaker 1 30:53
Especially in the capital goods sector, you are already noticing that people simply no longer buy large machines that require several million euros of investment volume. One could argue that such macroeconomic influences make equipment as a service more relevant in order to avoid investment costs.

Speaker 1 31:19
But I can't say whether this has a concrete influence or not. This would have to be investigated.

Speaker 2 31:26
Yes, ok, cool. Let's move on to the drivers. Only with an eye on time. Is it okay if we imitate until a quarter? Or do you still have a hard stroke? I have, wait a minute.

Speaker 1 31:37
Yes.

Speaker 2 31:43
Okay, cool. Exactly, then we come to the drivers for the adoption of Equipment as a Service. Are there any specific drivers that you think are driving the adoption and use of Equipment as a Service?

Speaker 1 32:04
There is, of course, the very simple driver of lighthouse projects, where you can say that you have already had lighthouse projects in a certain way in the industrial environment, where it is quite clear what equipment as a service brings.

Speaker 1 32:20
That would be a driver that is self-designed. But as I said, this is also the issue of high interest rates and inflation, which is also a driver, i.e. above all high interest rates, which can also be a driver, because you simply have to act differently towards lenders.

Speaker 1 32:48
You can't invest the way it was in the past. And you're more likely to enter into a service contract than to buy new equipment. If you talk more about the specific drivers, it is above all this topic of customer intimacy, so I would actually put it in a nutshell, as a catchphrase, that you need a higher customer intimacy towards the customer at many different corners and ends, in order to then in principle also wrest the trust from them to forward data from their own factory hall to the corresponding provider.

Speaker 1 33:41
This means trust, customer intimacy are topics that are very important. Now you can also include topics around the whole topic, around customer experience, where you then think about what your customer really needs in a customer-centered way.

Speaker 1 34:02
And that's actually what is most likely mentioned by the adventure colleagues, to think up the topic from the customer. Which often doesn't revolve around the classic CX topic, but about the fact that you don't see yourself in sales as saying, hey, what machines will you need next year, but that you say, what challenges will you face next year and how can we solve this together and co-creatively with you.

Speaker 1 34:38
And that's just a different kind of approach and that's where it's also about the fact that you have different digital channels in the direction of your customer. And about this part, old-fashioned sales channel, where you call people when you have a web shop, about customer success management, where you say, I can now calculate when the customer needs what, about this ecosystem and about this constellation you can then say, yes, logically I now bring the topic of Equipment as a Service as a component into this very large service system and don't have it as an insular solution, which is distributed by telephone through the sales

representative.

Speaker 1 35:28
So that's a driver that's relatively important, I would say, to build this entire immediate service system with different components.

Speaker 2 35:40
Cool. And then again, the question, what influence did events such as the Covid pandemic or the Ukraine war have on these drivers?

Speaker 1 36:00
Yes, with Covid, when I think about the last topic I said, it's also about the fact that certain structures have changed from now, in the extreme case, a sales department that travels across the country to a more digitized sales and customer relationship.

Speaker 1 36:26
Again, if the system, i.e. the value-added system, is fundamentally more digitalized, you also have fewer problems offering a digitizing service to the customer. That's definitely the case with the Ukraine war when it comes to acceptance.

Speaker 1 36:53
Yes, again the topic of energy prices is probably higher that the acceptance will be higher if you don't have to buy the stuff. I would say so, and in certain industries you will also be there, so in defense the acceptance will probably be higher, because there is also more money to deal with innovative topics right now.

Speaker 1 37:20
But even if you think that other branches of industry, i.e. in the capital goods industry, are affected by not making margins, there will most likely be a rethink.

Speaker 2 37:36
Okay, cool. Then we come to the penultimate point. Promoting Equipment as a Service Adoption. In your opinion, what measures can equipment as a service providers take to promote the adoption of such models in the future?

Speaker 1 37:55
Will be very high times subtitled with the topic CX. So, to really put the customer at the center and along various measures, one can really be a customer journey mapping, to look at what are your touchpoints with the customer, how does your customer in turn intern with his customers and to map that out in this entire constellation around the customer.

Speaker 1 38:33
And then to look at how you can offer customers the optimal customer experience for them, customers can also outline the different channels, in order to be able to say at the end of the day, yes, these are now a wide variety of measures in which the EaaS topic is then a facet.

Speaker 2 39:03
Okay, cool. You've already mentioned a few practical examples. Perhaps you can briefly say explicitly again, i.e. what concrete practical examples of successful EaaS adoptions are known

to you, i.e. on the customer side.

Speaker 2 39:19
So really, what customers are using the EaaS services from manufacturers?

Speaker 1 39:27
So, literature is the example of Rolls Royce. This is a relatively old example. If you think of the topic in the direction of automotive, then all the things are also a BMW or a Mercedes or even a Tesla.

Speaker 1 39:55
In the meantime, you can also see it as an EaaS topic, because the cars are highly networked and accordingly report when you need a service.

Speaker 2 40:06
Hm.

Speaker 1 40:08
Other concrete practical examples are just what we have from the current customer. The topic of paper machines, the topic of mining, when it comes to vibrating plates, the topic of agricultural machinery, where you also have some kind of conveyor belts, for potatoes and what for yourself, then you also have this topic from your own history.

Speaker 1 40:41
How do I want to describe it? Yes, smart cartridge replacement in work lines, where you say you have built a business model, even if it is an Internet that makes it possible for cartridges to be exchanged in all work lines worldwide.

Speaker 1 41:02
Whether they will be replaced externally or not, I don't know at this point. But in any case, a system has been established somewhere in which Schäffler on the side, but also when it comes to having the DMG Mori machines in operation with Schaeffler’s customers, Schäffler has the option of supplying these customers with the DMG Mori machines, which are virtually running at their own premises, but also running at the customer's site, accordingly.

Speaker 2 41:32
Okay, cool. And last question, what do you think has contributed significantly to such project successes?

Speaker 1 41:46
The MVP for now. So that's not a big surprise, but it was important to have the puncture and the cartridge example is a nice one, because there the grease cartridge was first looked at, but then such a machine also has completely different characteristics.

Speaker 1 42:09
For example, they have the feed from the Z-axis inside the rotary table loader, where the workpiece then lies. You can measure that and then quantify whether this feed is still running the way it does.

Speaker 1 42:30

The various other operating fluids that come up, only it's acceleration values and I don't know what you need, but then at some point advanced analytics to address this issue. But through this breakthrough and this MVP, you also talked to strategic IT, for example, and talked to all kinds of stakeholders in order to make it right at all.

Speaker 1 42:54
And that's one of the success factors that are very important, that you start with topics with low criticality and push the door open, because the topic of IT security and data security is extremely high, especially in mechanical engineering, even if it is sometimes, if you take a closer look, totally nonsensical.

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Speaker 2 00:41
But yes, maybe in advance, maybe you can pick us up again, just a few insights about your position at (company anonymized) and your experience.

Speaker 1 00:54
Well, you may have already seen that, I studied business administration and then economics in my master's degree and then went to Volkswagen Financial Services or in the rental organization, now it's Europcar and then I only worked in a management company, I think two years or so in the shoot and then I took over the international rental business from the truck manufacturer MAN and then just built it up a bit, structured, a bit reorganized, in the foreign subsidiaries and yes, that was my starting point. Then, almost exactly two years ago, I moved to (company anonymized) and am now mainly active in the rental business, at the corporate headquarters. So renting is relatively close to Equipment as a Service.

Speaker 1 01:53
Well, rent is relatively close to Equipment as a Service, or is sometimes used synonymously, and then I dealt with the topic of the EaaS business model for (company anonymized) from the very beginning, so to speak, and I actually helped to build it up and bring it to market. So that's the offer for us, it's also live now and I'm still accompanying it now, so also in terms of rolling location, but also in terms of further development, in terms of strategic backgrounds, in terms of production parameters, refinancing solutions that go with it and so on and so forth. This is my daily task, so to speak, and I do it almost every day.

Speaker 2 02:37
Okay, exciting. Perfect, then I would share my screen to walk through the structure of our questions.

Speaker 2 03:26
What would you say about the familiarity with the concept of Equipment as a Service in the industry in general? You still have to pick up a lot of people and this is now a topic that is well known.

Speaker 1 03:41
I would say by now it is well known or in any case is something where many companies, as far as I can tell, deal with the topic. When we started two years ago and we first noticed that there were of course many consulting companies, the well-known big ones, who have now specialized in this, who have many offers and offer companies to pick them up.

Speaker 1 04:06
At (company anonymized), we have many, many years of rental experience, we have full-service experience, we offer digital ad-ons, we offer usage-based billing models.

Speaker 1 04:19
Well, we have a lot of experience in-house, but nevertheless there is of course this subscription trend, Equipment as a Service trend, which is brought much closer to the customer. For example, as I know car subscription from my old job, that was just being set

up.

Speaker 1 04:36
As a result, it is now also much better known to the end customer, to the B2C and spills over into the B2B world with another pressure. And now it was the case for us back then that not much had happened in intralogistics, so that's our division in mechanical engineering, so to speak.

Speaker 1 04:52
And we were the first to deal with it more intensively and now it is the case that there is more activity. So, it can go to all corners and ends. I don't know if you know the examples, probably Hilti, Heidelberger, there are probably a few model companies that go a little bit into this business model development.

Speaker 1 05:15
What you can say, they are, yes, they have a different model. So, you can imagine, such a forklift is very different from a drill, which has completely different problems and has to be treated completely differently and it is also a bit more mobile than a printing press.

Speaker 1 05:32
And at the same time, the customers are different than, for example, with a car, so car subscription or something like that. So that has completely different requirements and in total, however, more is happening. We can already say that.

Speaker 2 05:45
Who would you say, are there the typical customers and are this equipment as a service model also in demand by the customers or is it more of a topic that is brought to the customer by the providers somewhere or has to be brought to the customer?

Speaker 2 06:03
So, this is a lot of convincing or are there now customers who explicitly ask for this and if so, why?

Speaker 1 06:13
It depends a bit on how it is designed. Basically, it's like this, we just have a relatively uncomplicated offer. This appeals to customers who may not necessarily be experts in the subject matter and machines or who may not have their own purchasing department that specializes in this.

Speaker 1 06:30
That said, a bit of complexity reduction, important topic. Then, of course, notice periods for such models. It is very important that if you bring something to the market flexibly, then that is also a competitive advantage.

Speaker 1 06:46
Typical customer, probably difficult to say, what we have just noticed a bit, is slowly it is just the case that in the private sector many things are simply subscribed. Whether it's somehow no idea, deliveries that I somehow get regularly, my coffee powder or my car or something else and that they also expect these offers in a business context.

Speaker 1 07:14
So, there is a lot going on, you can also do a lot in the off-balance area and in this respect, I would say that it is a bit of a trend and also a demand. At least that's what we're seeing at the moment.

Speaker 2 07:27
Okay, and would you say that there are certain industries that are predestined for these equipment-as-a-service models, more or less?

Speaker 1 07:39
So, what you can perhaps say is such a contract logistics area, that's just the way it is, these are companies that have order situations, they always get contracts for three to five years with such subcontractors and that's just their planning horizon.

Speaker 1 07:55
In the past, it was sometimes ten years or eight years and what we see is that this contract period is systematically shortened and that doesn't really fit together with classic leasing contracts, because they are usually based on longer terms. And if you now look at this term of flexibility, these are of course precisely these focus customer groups wherever we have more uncertainty in the market, whether it's due to a war, raw material supply problems or whatever uncertainties Covid, yes, we always have a bit of a movement in the direction of, I might not buy it or I won't read it in the long term, but rather look for a flexible solution and then have less capital commitment inside.

Speaker 2 08:42
Okay, interesting. Yes, I would go into more detail about this Covid and Ukraine topic later on, but perhaps first to the fundamental challenges on the provider side when implementing EaaS models. First of all, in terms of macro trends, such as competition or technological megatrends, and then at the enterprise level, what are the challenges and concerns in implementing such models?

Speaker 1 09:21
Well, first of all, if there is a competition and a competitor is on the market, then it is like that, especially with us, it always depends a bit on the tender mode. If these are the largest customers who then have to or want to make tenders, then it has to be said that this depends extremely on the customer's tender specifications.

Speaker 1 09:38
Whether you can also offer a leasing contract or whether you can only offer sales contracts or whether you can even offer such an Equipment as a Service model. Because customers must always be in the purchasing departments and ensure comparability.

Speaker 1 09:53
And if you're missing the grid, then you have to get creative. For example, you have to submit a first-round offer and then propose an alternative in the second round. These are all procurement processes that exist today, they are not geared towards the existence of equipment as a service.

Speaker 1 10:10

And I think there is still a lot of pioneering work to be done. Otherwise, technological megatrends, which are always when new technologies come in, i.e. a lot of automation for us right now.

Speaker 1 10:23
Then you have such a barrier to entry. So according to the motto, I don't want to commit to it in the long term, because I don't know if it will work. So maybe as examples, the electric car, I don't even know if that's coming to Germany.

Speaker 1 10:36
Yes, I'm not going to commit myself to it for five years, I'd rather try it for three months. Something like that, this logic can be transferred, so far as technology security is concerned. Otherwise, yes, demographic trends with us, we don't have so much for the time being.

Speaker 1 10:52
Logistics is an important topic, and it is becoming more and more important. That's what we see in the market and yes, otherwise it's something like Covid. So, when such a global shock comes, it changes the usage behavior and also the predictability of the companies.

Speaker 2 11:12
Okay, and maybe to go into a little more detail about the provider side, i.e. from (company anonymized)'s point of view, what are the drivers, perhaps financial drivers, but also operational or strategic drivers, to implement such models in a targeted manner and not necessarily from the customer's point of view.

Speaker 1 11:46
Yes, but that depends a bit on the model design. As I said earlier, we have a relatively large share of the rent with us anyway. So, for us, this is nothing new. We have been doing this for many, many years, not quite every second device, is a rental device with us.

Speaker 1 11:59
That said, this is also important and big, and we are also designed to handle such a transactional model. In other words, that's not the big factor for us right now. For us, the question is, how do I actually manage my company and what are the key figures?

Speaker 1 12:16
So, you can read in the annual report what the AG is heading for. It's no secret. And that's quite different with such models. And that means a lot of change in the company, as you hear again and again from the consultants.

Speaker 1 12:31
And I can confirm that. That's the way it is, it turns a lot of things upside down. This calls into question a lot of things that may work a little differently today. And of course, we notice this in the implementation. So that doesn't make it any easier and is certainly inhibiting.

Speaker 1 12:48
But if you know about it, then you can deal with it.

Speaker 2 12:52

A quick question, it just mentioned consultations. So, you also actively work with consultancies who recommend such models to you somewhere and push it somewhere in a certain way?

Speaker 1 13:07
Yes, so we went there a few years ago and said, okay, what does this mean for us? How do we want to deal with this as a company? And of course, in such a start-up phase, you always get an external view from time to time.

Speaker 1 13:20
And that's where we did, of course. I think that's what a lot of companies do. And then, of course, at some point we also decided, how safe do we feel and what can we continue to do on our own.

Speaker 1 13:32
I think that's the normal way and the normal way to engage consulting firms.

Speaker 2 13:39
Interesting. And just maybe to take a closer look at the influencing factors of the Corona pandemic or the Ukraine war, if you look at the last three years, maybe once shortly before the pandemic, once during the pandemic and once after the pandemic.

Speaker 2 13:55
What were the influencing factors, specifically the pandemic or the Ukraine war, with regard to such models?

Speaker 1 14:05
Yes, I think you can already say that the customer's need for flexibility, i.e. this willingness to commit in such a crisis situation, naturally decreases a bit. Yes, that means that everything that is flexible and where I don't have to commit myself becomes more attractive in comparison.

Speaker 1 14:28
Perhaps as a suggestion, there are also from such a relatively large provider of such software readings that do this. I think it's a USA, I don't know exactly what it's called, I'd have to look it up.

Speaker 1 14:42
I just can't figure it out. Major U.S. service provider, I believe to be the market leader for software in the field, who also always make such predictive index for subscription-based business models, where they benchmark against S&P 500 so as a comparison.

Speaker 1 15:02
And that's always quite interesting to watch. So, you can see all the companies that are developing a bit in this direction, that are more transactional and not so object-value-oriented, have actually performed better in crisis situations.

Speaker 1 15:16
I think they also have a relatively large data mask, meanwhile you have to know of course that it is their own database. Of course, they also want to sell their software, but it's a very

nice orientation, because you can also break it down by industry.

Speaker 2 15:33
Interesting. And exactly again, perhaps, with regard to the implementation of Equipment as a Service models. What are certain hurdles or are there perhaps certain checklists that you have to start first before you would implement a corresponding model at (company anonymized), for example?

Speaker 1 15:57
So, you can think that completely. In other words, from the production of such a machine to marketing or remarketing and also including refinancing. This is what a perfect EaaS device should actually look like, what kind of features does it actually have to have, so also the construction.

Speaker 1 16:17
And that's how you have to approach it. Of course, you can't do everything at the same time, it's too complex for that. But I think you have to look at it holistically and you have to be aware that a relatively large number of areas are involved.

Speaker 1 16:33
Well, this is not, I would say, just a contract that you offer the customer, but you also have to think about what else is behind it and what you actually need for prerequisites. Whether that's in the system landscape that you have to build for it, or whether it's in the vehicle specification, or maybe in the way I have to raise funds, or maybe I have to tell the banks a different story, because the banks simply manage themselves in a completely different way and the capital market also works differently.

Speaker 1 17:06
Well, there are many aspects, I can't go into detail about them now. There's probably no guide either, so it's done. There are a few orientations in the market, I have already mentioned a few companies, but in the end, it is very individual and tailored to the company.

Speaker 1 17:27
So, I know now, so one advice would probably be, you just have to be aware of this need for change, because if you can't get people into their heads, so to speak, then there are always a lot of reasons not to do something.

Speaker 1 17:41
And you just have to have that on your screen, and you have to give it over time.

Speaker 2 17:48
G there were certain hurdles that have now occurred more and more often or have in a certain way posed problems or.

Speaker 1 18:06
If you think about it, you have one, we have a direct sales department, so our sales staff, they work in companies that all belong to our society. This means that we can actually say exactly what they have to do, when and how, and we don't have to resort to any dealers or partners who do it for us.

Speaker 1 18:26
That means we can actually steer through quite a lot. However, this also means that you have to consider how the incentives for the person who has to sell it to the customer in the end will be created.

Speaker 1 18:36
So, what does he actually need for goals? What does he need to know about how he has to work in the future if he is no longer supposed to sell a device, but he has to somehow bring it into such an EaaS model?

Speaker 1 18:50
What should he know, what components or service components should he sell? How is he supposed to do that? How much money does he have to get for it? Commission logics. It's just really important to do it right.

Speaker 1 19:02
Because otherwise it won't work right from the start.

Speaker 2 19:08
Okay, interesting. Then maybe I would hand over to my colleagues again at this point regarding the time, do you have any additional questions?

Speaker 3 19:29
Yes, of course. Thanks for the question. I actually have one or two more questions to go a little deeper into the provider side. The standardization of machines has just been mentioned a bit.

Speaker 3 19:49
Would you say that the standardization of machines, i.e. the more standardized, the better you can clearly support the hypothesis or is the sentiment in the market rather that you simply can't make a generalization for the use of EaaS models on the provider side?

Speaker 1 20:08
I think it depends a lot on the industry. For our market, I would almost say that it is actually true.

Speaker 3 20:16
Okay, great. Yes, we have actually always heard from the literature and from more senior interviews that there should also be something like whether the machine has a secondary market, where it could theoretically be used again.

Speaker 3 20:29
Would that also be something you had contact with, which is a possible use case?

Speaker 1 20:37
Yes, we at (company anonymized) produce forklifts and also robots and we use them, we rent them out, we also have remanufacturing plants around the world that refurbish used equipment and then bring it into the second life cycle.

Speaker 1 20:56

So that's exactly our business model, to do that. And of course, we also have our second-hand market, so we also actively offer used equipment and work on it, which means that it is part of our business.

Speaker 3 21:09
Perfect, great. Then let's just go back to the push and pull market. This is also briefly touched upon. I would just follow it up again concretely. In your opinion, it's still more of a push market than a pull market.

Speaker 3 21:24
The equipment is a service market, so is it in the full interest of the provider or is the pull now equivalent on the side?

Speaker 1 21:33
I would say at the moment, i.e. in intralogistics, more of a bush market. So, it's more the case that you have to bring things in, you have to explain them. It always works particularly well when it's easier for the customer.

Speaker 1 21:45
As soon as you get that reduced and you just get the message across, then it becomes a pull. Because as soon as a customer is, let's say, in there and understands why it is so, then it works on its own.

Speaker 1 21:59
But you have to jump a hurdle first.

Speaker 3 22:02
Great, thanks. And last question would be how I got this CAPEX vs. OPEX consideration again and especially with regard to the COVID pandemic and Ukraine. In fact, one of the two external shocks implied a significantly higher demand for Equipment as a Service model, because, for example, customers were significantly limited in their investment volume, their liquidity.

Speaker 3 22:29
Did you notice anything concrete or not?

Speaker 1 22:33
So if you can record something, then it would tend to be rather positive. But whether we now, I couldn't say now, that the Ukraine conflict has turned a lot around, that's more of an issue, which has just turned the procurement cost situation completely upside down.

Speaker 1 22:50
So, it's more like the general price level, which was affected in the Ukraine conflict. With the Covid issue, it was different, because it massively restricted the planning horizon of security in the market, which led to the fact that rents tended to, I would say, attractive.

Speaker 4 24:00
What recurring customer traits can you recognize?

Speaker 1 24:17

Customers who transfer their private user experience into everyday business life, so to speak. And say, I mean, it doesn't really matter if I buy or lease, I just want to use it. Well, it just has to work.

Speaker 1 24:30
I don't really have time to deal with the matter any further. Please make it work.

Speaker 4 24:45
And if you were to categorize them like this, if you were to think about a business customer, how would you categorize them, or if you were to set up a number of characteristics, how would you describe them?

Speaker 1 25:03
If then, I would say, rather small medium-sized customers. Otherwise, the topic with the contract logisticians, at least with us. For this purpose, we also have existing models that have such a transactional character.

Speaker 1 25:18
I couldn't say where the change comes from. So at least not with regard to EaaS, which has been in the market segment for many, many years, that's nothing new and not a big trend now.

Speaker 1 25:33
So big companies, they've been renting part of their fleet for many, many years or have a complete service anyway, haven't done anything themselves for many years. And there is also a fully managed fleet, especially in the logistics sector.

Speaker 4 25:49
Exactly, now you've mentioned the logistics sector, other industries come to mind where this is very often the case, which are then very responsive to equipment-as-a-service services.

Speaker 1 26:02
I wouldn't pin it down to the industries. So that's what almost half of our entire market does with different rental models and all customer groups are involved.

Speaker 1 26:19
So, I see the question, what kind of company philosophy does the customer have? Is it more like that, I'll say, the medium-sized company that says, was that out of there, what you see, it's all mine, is everything in my books, or is it more like someone who says, yes, I don't really care, I don't really want to have a capex commitment here either.

Speaker 1 26:38
I'd rather show my rate here and leasing is still too little for me, by the way, I still need a complete service in it and in between even more, would I like to have my fleet managed again anyway or need another warehouse management system and so on and then you just slip into this full subscription package.

Speaker 1 27:00
That's a smooth transition.

Speaker 1 27:02

You can't just separate that now.

Speaker 4 27:05
Okay. And then last question would be about the types of machines. So yes, we have established standardization is an important point, there are other features that come to mind here, regarding machines that favor such an Equipment as a Service offering, I would say, yes.

Speaker 1 27:25
It should just be common. So, we had a second marketing earlier, which means that if I'm so flexible in terms of usage time, then of course I have to have a plan for what I'm going to do with it if I get something like that back.

Speaker 1 27:38
Since the connectivity is actually the suffering issue. And that's where standardization comes in. And if I do that with volume models, it's of course more interesting than if I do it now with niche products.

Speaker 1 27:51
So, everything that is customized doesn't really fit in there.

Speaker 1 27:58
New technologies can be accommodated if they are capable of the masses because you can already control the market yourself. It's great for that. These are things that can also be observed in the car industry.

Speaker 1 28:13
Sometimes, maybe in the car-sharing models, probably everyone knows, they are also equipped with electric cars, because the manufacturers also work like that, who push in there and say, guys, then just try it out.

Speaker 1 28:30
That's a good idea, of course.

Speaker 4 28:34
Exciting. Cool. Yes, as I said, with a view to the time I would leave it at that and yes, I would definitely say thank you very much for your time and the exciting insights.

Interview Transcript Participant 8

Speaker 1 00:00
I've been with (company anonymized) since 1995 from the background businessman, i.e. studied business administration and have actually been working in the industrial goods sector for the last almost 30 years, head of the global division at (company anonymized) and I'm always worried about the next pig being driven through the village.

Speaker 1 00:24
Pay per etc. was such a maybe a bit more than a pig that was driven through the village, but exactly. I hope I can help a bit. I took a quick look at your questionnaire.

Speaker 1 00:35
I don't have that many specific opinions on the specific question, what has now triggered Ukraine and so on. You also bumped me, Mr. Capelli, because of the article I had written there, in 2020 or so.

Speaker 1 00:48
Exactly, that was paper, yes. Exactly, I think almost everything I thought about the topic or still think today, I wrote in the article. Exactly, you're probably going to hear a few things from me right back.

Speaker 2 01:28
Familiarity with the concept of Equipment as a Service - to what extent are machine manufacturers and or customers with whom you have worked in the past familiar with the concept of Equipment as a Service.

Speaker 1 01:40
I would say, at the level where I'm going, they're already very familiar with the concept that it's a well-known topic, so at least because it's discussed a lot, not necessarily because they all think it's relevant or use it for themselves.

Speaker 2 02:01
Okay, if you could touch on it again, what are the typical industries with which you then had points of contact?

Speaker 1 02:14
So, in the broadest sense, of course, these are production systems where I also have an output where that comes into play. I think I'm familiar with printing presses, I'm familiar with laser feeding systems.

Speaker 1 02:36
I think in the article I also talked about the valves in compressors and so on, so from these areas.

Speaker 2 02:47
Okay, great. In your opinion, what are typical customers of Equipment as a Service models, if they exist?

Speaker 1 02:59
Good question. First of all, I don't think it's very common. So, a lot of people are trying to market that. But I also believe that for the reasons I have given in articles, in many cases this does not fly.

Speaker 1 03:21
But from a theoretical point of view, of course, it is companies that are either smaller or have very sporadic needs in some area, which of course have an interest as users in having as little risk as possible and as much variability as possible, so to speak.

Speaker 1 03:43
There it is, so there is always the question of whether you are talking about the full package, i.e. purely racy or something like that, performance-dependent something, there, so there is certainly also a demand, so to speak, from very large companies, which actually also try to use the topic to a certain extent to promote the, yes, let's say, defending the risk, the risk is to be passed on even more to their machine suppliers.

Speaker 1 04:21
So from that point of view, you can almost say that it's probably a little bit at both ends of the spectrum, so to speak, the small ones and the, the big ones, who do this out of different motivations, because the big ones maybe have enough base load and so on, that they don't really need it, but maybe take the chance, to get more value for the same or less money.

Speaker 2 04:46
Totally, if you have already clustered both types of customers into two large categories, you can also say specifically what are typical recurring characteristics or requirements of these customers, why explicitly, when it is then requested, equipment as a service, the need exists for the respective customer, originates.

Speaker 1 05:08
Nope, I don't know, except for the characteristics I just mentioned. So small, sporadically needed. I can't really think of anything, they'd have to give me a few cues, whether I believe in it or not if they want to do that.

Speaker 1 05:23
Otherwise, I can't tell you more.

Speaker 2 05:27
Yes, so what the literature and the interviews have often stated so far, it is on the one hand of course on the customer side, what I have already said, risk distribution, CapEx investment or the inclination not to want to invest much.

Speaker 2 05:43
These are typical topics for the customers, and we actually have the typical yes, theory that often exactly small medium-sized companies have greater interest on the customer side and on the provider side, it is often the case that large companies, which can afford to take a risk with a new business model, so to speak, pull up the whole thing.

Speaker 2 06:09

Would you say that it is also the experience that you have had yourself or is it totally different.

Speaker 1 06:16
So, I think that's correct.

Speaker 2 06:20
Okay, great. Then let's move on to the next question. The need for Equipment as a Services solution. You have just said that Knowledge is there. You have already mentioned the need.

Speaker 2 06:34
Is there a need for Equipment as a Service at the moment?

Speaker 1 06:40
And the question, so to speak, from my point of view, is not only about the wish, but also, so to speak, about the economic fulfillment of the wish. I think the overlap is extremely small. Well, it depends.

Speaker 1 06:54
So, I think the need for the solutions that are economical for the provider is low. That's what I mean.

Speaker 2 07:05
Okay, very exciting. I think we'll go into that in more detail as we go along. Especially now with a view, what are typical machines that are predestined for equipment as a service on the supply side in your opinion?

Speaker 1 07:25
Are you really looking at Equipment as a Service here?

Speaker 2 07:29
Yes, but the equipment and service are still relatively broad, so of course the servitization of the machines in general.

Speaker 1 07:38
What I had also written, and so to speak, that also shows a bit of logic. Software is well suited. Absolute. The more capital tied up. I have, but the worse it is suitable.

Speaker 1 07:51
Relative to the usage, so to speak. That's the equation I have there. So, if I have zero capital commitment additionally, because that's a cost anyway, then of course it's well suited. Whether it's software or whether it's additional features, as I had written, which you can then switch on, which are already built-in, it makes sense everywhere.

Speaker 1 08:18
But yes, if it really has a large share of funding, so to speak, and then it becomes more difficult. So, I would rather pin it down to that than say now that a printing press is better suited than a bottling machine.

Speaker 1 08:39

I don't think that's the point.

Speaker 2 08:43
Okay, interesting. Would you generally, or do you have a tendency to do so, if we still stay on the subject of machines, whether the degree of standardization has an effect on the ability to be considered as an equipment-as-a-service model?

Speaker 2 09:00
What do you mean by that? To what extent, for example, does a machine have the possibility of being reused in a second market, i.e. that it can be used in a standardized way in several companies for different applications, for example forklifts, can company A or B be used?

Speaker 1 09:23
Depends on a contract, so basically it is of course the case, if I put up a customer-specific machine, then I just need a corresponding contract duration so that it is served, otherwise I have much more risk than with a standard machine, in some form or forklift, etc.

Speaker 1 09:45
It's just different, because then, as with leasing or rental, I think I'm the better example, yes, with rental as well. I can't give a custom machine to the rental, but a standard machine can, I think that's where the logic is.

Speaker 1 10:02
I think you really always have to de-segregate these individual costs and return and risk drivers, so to speak, and say where to talk, here right now, yes. Total. This is sometimes lumped together too much.

Speaker 2 10:18
Absolutely, to conclude the topic of machines again, keyword mobility of a machine, do you have an opinion or a statement on the extent to which the mobility of the machine could be an influence, how well or badly it is suitable for equipment as a service.

Speaker 1 10:40
So, I think it doesn't matter if the machine has wheels or not. If that's what they mean by mobility. So, I can also bring a machine tool from A to B on a truck in the stand and stand processing center.

Speaker 1 10:56
There is no need for wheels. That wouldn't argue against it. If I say I have a large press, then of course it's less mobile per se and it's probably less suitable.

Speaker 1 11:12
Well, that's basically also suitable if I have a fair distribution of risks and opportunities, of an economic nature, between provider and manufacturer. But then it stays with one company.

Speaker 2 11:27
Yes, okay, interesting. Let's talk about specific drivers and inhibitors of this equipment-as-a-service solution. At the macro level, they have currently been able to identify any drivers that have at least hidden the need for equipment-as-a-service performance, either on the

competitive side, on the technological side or on the regulatory side.

Speaker 1 11:57
Yes, well, I think they are theoretically on the road with their questions about Ukraine and really on the road. Anything that creates uncertainty for the user naturally drives the desire to transfer risks, i.e. to variabilize them.

Speaker 1 12:19
That's certainly a big driver on a macro level. I don't know where macro and micro or how they differentiate it now, I think that dealing with new technologies is of course easier.

Speaker 1 12:55
If I don't have to give the full commitment of the Capex but can somehow test drive more or less times. And that's certainly another reason. Where I have a relatively high degree of innovation, this could also be a demand driver.

Speaker 2 13:15
Absolutely. To have a specific distinction here, you would then say that the pandemic then led to a stronger push or pull, especially on the customer or provider side.

Speaker 1 13:30
Well, I don't know, that's all my speculation, so to speak. I believe that these conflicts have in fact led to the issue getting stuck. Because, so to speak, times of great uncertainty usually shift the focus of companies as well as especially of providers.

Speaker 1 13:57
I'm kind of adding a new business model now. I'm trying to secure the core business, so to speak. If you think about it, the focus during Covid was on people, on supply chain protection, etc.

Speaker 1 14:22
And I think all the capacities of a spiritual nature in the boards and so on were suddenly completely in the operational safeguarding of the core business. And don't say we're going to push an idea that doesn't fly by itself further into the market.

Speaker 1 14:39
So, I think that's the reason from my point of view, not because it wouldn't be logical that I want to protect myself against uncertainty as a user through variabilization, but simply because crises of this form inhibit practical innovation, simply the focus in the companies is elsewhere, on evaluating and securing the core.

Speaker 2 15:12
Yes, absolutely, if we stay with the providers, you have already mentioned it, on a micro level, or on a firm level, what would you say, are the drivers? Rather marketing, financial, operational, strategic, what is the main reason to offer equipment as a service on the one hand or accept on the other hand.

Speaker 1 15:42
Normally, you talk to companies. I'm kind of an exceptional case now, who looks at both sides a bit. Exactly. So, from the vendor side, when I look at these categories now, I think this

whole topic is already playing, additional growth or lock-in of customers, I would put that now under marketing drivers maybe is the main topic, I think.

Speaker 1 16:23
So just try to keep other customer groups or customer groups better, so to speak, or increase the switching costs and so on. And of course, there are financial considerations behind it, although these are usually from a purely financial point of view, from a CFO point of view, these are all problem issues, because it extends my balance sheet and so on.

Speaker 1 16:47
So that's not the positive motivation. I think, conversely, with the users, I think it's more financial and in this respect, so what I said, you could also use it as a strategic driver in part, i.e. securing the position, I also think it's also rather large companies, i.e. relatively large companies, that offer this, as an additional topic, exactly, so in this respect it is perhaps also with the more strategic drivers.

Speaker 1 17:23
For the users, I think there are financial and operational reasons that are in the foreground, i.e. risk passing-on or minimizing financial risk. We can also see a workload risk operationally, but also the issue that I have with a full-service contract, simply making sure that someone else is available for operational performance, etc.

Speaker 1 17:52
And also has an incentive to ensure that at all times. And I don't say in case of a service overload, the craftsman will only come in six weeks.

Speaker 2 18:09
Yes, absolutely super exciting. If we stay with the drivers again, and they had already touched on this, the Corona pandemic and or the Ukraine war, they can think of something specific that has been amplified either on a macro or micro level.

Speaker 1 18:26
Exactly, on a micro level, what I said is crucial. In other words, that simply the focus on the tried and tested or the safeguarding of the core play a role. I think that's also at the forefront on a macro level.

Speaker 1 18:51
Well, I don't think I'm going to come up with such a theory. Energy costs have gone up and so now there's an insane boom somehow, I think that's contrived. I don't think there is.

Speaker 2 19:12
Okay, super, super interesting. At the same time, if we stick with the similar driver, but now just rebuild the sheet and say, barriers hurdles, so simply an inhibitor at the macro level and company level, what are typical hurdles that currently hinder the Equipment as a Service model from working?

Speaker 1 19:36
So, control models, i.e. models of incentive and financial management, e.g. the budgeting process. In other words, a customer has an investment budget and an operational budget, if now everything suddenly moves from one to the other because everything becomes

operational.

Speaker 1 19:53
That's not what they're set up for. One for one budget and the other for the other. These are rather, if you like, organizational hurdles. The way in which the customers operate, which I believe already play a major role, as an inhibitor.

Speaker 1 20:10
Now let's take a look at the company level. Now, of course, you can put all the critical points I have mentioned from the CFO's point of view and so on back into this block, why it doesn't work.

Speaker 1 20:32
I also think that if you honestly calculate what it has to cost to offer this, then it's just prohibitively expensive. Then most potential users will say, oh no, that's very expensive, then maybe I'll buy the machine after all, or maybe I won't buy it.

Speaker 1 20:51
Or I'll choose a more traditional model, which only includes leasing. Or where I go to a yes, contract manufacturer or something like that, which has always existed, which also tries to cluster practically similar risks in the old world.

Speaker 1 21:12
That's enough for me.

Speaker 2 21:16
Super, super exciting. I think it's actually pretty much congruent with what we've heard so far. So super exciting insights. Right now, as you just mentioned, we are of course talking to suppliers and customers and also to consulting firms.

Speaker 2 21:30
Hence the question of the extent to which such equipment services projects are offered, pushed,

Speaker 1 21:45
Counseling, an old age saying says, Counseling is not sold, Counseling is bought. This means that the impulse, so to speak, must come from the customer and not from the consultant. Of course, I always try to place things with such articles that you can make a project about.

Speaker 1 22:03
At the end of the day, it has to be a customer problem. And, of course, I have also talked to many customers about this topic. And yes, because I'm of course also a skeptic, something has usually come out of my conversations, so to speak, also in terms of advice, on how to make greater use of individual aspects, so to speak.

Speaker 1 22:22
So especially in the area of variable service contracts and so on, which are then IoT Enabled and so on and less really the pure racy Equipment as a Service. To be honest, I never really found the big use case together with customers.

Speaker 2 22:50
Yes, okay. How attractive are such equipment as a service project in general, if they can make a statement about it for consulting firms?

Speaker 1 23:05
No, they are not more attractive than different. At the end of the day, this is relatively normal management strategy consultations. I could imagine, if someone actually does this on a large scale, that it will of course also have a backend.

Speaker 1 23:25
If I'm in the IT realization to create the IoT backbone for it, then it's interesting, but usually I can do it for other reasons and that's not necessarily connected to this concrete use case of purely racy equipment as a service.

Speaker 2 23:56
Do you supervise or accompany more projects on the provider or customer side? Provider. Okay, great. Then we're going to go into implementation now.

Speaker 2 24:11
How would you say, how are EaaS models initially implemented, if they are implemented?

Speaker 1 24:21
I can't say much, as I said, from my point of view... Well, I've never been close enough to be able to do that competently.

Speaker 2 24:31
Great, so I would assume that you can't make any statements about important success-critical factors for an EaaS implementation.

Speaker 1 24:42
So not specific, I think I could name generic things that are right for every implementation, but nothing that I could tell you from a concrete experience that it is very different with EaaS than with other implementation topics.

Speaker 2 24:59
Okay, great. Then you can probably name practical examples, less successful practical examples, from your own experience, but would you have any else that come to mind?

Speaker 1 25:12
Yes, so whether it's successful or not, that's for those who make it to judge. So, I think companies that I didn't name in the article, but to which I think I somehow referred, are, among other things, trump cards that have done something, otherwise also Heidelberger, i.e. print.

Speaker 1 25:42
Käser compressors, also other valves, or exactly, then the vent manufacturer Hörbiger for example. But at Hörbiger, this has nothing to do with IoT, but is a performance contracting model that has been around for 100 years.

Speaker 1 26:03

So, exactly, otherwise, in this thoroughbred area, I don't know exactly.

Speaker 2 26:12
Okay, great. Then just a quick knock down. Would you describe the equipment-as-a-service market as more of a push or pull market? So where does the demand mostly come from?

Speaker 1 26:36
I think this is more of an attempt at a push market.

Speaker 2 26:42
Yes, very valid, also the same, with what you have found out so far. In the short term, technically, you have a hard stop. Yes, I have. Then I would quickly listen to my colleague again, give him the opportunity to ask questions, if he still has any.

Speaker 3 26:59
Yes, I'd be interested in principle, well, you said you're rather skeptical about the whole thing, that's why your article was also very refreshing.

Speaker 3 27:08
But if you look into the future, what possibilities do you see for companies to proceed if they want to implement or adapt Equipment as a Service?

Speaker 1 27:22
Yes, I think you have to see what is in there, so to speak, what I have done in the article. In other words, what individual risks and topics are it actually about and then selecting what is actually the right thing for different customer groups or use cases, except as trying to place the overall package.

Speaker 1 27:42
And that's what happens, I think, in the past with simple things like rent or leasing. And that's what happens especially in my observation and that's also totally sensible and effective in the area of IoT-enabled service offerings, where I can get a lot of effects that I want as a provider to have from Equipment as a Service, as far as Lock-In is concerned, which also brings stronger control or value contribution for the customer, but without now, for example, immediately aware of the risk of utilization or the capital costs.

Speaker 1 28:24
So, I think that's the right way to really think it through, which customer groups actually really have what interest in which risk transfer or damping and where am I and what kind of clusters can I do there and where am I really better able to deliver that than the customer himself.

Speaker 1 28:43
So it may be that I'm a large company and I have such a financing cost advantage that it makes sense that it pays off to do that for small companies and so you really have to go through that and then I think trying to do segment-specific or use case specific bundles.

Speaker 1 29:03
So then again, the question is, does it scale or is then I have to do a lot about it, but that's on the other hand. But I don't believe in just following the trend, so to speak.

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Speaker 2 00:56
Yes, excellent. Then we'll jump right in. Yes, first question. To what extent are machine manufacturers and customers of machine manufacturers familiar with the concept of Equipment Asset Service?

Speaker 1 01:16
I think most of them don't deal with the topic. In this respect, they are probably not familiar with it either. But honestly, I don't have an educated opinion on the subject. I've never discussed with clients, but my hypothesis would be that most companies still think in terms of capex capital expenditures and depreciation and not in lease models or anything else along those lines.

Speaker 2 01:54
Yes, I see. Why do you think this is the case?

Speaker 1 02:02
If you think about it the other way around, the business case for a company that leases equipment has very, very strong restrictions. I can only make the whole thing fly by saying that I have equipment that is so flexible that I can easily ship it to another if one customer no longer needs it, or that I can use the production hall of another customer.

Speaker 1 02:32
And that might work for some kind of milling machine, which is super flexible, but for most other equipment I'm very skeptical about how easy it is. If you then look at companies like Flex Factory, who tried to do that, to be fair, it never took off.

Speaker 1 02:58
But I don't know, there are some minimal exceptions, but I have, my impression is that this has never really taken off and probably for the very reason, the business case just doesn't work.

Speaker 1 03:10
Or only works in such narrow conditions that it is unlikely that anyone can seriously earn money with it. And in that respect, I don't think it's so much that there's no demand.

Speaker 1 03:24
It would be nice if you could set up such a small production on demand. But for the business case to work somehow, the costs for it have to be so high or the minimum purchase quantities so high that it suddenly works.

Speaker 2 03:45
Now you've just highlighted the demand side, we'd like to pick up where we left off. From your point of view, what are the typical, or what would be the typical current customers of Equipment as a Service offers?

Speaker 1 04:10

So, as I said, who could use Production as a Service or Equipment as a Service basically? Of course, anyone who somehow doesn't have the critical mass or has the critical scales to use a piece of equipment to its full capacity.

Speaker 1 04:34
This probably affects a relatively large number of companies that somehow participate in small series such topics, be it in mechanical engineering, be it in niche productions, be it somehow, I mean, there are more and more such small EV players on the market.

Speaker 1 04:54
Of course, they are probably already interested in it because they don't want to put any expensive equipment in the yard. In this respect, I believe that there would be enough demand for such an offer, provided that it would then happen at prices or at costs from demand, from the customer's point of view, that are relatively close to the costs, would also bear them in-house.

Speaker 1 05:31
And then we come back to the business case, which of course is somehow difficult to depict. A lot of coincidences have to coincide for such an offer to be somehow spatially relevant.

Speaker 1 05:48
And if the compatibility is relevant and the volumes that are necessary, then many coincidences must fit together.

Speaker 2 05:59
Now that a few features have already been mentioned, there are other features that come to mind.

Speaker 2 06:08
Also recurring common features and requirements from these potential Equipment as a Service customers.

Speaker 1 06:16
So, I mean, that's a tough question. For me, it's all always a question of the overall business case. So, minimize costs and for a sufficiently favorable offer you will always find a customer.

Speaker 1 06:46
The problem is, however, that EaaS offerings are simply not cheap enough. Criteria for which are relatively simple. So, if someone offers to provide me with the equipment so cheaply, as a service, that I wouldn't be able to do it myself, and with the same service levels etc., then of course I would do it. But the problem is, it hasn’t happened yet.

Speaker 1 07:18
In this respect, I believe basically the offer is Unlimited and everyone would do it if it is sufficiently cheap. The costs are only limited by the fact that I can't manage the capacity utilization or that the utilization will be much, much lower than really having dedicated equipment for something.

Speaker 3 07:43

Hm?

Speaker 1 07:44
In principle, the market potential is infinite, i.e. the complete industrial production. In reality, unfortunately, 99 percent are somehow left out, because it probably won't be cheap enough.

Speaker 1 08:04
Thank you. I have to somehow manage to form a cluster of different companies that happen to need the same production technology, but which, yes, where the demand patterns overlap in such a way that they do not need the production capacity at the same time, but that they in principle need the production capacity countercyclically against each other.

Speaker 2 08:37
I see, then it's just mentioned at the beginning, but again explicitly, how high, or low would you estimate the need for more EaaS solutions from a vendor or customer perspective?

Speaker 1 08:52
As a share of total industrial production?

Speaker 2 08:57
No, just a qualitative assessment. So, would you rate it as rather high, low, moderate? Both from the provider's point of view or from the customer's perspective?

Speaker 1 09:09
So, I feel like I'm repeating myself a little bit. The need is theoretically as great as it could be. The only problem is the demand depends on the offering and there is somehow a cost volume curve or a price volume curve.

Speaker 1 09:25
And the price, which can somehow be called up in the market, will therefore have no idea if I now always have a depreciation in the business case. For a piece of equipment, then I have a produced piece of something, a depreciation of 10 euros.

Speaker 1 09:53
If I do the equipment service of course, if I can get it, then somehow nice and slow it becomes kind of critical. And at some point, the break-even point is reached. And someone has to bear this risk of utilization.

Speaker 1 10:24
This means that whether I can make the statement depends on the fact that networks can form. I can somehow imagine something like this when companies join forces and think about building a shared production center and then they access the same resources.

Speaker 1 11:01
I can imagine such topics somehow, because they would enter into strategic partnerships and then share the equipment with each other. But so that it's an open market and someone just offers, I'm doing equipment service now, I don't know where the additional margins that the person who wants to offer the equipment service is going to come from.

Speaker 2 11:46

Well, then we come to the topic of industries and machines. In your opinion, which industries would be predestined for equipment as a service adaptation?

Speaker 1 12:05
I think basically anything that is somehow flexible and that can be direct production equipment. I would exclude infrastructure equipment unless you say that is relevant for you.

Speaker 1 12:23
Direct production equipment, everything that is really flexible in the sense of I can imagine that in chemistry, when you say you somehow have certain chemical reactors that you have readily available and that you can use for all kinds of production stages.

Speaker 1 12:43
I can well imagine it in basically I can also imagine it in mechanical engineering, when you say you do kind of milling and the classic somehow classic all-purpose machine construction, the all-purpose machine construction equipment, I can imagine something like that.

Speaker 1 13:05
I can also imagine if someone has a tool shop for example. Many companies have a small tool shop in-house. The problem, of course, is such machines, which we can of course also access flexibly.

Speaker 1 13:23
That means I don't want them to be too far away. But basically, as machine types, I would say everything that is somehow very flexible and I would primarily consider such milling machines, lathes, grinding machines, all this lapping, honing, what there is in plant engineering.

Speaker 1 13:46
I can imagine such topics that you can build up somehow. And I can also imagine that there are somehow enough niche manufacturers who somehow have to lap for an hour or five hours every quarter or something like that.

Speaker 1 14:07
Then it can make sense somehow. Otherwise, everything that is somehow of course highly specific. I can imagine somehow battery production, battery cell production or something like that don't make any sense at all, somehow to do it as a service, because I mean that the flexibility is not given.

Speaker 1 14:36
The workload has to come completely from a customer and of course he asks himself why I don’t buy it myself. That's just a question of funding then.

Speaker 2 14:48
Yes, I see. Cool. Then we would like to take another look at the challenges, what primary obstacles do you see on the customer or provider side with regard to the use of Equipment as a Service models?

Speaker 2 15:05

Well, it's already mentioned a few, maybe just so briefly, again explicitly. What is the assessment?

Speaker 1 15:15
So, in the customer's point of view equipment must be cheap, equipment must be accessible. And in principle, you need to ensure sufficient quality. If I can do that somehow, if I can create an appropriate offer, then I don't think it's a problem at all from the customer's point of view.

Speaker 1 15:44
Then most companies would do that, insofar as from the customer's point of view, I have no concerns about that. From the provider's point of view, I have very strong concerns that it will not be possible to ensure sufficient utilization of equipment to make the whole thing a functioning business.

Speaker 1 16:11
I will have depreciation and I will have to allocate them somehow to such low production quantities that it will very quickly no longer make sense for the customer to maintain such an offer.

Speaker 1 16:29
In this respect, I can already see that there can somehow be isolated solutions. Inevitably, I think these have to be genuine strategic partnerships. To limit this utilization risk.

Speaker 1 16:48
By real strategic partnerships, I mean some kind of binding cooperation, up to possibly JVs or whatever. Then I think it can work. But you can see it, I don't mean in the equipment, in the production equipment, but you can see if you draw a parallel to all these chemical parks that exist.

Speaker 1 17:10
The chemistry parks work as long as I can ensure a high utilization, because then the infrastructure costs that I have to pay in such a chemistry park are somehow low for everyone.

Speaker 1 17:25
But I know some companies in Germany that are now somehow the last ones left in a chemical park and pay three to five times the market prices for infrastructure services and maintenance services.

Speaker 1 17:37
Yes, and I see the risk for EaaS as well. In this respect, you have to avoid it somehow.

Speaker 2 17:50
Yes, and on a macro level, what kind of drivers or blockers do you see that negatively influence the adoption of EaaS by companies?

Speaker 2 18:09
So, for example, from the market competition point of view, the regulatory point of view, the technological point of view, the demographic point of view.

Speaker 1 18:21
I have to worry about that because I all know I don't have an opinion on. That's okay.

Speaker 2 18:26
Do you believe that events such as the Corona pandemic or the Ukraine war had an influence on these challenges or obstacles of an EaaS adaptation?

Speaker 1 18:51
Maybe. The Ukraine war has affected few industries. In other words, without playing down. But these are wiring harnesses, grain production, etc.

Speaker 1 19:12
But in terms of industrial production, not much. But basically, if you say that you think strength is resilience, which already exists, you can of course already lead to the fact that you have more companies that say they want to have flexible production capacities that are also relatively close to them.

Speaker 1 19:33
Flexible production capacities, because they are probably more expensive in the immediate vicinity than if I can somehow continue to shore them off. But on the other hand, because it can of course be that I have to rely on it if there are somehow geopolitical issues, geopolitical conflicts or other disruptions.

Speaker 1 19:58
I can imagine that this could theoretically help to increase demand for such offers.

Speaker 1 20:17
In practice, I have never come across such a discussion. And I've also never heard of companies that are now considering building something like this, a flexible manufacturing capacity with equipment as a service.

Speaker 1 20:36
So, the argument is certainly there. I haven't seen any practical relevance of the theory so far.

Speaker 4 20:53
Mhm.

Speaker 2 20:55
Okay, cool. Then let's get back to the consulting perspective. In your opinion, what measures could be taken by equipment as a service provider to promote the adaptation of such models on the customer side in the future?

Speaker 1 21:19
I think you probably have to build a network like this as a provider. You have to find companies that do the same thing, i.e. find a cluster where the demand patterns somehow fit together, in the sense of going in the opposite direction, where the machine requirements are similar, and you have to somehow merge them, build such an ecosystem or build such a network.

Speaker 1 21:53

That's the only sense, I don't want to say the only one, because as I said, I'm just a bit off the cuff.

Speaker 1 22:07
But that's the only approach I can think of now to really make such a model fly. You just have to manage the utilization somehow or build a network that can ensure the utilization.

Speaker 2 22:31
And again, now related to the consulting context. Do you know if such Equipment as a Service Adoption is also proactively driven and offered by consulting firms?

Speaker 1 23:00
So, we would certainly do something like this or such an attempt for EaaS companies as well, try to identify suitable clusters. I believe that we could do the same, and that we might be able to do so in individual cases.

Speaker 1 23:20
Are we going to do that? It's not clear to me. Well, I've never heard of it. Of course, I know that we at the company have dealt intensively with this topic. I know that there is also a great deal of scepticism internally.

Speaker 1 23:33
And I know that at FlexFactory, a colleague worked there. I don't think the folks at FlexFactory wouldn't have been able to do that. I think it's just extremely hard to do that.

Speaker 1 23:58
And I would be surprised if someone would come in here tomorrow from someone that we should make an offer for such a topic.

Speaker 4 24:09
Okay.

Speaker 2 24:12
How attractive would such equipment as a service project be or how attractive are they for consulting companies in general? In other words, in terms of margin, also with a view to follow-up projects, because they are already relatively extensive.

Speaker 2 24:27
How would you rate that?

Speaker 1 24:37
Yes, that's always relatively easy with us. When we do a project, we offer a certain daily rate, which is more or less independent of what kind of project it is. Then, of course, it depends on how long such a project takes and takes up a lot of capacity, so it is also expensive.

Speaker 1 25:03
And in that respect, of course, it would be very attractive. We would certainly do that, and it would certainly be lucrative, but I haven't seen any such projects yet, so maybe it's still a bit of a theoretical problem.

Speaker 1 25:24
We would do it for sure, but there is no demand. And as a consulting firm, the world is, of course, a simple one. What no one needs, will not be done.

Speaker 2 25:38
We have already heard the similar sentence from a colleague of Oliver Wyman today.

Speaker 1 25:44
I'd be interested to know if they're more bullish, but I'm guessing...

Speaker 2 25:48
No, he also had something to publish. I'd be happy to send you links. He was similarly skeptical, indeed. And do you know if there are somehow more projects being carried out on such equipment as a service adoption on the customer side or on the provider side of consulting firms?

Speaker 1 26:09
I don't know. In my personal environment, I saw zero on both sides. I don't want to rule out the possibility that they don't exist. So, it can be. At (company anonymized), I primarily work on battery issues.

Speaker 1 26:21
There is no such thing. Or many automotive topics, too. I've never seen anything like it. I don't want to rule out the possibility that something like this might not happen. I don't know. Mechanical engineering, special machine construction, I don't know.

Speaker 2 26:34
Which do you think is more likely?

Speaker 1 26:47
I would say that if someone were to do that, then it would be a provider, because a customer at the moment, so a customer can, it doesn't make sense to theoretically deal with the concept as a potential customer, but if there is no offer, then there can be no demand.

Speaker 1 27:04
In this respect, something like this can only arise from an offer perspective. And at some point, of course, you could also give customer projects, but at the moment I think there is practically no offer.

Speaker 3 27:23
Mhm.

Speaker 2 27:23
Okay, cool. And I've heard it a little bit now. But I ask again explicitly, do you have any experience with the implementation of Equipment as a Service models in sight?

Speaker 2 28:21
Okay, cool. I don't know, would you still be able to say something about it, or do you think you could say what would be important for such an implementation? So, what points would

you have to pay attention to,

Speaker 1 28:34
No, honestly, I've never dealt with it. I have no idea that of course there will be any phrases from me, but it won't help you. I mean, this is a huge implementation project.

Speaker 2 29:00
Yes, cool. Exactly, and now to bring this back to the practical level, we just talked about the Flexfactory, we talked briefly. Do you know any concrete practical examples of yes, maybe also of successful equipment as a service adoption?

Speaker 2 29:31
Yes, there are these classics, it always starts with Rolls Royce, then comes trump, Hilti, Liebherr, Bosch probably did it too, but you find relatively little about all these models when you drill into them.

Speaker 2 29:49
That's why it's an exciting question to see, so were they successful, were they a marketing success, a communicative success, that you are now almost always considered a model, but we actually lack information and, above all, numerical examples, quite clearly.

Speaker 1 30:07
Yes, I can imagine that I mean, just a laser system or something, that I mean, that's a series, that's super flexible, of course, but you're going to dig it somewhere deep into the equipment in almost all cases.

Speaker 1 30:17
Yes. You won't be able to use that from someone else.

Speaker 2 30:24
To go back to Flexfactory. The yes, this ecosystem building is trying to a certain extent. What do you think could have been the reasons why it didn't fly?

Speaker 1 30:42
Yes, that's exactly the topic I was trying to explain earlier. I think it's just that you can't manage the workload. Yes, occupancy. Turn them upside down, but you just have to find these clusters there.

Speaker 1 30:52
Yes, either they didn't do it well enough, or the clusters didn't exist. My hypothesis would be their latter because I know that he is a very capable colleague. If it had worked, it would certainly have worked.

Speaker 1 31:13
Yes. I don't know, FlexFactory still exists, so I don't want to say that the company is dead or something, I don't want to sound debatable. Yes. But as far as I understand it, it was not the absolute resounding success.

Speaker 1 31:28

Yes, that's right.

Speaker 2 31:30
In any case, I can share the information with you that they are definitely not following the business operation anymore. They went out of business. That was about three weeks ago.

Speaker 3 32:52
Yes, I actually had another question, even if such a project was never really carried out, maybe again from the perspective of a consultant, so to speak, if you were to implement such a model or in general with such a conversion of such a business model.

Speaker 3 33:07
What could be there, maybe as a keyword pricing or also personnel, HR, what would be the hurdles that could arise and how would you tackle them?

Speaker 1 33:23
I mean, of course, all kinds of hurdles can arise. Spontaneously, with the sense that it is this topic, I have to be able to identify meaningful clusters. I think that's just a serious problem at first, if only that.

Speaker 1 33:46
Then to find a sensible price that benefits everyone and at the same time something attractive for the companies. Probably also a financing issue, because I have to pay the whole thing, I have to pay for all the equipment in advance and I have to find banks that are willing to finance the equipment.

Speaker 1 34:10
This was perhaps easier five years ago, with very low interest rates. At the moment, it is increasingly difficult to cope with rising interest rates, where capital suddenly costs something that companies are no longer used to.

Speaker 1 34:28
And I could well imagine that, especially the small companies will suffer massively from this financing issue. Well, Flexfactory was of course very solidly financed with the big companies behind it, but if someone wants to raise it as a medium-sized company or something, then of course that's a lot of money that he has to take in his hands and that he has to get financed somehow.

Speaker 1 34:55
I would be surprised if the banks shout hurrah at the idea.

Interview Transcript Participant 10

Speaker 2 00:12
I am the CEO and founder of the (company anonymized). We are a relatively young company, a boutique consultancy specializing in service and after-sales.

Speaker 2 00:26
We've been around for a year and a half. We have also had two EaaS projects in the (company anonymized). I spent four years at Roland Berger, where I was jointly responsible for the Service Excellence Practice as a junior partner.

Speaker 2 00:39
There were two, let's say, two-and-a-half EaaS projects. And since twelve years ago on the industrial side I was already in service. Lastly, eight years at Trumpf, for very different functions.

Speaker 2 00:54
And at the end I was responsible for the EMEA service of the machine tools.

Speaker 1 00:59
Okay, sure. Super. Then I'll share a question now, how would you like to let me know if you can see it.

Speaker 3 01:07
Yes.

Speaker 1 01:08
Exactly, let's start with the first question. Familiar with the concept of Equipment as a Service, as we have gained experience with it on the consulting side and also at Trumpf.

Speaker 1 01:21
Now machine manufacturers and customers alike are generally familiar with the concept of Equipment as a Services.

Speaker 2 01:29
What do you mean by familiar, whether you've ever heard of it or whether you're actively tackling it?

Speaker 1 01:34
Trust really in the sense of being able to remember.

Speaker 2 01:39
I would actually say that this is for the vast majority of terms. Some call it Equipment as a Service, others call it pay-per-use models or subscription-based.

Speaker 2
01:49Well, you can name the child in many different ways. But the vast majority of people have definitely heard of it. In fact, on the supplier side, I think they are thinking more actively about developing in the direction of developing than the customers that they would now

actively demand it.

Speaker 2 02:11
But I'm thinking, so we're all using Netflix, we're all using Spotify. So, I think everyone knows what they can imagine by that. But for most of them, it's actually a complete transformation of the business model.

Speaker 2 02:26
They're a little scared.

Speaker 1 02:28
Absolutely, yes, these are indeed topics that we will go into more detail in a moment. Second point would then be typical customers, I don't have it now as I still wrote and also providers, so like once on the customer side what are the typical customers of EaaS, usage models in mechanical engineering and what are the typical providers, so then like recurring common features of the requirement.

Speaker 3 02:52
Hm.

Speaker 2 02:54
That's actually a bit of a hypothetical question now, because most of them are not yet ready to really offer it. And from my point of view, that is also a crux of this topic.

Speaker 2 03:04
If you don't know exactly which part of your customers you want to offer this to, then in the end you design a service that no one buys because there is either too much or too little in it. But now let's get to a very high level, as far as we're in plant and mechanical engineering or, because of me, also in the MedTech sector.

Speaker 2 03:22
From my point of view, it would be a requirement that you don't use this equipment to its full capacity, because then financing is always cheaper. And also, not in such a way that it is somehow the reserve machine that is then somehow fired up twice a year.

Speaker 2 03:40
For some bottleneck it doesn't make sense for the provider, but you just have to be somehow in such a field, where you don't have the full capacity and fluctuations.

Speaker 2 03:50
But it still has to be a process-critical piece of equipment, because otherwise you won't bother with the stress at all and then somehow put up a second machine for 100,000 euros. So that must be an awareness.

Speaker 2 04:04
So now, if the machine builder says that we will only do Equipment as a Service in the future, that won't work because it doesn't make sense for the majority of his customers.

Speaker 1 04:15

Okay, sure. If we stay on the subject now, you say that this is offered, what is not. General sentiment from the market, would you say that the need or demand is more driven by the vendor or the customers, i.e. push or pull market.

Speaker 2 04:37
That's a good question. So, some don't push properly, and others don't pull properly. That's why there's a lot of talk about the topic, but in fact, not so many have really placed a portfolio or at least first offerings in this area on the market.

Speaker 2 04:55
Actually, I think it's still more of a topic at the moment about which the provider can differentiate itself from the competition. The pull doesn't come from the market so much that customers say, either you have this now or I'll never buy from you again.

Speaker 2 05:11
Yes, there are sometimes. For example, we are also using such a power tool manufacturer. That's a very, very good customer from us. With it, we somehow do two or three consulting projects a year.

Speaker 2 05:22
There are actually now the first tenders from municipalities, i.e. large municipalities that buy a lot of devices, i.e. 50, 100, 500, entire fleets, which then just say, they want to have it somehow more flexible, they don't want to buy them all and then they should somehow take care of how they can get rid of it after four years, but they just want to rent long-term and then also pay per use models.

Speaker 2 05:48
But that's quite selective. So, it's not like the market is in high demand. I need this now, I need the Netflix for my machine now, otherwise I won't buy from you anymore.

Speaker 2 05:59
That's not the case today.

Speaker 1 06:01
Okay, well, then this actually goes exactly in the direction I wanted to go with the next question, because the need and the equipment service solution, just if you could answer it again briefly concretely the question.

Speaker 1 06:12
From the provider's and the customer's perspective, the demand is high or low.

Speaker 2 06:20
So, as I said, from the customer's perspective, if we stay in the capital goods sector for a moment, then there is definitely a customer group that is very interested in this. If you're exactly in this sweet spot, it's not a full capacity utilization and our core machine, where I can somehow get the financing from the bank for 1.5 percent, that's always cheaper than if there is still a financing partner somehow sitting in the manufacturer and then all kinds of services are packed in that I don't need. You're just not some kind of third bottleneck machine as a replacement bunkered somewhere.

Speaker 2 06:56
There are also, I think, young companies that want to grow quickly, but from their VCs, for example, if you now say, I'm going to open up a 3D printing booth somehow, yes sure, then you can buy some printers for 2 million or you just start with such a model, that's of course much cheaper, if you're somehow a growing company, but with these established companies, it's just a bit simple, yes, a bit due to the business history.

Speaker 2 07:25
They're just used to buying their equipment and then financing it somehow and you have to get them out of it a little bit first. That's why, there are customer groups for whom it's super interesting, you might only get them with such an offer and with others maybe not, because they also have financing difficulties if they have to bear the risk, but for the majority, I think, could now, even without exaggerating, I'm personally absolutely convinced that this is also a mindset issue, so that will also change in the future, but as of today it is just not the giant pull.

Speaker 2 08:03
And from the manufacturer's point of view, it's just the equipment or let's say the vehicle, how you can actively protect yourself from your competition, because you bundle all kinds of services in there and he has to buy from you and pay twice.

Speaker 2 08:20
So, you have in service and aftersales you have virtually no competition anymore, so it's super interesting to think this direction from the manufacturer's side.

Speaker 1 08:29
Yes, super exciting. Also, a lot of things that are actually congruent, that you say, that we have heard from other people. One level deeper, if we then look at the specifics, industries, and machines, of course with a focus now on German mechanical and plant engineering.

Speaker 1 08:45
What would come to mind, specific industries and which ones are predestined for adoption and why?

Speaker 2 08:57
Actually, in principle, this works everywhere. I wouldn't say that it would be more predestined anywhere. So, it depends more on your customer structure and how important your equipment is.

Speaker 2 09:13
So, what shouldn't be is if your devices somehow have a subcritical price. Then the customer says, yes come on, so now I'll just buy it for 300 euros. You as a company, you know, if you somehow have material costs, of 2 million and then you don't just mess around for 750 euros but are then bought and put in the corner.

Speaker 2 09:37
From my point of view, that's actually the only criterion where it doesn't work. So, if your equipment is simply absolutely uncritical from the customer's point of view, i.e. on the cost side, then he will always buy it.

Speaker 2 09:50
He doesn't feel like it, there are any subscription fees, and he has to plan that and stuff. Otherwise, this will start in the MedTech sector, which will be done in all classic mechanical engineering industries, they are working on it.

Speaker 2 10:03
So, it's going to come everywhere.

Speaker 1 10:05
Super, super exciting. If we now go one level deeper from the industries and look at or consider really specific machines, everyone can think of a specific type of machine that is particularly suitable.

Speaker 2 10:24
Well, as I said, this goes from the machine tool to any process technology, it can be done with air compressors, it can be done with pumps, it can be done with everything. And it is also done with everything.

Speaker 1 10:40
Yes, would you say that the characteristics such as mobility on a machine or the number of moving parts on a machine and the degree of standardization of the machine, whether they have any effect, positive or negative, on the ability to be servitized?

Speaker 2 11:01
Yes, speaks an interesting point, where I myself did not have transparency on the screen yet. Of course, if you are now in solar mechanical engineering, then it is a bit more critical because you also lack a bit of experience, because you then have to price everything in over the life cycle, so to speak.

Speaker 2 11:18
Because otherwise you either see the money out of the customer's pocket and if the recalculation says, oh no, that's unsuitable, that's much cheaper if I do it differently. Or you just pay extremely for it.

Speaker 2 11:29
That's why it's actually in special machine construction, but that also means special machine construction, there are always project-specific agreements. Or will there be a buffer that we can recharge?

Speaker 2 11:42
I think that's difficult, I agree with you, but anything that's standard machine works. So, as I said, Power Tools, which I gave you an example earlier, is mobile. We've done something like this before for lawns, so lawnmower robots.

Speaker 2 11:56
We have already calculated such topics with Med-Tec companies and with machine tool manufacturers. And they're selling that now, too, these are stationary devices. And even if it has a lot of wear parts or a little, it doesn't matter whether you can offer it.

Speaker 2 12:13

That's just a calculation topic then. But in terms of dynamics, it doesn't matter. So, I would really only do the right special machine construction, I would exclude that, it's difficult.

Speaker 1 12:26
Okay, great. Exciting. If we think about challenges or classic inhibitors of such Equipment as a Service models, then I would like to ask customers and providers to what extent you can think of any macro drivers that have hindered EaaS adoption in recent years.

Speaker 2 12:56
No, in fact it's more of a megatrend that advocates the topic that just this personal possession, it's becoming less important, so in the personal environment you all already know that. I mentioned the example, no one buys CDs anymore, you have Spotify, no one buys DVDs anymore, you have Netflix, you have car sharing, I also have a car subscription, for example.

Speaker 2 13:17
This goes back, but you also see the same thing in the industrial context, so at the end of the day the Homo Economies, there is no such thing, decisive in the end also humans. And there, too, you notice that I simply change the attitude to this topic, I have to have such a machine in my own balance sheet or not, that changes, but that's just a slow process.

Speaker 2 13:39
Well, this is almost 20 years behind the private environment, otherwise the topic would be much, much more established. So, from my point of view, this is more of a driver from a macroeconomic point of view.

Speaker 2 13:51
What is there from my point of view there is no real hammer, except that financing interest rates have somehow become more expensive, but they have also become if you finance the equipment through your house bank, or even if you read it, it makes no difference.

Speaker 1 14:11
Okay, cool, drivers wanted to take a look at us anyway, first we would like to take a look at the company level, whether there are drivers specifically for customers or also from the provider's point of view that are currently preventing companies from implementing such models.

Speaker 2 14:28
From my point of view, it's just a bit of fear to change your business model. So, because you're used to it as a company for 180 years. The typical German mechanical engineering has always been around for at least 100 years.

Speaker 2 14:42
Are you used to producing machines, selling them, and then getting the money transferred? And suddenly, things are somehow different. And what if the customer somehow goes broke, do I somehow get my money?

Speaker 2 14:55
And how does that work accounting-wise and if I just change my business model now, then I'll have a dip. As I said, you sell, everything is transferred 100 percent from some leasing

company or from the customer and suddenly you get it for over 10 years.

Speaker 2 15:11
How can you finance your production, your people, your R&D, how can you finance all this now? These are all such fears. Of course, it's not a problem if you have a financing partner with you, but we always have to explain everything to them first.

Speaker 2 15:25
They're just a bit afraid that their business model will look different. And yes, it's just kind of a human issue, more of a mindset issue, that you're a bit afraid of change.

Speaker 2 15:40
This is and the second, but from my point of view this is more of an operations topic, that this will only come out later in such an implementation. You also have to have your service delivery absolutely under control.

Speaker 2 15:55
In today's world, the customer has the pain. So, if you manage the network to somehow get your spare parts there in time and the technician somehow has to go out three times until he has solved the problem, then it may be that he makes one or the other customer a claim and then somehow does not pay an invoice in full, but the customer has the problem.

Speaker 2 16:14
In the business model, if the machine isn't running, you don't get any money. So, I wouldn't do that until I have my operations under control. If I only have problems everywhere, then you really do yourself the problems when you go into such a business model, because then you no longer get the risk of the customer.

Speaker 1 16:35
Ja, totally super exciting. If we now look at the Corona pandemic and the Ukraine conflict individually, you could identify whether any drivers, sorry, challenges have now intensified again concretely, if they exist at all.

Speaker 2 16:54
They have changed the macroeconomic playing field, but as I said, not specifically Equipment as a Service topics. The outlook has become a bit more volatile. This means that Germany is heading towards recession, or we may already be in one.

Speaker 2 17:16
Financing is getting more expensive. But again, that's what you have in normal business as well. That's why it's perhaps more of a driver because you don't have to put the money on the table yourself, but you can shift the risk to the provider, so to speak, and he puts the machine in front of you and then pays according to use.

Speaker 1 17:37
Exactly, then you have already mentioned it yourself, I would like to take a look at the driver side with concrete. For vendors and customers, once again, macro-level level and then company-level.

Speaker 2 17:53

Yes, I had mixed. I have just given the answer at the customer level that on the macro level, this ownership issue is also declining in the B2B business area. So, you attach less importance to the fact that you own the machine yourself.

Speaker 2 18:12
Reading is common practice anyway, but now actually Equipment as a Service, just goes in this direction and everyone somehow wants to keep the risk as low as possible and push it somewhere else.

Speaker 2 18:25
Such a business model also plays into the cards. You can then pass it on to the provider mainly in series form. In reality, it doesn't look like it, because then there are still at least acceptances and things like that in these contracts.

Speaker 2 18:40
So, it's not like you're pushing 100% of the risk, but it's a big part. Therefore, these are already drivers that make you think in this direction. And as I said, from the customer's point of view, from the provider's point of view, it is first and foremost a differentiation from the competition.

Speaker 2 18:57
So if you're the first one who can offer something like this and gain experience, then you have an offering that others can't offer. And especially for the service business, that's what you've gated.

Speaker 2 19:09
So if the customer is in there, then he buys everything from you. That's already priced in. As I said, if he goes somewhere else and pays for maintenance from the freelancer again, then twice.

Speaker 2 19:17
Doesn't make a customer.

Speaker 1 19:20
Yes, okay. Exciting. Would you say that at least the Covid pandemic or the war didn't exacerbate the drivers?

Speaker 2 19:33
I can't say whether it's actually the case, but I can imagine that the uncertainty factor has increased and the only option here is to reduce the risk. Does this actually influence the decision in reality today?

Speaker 2 19:50
Sorry, I don't know.

Speaker 1 19:52
Total fair. Super. Then we would have ticked off the driver and the inhibitor topic and then I would like to hear from a consulting point of view to what extent or what kind of measures are there from your point of view that could promote the adoption of your models in general

in the future?

Speaker 2 20:15
So, I think you just have to promote it a lot more actively. That's actually the main issue. So, the companies have to get out of their shells a bit, maybe they also have to get rid of this German way of thinking a bit.

Speaker 2 20:29
I think the question will come later if I remember correctly. You don't have to have somehow designed the thing down to the last part and then somehow go out large scale and now just screw up the model.

Speaker 2 20:40
But you just have to quickly find a few pilot customers and then try a little bit here and the next one you put something else in. In order to then develop an offering relatively quickly that also fits the market and the needs in the market.

Speaker 2 20:54
And then you have to get to the scaling there. And that's something that the German engineer is somehow reluctant to say that everything has to be perfectly thought out first, for two years. And then you realize, oops, you don't need that.

Speaker 2 21:10
We've kind of made a mistake in there. Unfortunately, this happens a lot.

Speaker 1 21:15
Can I imagine, would you say, that in general EaaS concepts and business models are proactively offered and also pushed by consulting companies?

Speaker 2 21:32
So, I think everyone will tell you that they support there. I've already said it, I did projects at Roland Berger. I've had projects in the (company anonymized) now. In general, at least in the large consultations or service consultations that I know, there are few such standardized offerings.

Speaker 2 21:52
So, you go to the homepage and then tell me, these are our five consulting projects and one of them is kind of the as a service package for, I don't know, six weeks consulting project.

Speaker 2 22:05
It's always the case that the customer calls you or you ask him if you don't have a need in any way, let's talk and then they tell you, we're working on the topic, we need support or we need growth programs or we need performance programs.

Speaker 2 22:20
That's why it's an active offer, that this is actively pushed into the market, I don't think, but that's not how consulting works, that it's requested more often, definitely.

Speaker 1 22:32

Okay, super exciting too. Then immediately afterwards in response to the inquiry, would you say that more projects are then requested by customers or by providers or generally done by you?

Speaker 2 22:48
Be only from provider. Well, I would also be astonished if a Daimler would somehow call us in a standing position, hey, can you do such a project with us together with our supplier?

Speaker 2 23:01
Nee. So always the provider. Because that's where the pain lies, he has to develop now. The customer simply wants to buy something else.

Speaker 1 23:10
Absolutely. How attractive or could you make an issue about whether EaaS projects have an additional appeal for consulting firms, whether from a financial point of view, or because of follow-up projects, etc.?

Speaker 2 23:29
So, this doesn't come from the consultation. Most consulting projects see a fixed-budget issue. So, you say we support six weeks, that's two men, that's the average daily rate. And what you do doesn't really matter.

Speaker 2 23:46
So, profitability is always the same. And every project is equally attractive. Your customer would have to get more discount, the other less. That's why there are very rarely consulting projects at a fixed price.

Speaker 2 24:01
And if we do it with less effort, then we have a higher margin, that's not how the business works. Therefore, from a purely monetary point of view, it is no more attractive than any other consulting project.

Speaker 2 24:14
But it's just a topic that's on everyone's lips. It's talked about at congresses. If you can say to the customer, look, we've already implemented three topics. Then it just shows that you're not only doing the classic, but you're also working on the fancy shit.

Speaker 2 24:28
Well, that's more for your own positioning, that you also work on important trend topics. Not because it would have a different financial impact in any way.

Speaker 1 24:40
Okay, absolutely. Then the implementation, which you would have already mentioned yourself, 2 EaaS projects participated, because then simply as generally EaaS models are implemented initially, I think you did that or you just did the strategy, but what are your thoughts on that?

Speaker 2 25:03
So, in total I'm on five such projects, because I have three in the (company anonymized) and, as I said, two and a half at Roland Berger. At Roland Berger, it was actually more of a

strategy perspective if we were to turn our entire business model upside down, what would that look like, how do we have to position ourselves, how do we finance it?

Speaker 2 25:23
And now, what we're doing in the (company anonymized) is more operational. So, we calculate a price for such an offering. Let's define the delivery processes, let's define the processing processes.

Speaker 2 25:35
So, we don't work so much on C-level now, it happens again with strategy topics, but we actually work more operationally with the service units. What is now such a typical approach, I don't know, I think at this strategy level, is actually a no brainer.

Speaker 2 25:59
Of course, such a large corporation still likes to get extra advice to structure this whole process a bit, because otherwise they have to get 30 different stakeholders to the table internally and have to determine.

Speaker 2 26:11
But actually, the crux lies in the operations. So, I'll give you some very trivial examples, then a customer comes along and says, yes, we don't want to sell our forklift truck like that anymore, but we want to do some kind of fleet leasing and bill monthly, then I ask, okay, can you invoice monthly in your SAP, somehow create such an invoice plan?

Speaker 2 26:40
Nope. Then I say, well, how are you going to do it, somehow by hand? Or do you write Excel lists and then think about when you're going to hurt in the bill? Yes, we don't know. So, how can you monitor if there is an availability guarantee in it?

Speaker 2 26:56
Can you even measure how high the availability is today? Nope, these are problems. And then you just have to think, how do you fix it now? So, sure, you can start offering that, but if you do that, if someone complains, it's okay, you can somehow do it all with your hand on your arm, but if you want to scale it up and maybe later twist 20 percent of your products over such models and everything is then manual work, then you just blow it up.

Speaker 2 27:25
And I think that's something that's completely underestimated. Most people say, I need strategy support now and how do I do that? And then you kind of do a workshop with them and then not everyone looks like that, yes, no, that's clear.

Speaker 2 27:38
It wasn't that complicated. But then you really have to trigger the whole process landscape so that you can map it at all, because it works differently. So, sure, you can say that maintenance is still maintenance, but you really can't underestimate that.

Speaker 2 27:54
You're transforming your entire business model, and that starts with invoicing, but also how you manage your operational service. So, who has priority now, who has the machine or the

Equipment as a Service machine that is standing or yes, you just have to think about that.

Speaker 2 28:12
If you don't do that, it's going to flop. And then, unfortunately, such a fancy topic is then dead, because there are definitely three in the C-level who say, we don't need this at all, we'll carry on as before.

Speaker 2 28:26
And for them this is then found to eat.

Speaker 1 28:29
Yes, super exciting. I'd like to go one level deeper. You have just mentioned two specific examples. If you had to identify the three largest levels of implementation from my gut instinct at the operational level, what would it be?

Speaker 2 28:51
So really, how are you going to say the headline IT? So that starts with, with billing, that continues with monitoring. Managing contract constructs somehow, it's all kind of IT, it just has to be fit to map it.

Speaker 2 29:12
The second thing is actually, in service operations you have to think about how to deal with the topic in the future. Because so far, all customers are somehow the same, of course, there are then some Prio A customers, Prio B customers.

Speaker 2 29:27
And one I treat somehow faster and the other just has to wait a bit, one might have a contract, the other one doesn't. But it's all the same business and now you suddenly have something that works completely differently, where billing works completely differently and then you just have to think about whether a separate team is doing it, is the same team doing it, are the priorities there.

Speaker 2 29:48
That's something, that sounds trivial, but you have to shake it up in your day-to-day business. And then I actually believe that if you have both under control, then you can manage the delivery and then you actually have a sales issue.

Speaker 2 30:04
Because your people, including your salespeople, are simply used to selling machines for 500,000 euros. And then you can wake them up at night and then they rattle off the USPs somehow, whether technical or commercial.

Speaker 2 30:17
And now they're supposed to sell something completely different, they're not really up for it. There are just such topics and I prefer to do what I did ten years ago, because that's where I feel somehow at home.

Speaker 2 30:27
I know every question that is asked, can immediately shoot against it from the FF. And maybe I don't know, I'll have to call the head office again. So, if you don't go hard with sales goals

and train them and make it clear to them that this is the future and that this should be sold, they just don't sell it.

Speaker 1 30:52
Super exciting. In any case, you have just mentioned IT digitization, again roughly touched upon. How differentiate, then an implementation project in a company with a very high degree of digitalization, compared to a low digitalization, differs again like three main characteristics, what you have encountered there, if.

Speaker 2 31:15
Actually, so now of course such a pilot is doing in a small company, which does all this somehow free to do as it goes. Of course, it's much easier, because then you kind of do another pilot where they can freestyle something again.

Speaker 2 31:29
When it comes to scaling, they have real problems, because it's suddenly impossible to handle everything. Of course, these are the ones who already have a high degree of digitalization and have good processes.

Speaker 2 31:40
Of course, they are easy to scale, but they will immediately put the handbrake in and say, what to do before the process is not digital here, you don't do anything, it won't be sold.

Speaker 2 31:50
And then you can wait for a year until such an implementation project with IT is done. That's why it's a bit of a two-edged sword. With some, you can prioritize quickly, with the others, you can scale.

Speaker 2 32:02
Actually, you need something in between. But in reality, there is no such thing. And that's kind of difficult now. Of course, what basically helps is if you also have a higher, i.e. not only the internal processes, but also if you simply also have a higher connectivity of your machines, if you can have predictive maintenance, such topics.

Speaker 2 32:25
Because that's just taking a risk out of this business model for you. If you can track everything, if you have your dashboards, if you know the machine, it's going this way and that. And now, ah, we've got a power outage here, so we might have to pass for two weeks.

Speaker 2 32:39
Of course, all this will help you to keep the costs more predictable or to reduce them in any case. But it can also be done without.

Speaker 3 32:51
So actually, these processing processes and they just have to stand. Monitoring all this equipment, condition monitoring, that's nice to have, because it reduces costs for you and increases the ability to plan, but it can also be done without.

Speaker 2 33:09

You can also plan more buffers in such a model. But you have a higher stress factor.

Speaker 1 33:15
Yes great, super interesting. So, if we have the same ideas, question idea, but then related to service share, not degree of digitization. High service ratio, versus low service percentage. How does this affect the success of the implementation?

Speaker 2 33:37
Can be both. So, if you have a high proportion of service, that usually speaks for a certain degree of professionalization in service. And if that's the case, I've already told you or you, the operations, they just have to work, otherwise such a business model will blow up in your face.

Speaker 2 33:53
Otherwise, you'll just make a mess and then dig your own grave. That's why I would say, based on my gut feeling, if any machine builder has a 30 percent share of service sales, then he has focus on it, otherwise he wouldn't be.

Speaker 2 34:07
That's an indicator that the operations are under control, otherwise customers wouldn't buy from them either. But it doesn't have to. But as I said, this is an indicator. On the other hand, if you do almost no service, so let's assume you have a product that is relatively low-maintenance, low-failure, yes, then such an equipment as a service model, is much, much easier to implement and also the whole risk that you then miss with the pricing or that you then have no buffers separating is a lot, much smaller.

Speaker 2 34:41
Well, I'll say, from the start, from the calculation, from the setup, it's much, much easier if the thing doesn't need a service or only once in five years or so. So, if you have a machine, a machine tool that somehow breaks down three times a year and you need spare parts for 10,000 euros and once somehow for 50.

Speaker 2 35:01
So, so there is no black and white answer actually.

Speaker 1 35:08
fair, but also super, super nice both sides illuminated. I think we were able to take a lot with us. Next question also in my opinion, I think super important, you have already addressed some of it.

Speaker 1 35:18
The role of MVP approaches in the implementation of EHS business models. How would you assess and describe them?

Speaker 2 35:28
From my point of view, it is actually the only feasible way, which is unfortunately too rarely taken. Because there's no point in locking yourself up for two years and then doing another design round and then you design everything and then you make a big bang at trade fair XY and then she realizes, yes, actually you should have bundled it in, with five out of ten

customers have now said, I'd buy it, if it were in there.

Speaker 2 35:57
Or you realize, yes awesome, now we've sold it, directly at the fair, we've shown it, we've sold it five times and you realize, oops, I can't deliver it at all. From my point of view, this is just such a German disease.

Speaker 2 36:12
So, on the one hand it has brought us to where we are, that we are perfectionists and super great machines and that's super edgy and then it can somehow jump five percent faster or, I don't know, jump higher, jump further, whatever.

Speaker 2 36:26
That's what you need on the engineering side, because otherwise you'll just have problems in the field, but with such business model, transformation or even going new ways or mindset topics, what equipment is, you shouldn't underestimate that.

Speaker 2 36:41
The main problem, you can do all the operational stuff, you can do it if you want, the main problem is more like this mindset topic, do we need that at all, do we want that at all and from my point of view you have to go for it sooner, otherwise you are lost.

Speaker 2 37:08
Briefly to your question, I turned off at some point.

Speaker 1 37:19
Role of MVP approaches for implementation was the question.

Speaker 2 37:25
Exactly. And that's why, from my point of view, with these big, transformative topics, and there, as I said, this is a topic now, but there are X topics that have this explosive power for today's business models and can really disrupt that, you have to somehow cut this huge elephant into small pieces and get it into digestible slices.

Speaker 2 37:48
And that means, just do an MVP and then do that with two customers, with three customers, expand to a small limited market and then suddenly you have 20, 30 customers, then you get feedback, then you can discuss it again at the Z level, because then you come out of this purely qualitative discussion, yes nobody needs that or yes everyone needs that or that sounds like the business model or that's the savior, you just come out of it and bring it to such a factual level, if you can't do that, then you always have such a camp discussion and I said earlier, if it is then somehow introduced with such a big bang and then does not fly immediately, Then it's dead again, because then they all come here and say, yes, I said it right away.

Speaker 2 38:30
That's why the topic snows small, then it's easy to depict even for such a company, because you don't have to pull all the processes in some way now, you have to build all the interfaces from scratch somehow, but just do it hand on your arm, do it manually, even if it's painful and just see if the customer wants and needs it at all and when you have your learnings, feedback,

then you can go to the C-level and say, yes the customers want this and that's our homework now, do we do it now or don't we do that, that's a completely different discussion as I said, this trench warfare, so one side says, if we don't do it, then we won't be around in ten years, I don't believe in it either and the others say, yes that's all fancy shit, actually this and that is more important and now let's not waste our resources with such flowers.

Speaker 1 39:17
Total. Considering the time. Short check in with you have a hard stop.

Speaker 1 39:24
Okay, great. Then I would ask the last question about the implementation. Did the Corona pandemic or the Ukraine war have they have a concrete impact on the implementation in the end?

Speaker 1 39:34
Did you notice something?

Speaker 2 39:38
Actually, with a project, yes, because then all budgets are questioned again, because you see, oh, now it's been three or four bad months. After you have to say, Ukraine, everyone was afraid at first.

Speaker 2 39:52
But if you look at the last year, it still went through the roof, so somehow 2022 but very, very much in the record year. And now you realize that the numbers are not so good anymore and suddenly the outlook is a little worse.

Speaker 2 40:08
Now every budget is critically questioned again. And everything that is not essential for survival now tends to be pushed back a bit in time.

Speaker 2 40:19
Then it means, yes, okay, you need this IT project, implementation project, costs us 150,000. We can still do that in our mid-24s, in this specific case. So, that doesn't have anything now.

Speaker 2 40:31
Factual with Corona, somehow, we can no longer go on site or Ukraine, we are missing any parts that are manufactured there, but that is more likely to be macroeconomic again, because the prospects are just impressing.

Speaker 1 40:46
Okay, super exciting. You said yourself that you experienced practical examples yourself. Is there anything else you can think of? Also, by name, if you can and are allowed to. Concrete practical example in successful Equipment as a Service, adoptions on the customer or provider side, probably on the bidder's side.

Speaker 2 41:09
Well, there must be something where you have access now, but then you can definitely watch Trumpf. They actually have that, so you can do Equipment as a Service from to.

Speaker 2 41:22
Sometimes the customers call it, we have Equipment as a Service Offering and then it's actually kind of like leasing, where there's still some kind of service in it, where I say, yes, well, that was also available from 20 years ago with leasing, that's somehow nothing new. And Trumpf actually packed in an operating model.

Speaker 2 41:44
Well, the customer doesn't even provide an operator anymore, but they do it 95 percent completely remotely, if the machine somehow has to be loaded with a new program, they do the complete production planning, they chase the parts through, if a fault comes, they try to fault it.

Speaker 2 42:00
And that's just once, I don't know, there's a part stuck somehow, then they call and say, can you please go away and take the part out. Otherwise, they don't even need an operator.

Speaker 2 42:10
So, that's pretty cool. Where do you look at DMG, what do they call the Razor or something, they also pay your machining center per turn piece. Yes, these are relatively well-known examples from hardcore mechanical engineering, but they are already being sold.

Speaker 2 42:31
Where it's not just kind of fancy marketing presentation or cheesemaker compressors, they've kind of paid compressed air per cubic meter. You'll probably know that too. Rolls Royce Power by the Hour has been around for, I don't know, 30 years or so.

Speaker 2 42:52
But I guess, Käser, DMG, Trumpf, the last two as rather newer cheesemakers actually make quite a difference. I think these are topics that are also driven through the village like a pig at the congresses, always as a benchmark and best practice.

Speaker 2 43:10
Now I actually know a little bit about the background of Trumpf and Trumpf is also very good at marketing. As mega horny as they portray it, it's just not that big in reality.

Speaker 2 43:24
So that makes such a small thing in terms of sales.

Speaker 1 43:29
Well, I don't know how much you can promise about it, but I think it's super exciting to get into it for a moment. You then say more marketing, perhaps more appearance than reality, what exactly do you base this on?

Speaker 1 43:42
What do you think is the reason for this?

Speaker 2 43:45
Simply out sales. So, if you just look at Trumpf now and then read the press release, then it comes out as if they only sell the model. So, 50 percent of the turnover is made with it, but in

fact it's just kind of 0.05 or so, so nothing.

Speaker 2 44:08
That's why it's just being driven through the village like a pig on the marketing side, but in fact it has with the real business of Trumpf, so it's zero impact, whether they have it or not. I say it's the same for us consultants.

Speaker 2 44:20
So, such a project, it doesn't make me richer or poorer. But you can say we're doing the fancy shit. Even if it's actually for my, no idea, a million euros in sales, this one project is now more or less not relevant.

Speaker 1 44:51
Yes, exciting. In any case, in view of the time, I would like to give my colleagues a short opportunity to ask a question, if you like and if you still have two minutes.

Speaker 1 45:02
Yes, that's natural.

Speaker 4 45:05
Yes, I have to collect myself first, because extremely exciting information that we get from you, actually...

Speaker 2 45:14
Were you a bit congruent with the others?

Speaker 4 45:18
So, your interview is definitely my favorite interview, I have to say. So, I would therefore like to tie in with Trumpf again, for example. What do you think were the success factors for Trumpf to adapt the EaaS model?

Speaker 2 45:38
We have formed our own unit. We said, well, open the garage, you sit down. You're doing that now. You don't have to deal with the normal process people here and see how you can get that into the processes here.

Speaker 2 45:49
You're just going to do it now. And if it works, then we think about how to scale it. So that was this MVP approach. Just being an MVP with Trump is still not an MVP startup approach.

Speaker 2 46:00
That was still pretty corporate-heavy. That's why it took a while. But if they had tried to do that in their normal structures, it won't happen today. And that's still the case today, that they have many, many degrees of freedom and are allowed to spin around.

Speaker 3 46:15
Hm.

Speaker 2 46:16
For example, I'll take my favorite example again, because that's where it actually fails

relatively if, they are not separated from Trump in the normal accounting, but they fix it with somehow a 50 Euro start-up software from the Internet.

Speaker 2 46:35
Because they just can't get it into their own IT like that. And so that's exactly this MVP approach, but just like I said, corporate MVP, so it was still long and tough and painful.

Speaker 4 46:47
Can you tell us a little bit more about your own team? So, in terms of how were they equipped in terms of personnel, financially, yes, the freedom of movement and freedom of choice that they had, can you elaborate a little bit more?

Speaker 2 47:03
Yes, so in any case it started with a product manager who was supposed to sketch this whole topic in the first place and then design, how can we basically do that? Do we have an operating model separate, do we not separate it, which services do we include, what not, how do we make risk distributions?

Speaker 2 47:21
There was actually a bit of a budget that you could buy more precisely. I don't know if they were consultants or financing partners, but in any case, there was also a bit of a consulting budget.

Speaker 2 47:33
And then you founded a small team relatively quickly, where IT was also involved. R&D was then involved, because they were still thinking about whether they might need new interfaces somehow.

Speaker 2 47:45
And then I think relatively quickly also a lot of technicians. And then they tried to bring it to the customer and did everything with their hands on the arm in the beginning. So, there was a technician working almost full-time with a machine.

Speaker 2 48:09
Today, a technician can, I think, manage 25 machines somehow. So that's where he does the technical troubleshooting and stuff like that, but also the production planning. So, they made extreme efficiency boosts, but in the beginning, they said, we were all manual, we have no idea.

Speaker 2 48:27
And there were just eight people, then busy with a customer, of course that was 0, not profitable at all. And I know they're at that level now, now they're approaching a break-even.

Speaker 2 48:39
But they really have to scale it, otherwise they won't be able to do it.

Speaker 4 48:45
And how was that sold to internal stakeholders? So how did they, I would say, earn this freedom to be able to test it like this?

Speaker 2 48:55
This was actually top-down, an innovation topic that was initiated by (name anonymized), who is CTO. In other words, commissioned by the owner and the board of directors as a man of power. We need that. See how he can do it.

Speaker 4 49:15
We have now also tried to get in touch with a lot of people from True Services, which means also the area. Could you help us to gain a few more leads, because we would love to deepen that even further with them.

Speaker 2 49:33
I can try it if they were up for it now. Well, these are my older colleagues, but they are always super busy. And I needed them the last time for an exchange of experiences in the consulting project.

Speaker 2 49:44
Not because I didn't know, but sometimes as a consultant you still need someone else to say, okay, that's not just the consultant who is telling some stories now, but they really do it that way.

Speaker 2 49:56
There was also extreme counting. It took me four weeks to get an audience. But I can try. I can't promise it.

Speaker 4 50:04
Yes, very much worth it.

Speaker 1 51:02
Okay, sure. Okay, great. No, then, as long as Jonas doesn't have anything concrete left.

Speaker 3 51:10
Yes, I actually had a question again, to maybe take a step back to the implementation and the operational part, maybe a bit more generalist, you have now mentioned, IT, pricing, but how would you describe such a classic implementation plan, what are the pillars that you definitely have to go through once and maybe again in terms of timeline, If you can generalize it that way?

Speaker 2 51:36
Basically, that's always the question with consulting projects, do you stop at the design of the product and then prefer to say customer yourself, or do you just have the definition of the operating model in your scope, then the project somehow goes on for four weeks longer.

Speaker 2 51:54
And then I really had to clarify the sales approach. So, who sells this and how? How will he be, I don't know, how will he be incentivized? How does that fit in? Whose kind of doing the sales documents, marketing?

Speaker 2 52:10

This is definitely a stream. The second, of course, is the processes. On the one hand, there are the handling processes, the admin processes that sit in the background. As I said, one is just writing the invoice, but of course also this whole contract management and I don't know, requirements management.

Speaker 2 52:30
That's it on the admin side, but then also the actual delivery processes. You usually have to adjust them a bit. That's the second aspect of the processes. And then you actually have it.

Speaker 2 52:47
You still have to look at IT, where do you have to support and how, but that's basically it. So, you've got to have delivery admin processes and sales processes, you've got to smooth it out.

Speaker 3 52:58
Is there a process or a point that is more or less critical or is particularly critical, where perhaps a project is often in danger of failing?

Speaker 2 53:11
If you want to scale, then you definitely have to get it right on the IT side. Now from the project point of view, whether you can do it or not, or whether the customer then judges it as a success.

Speaker 2 53:28
It's all process work. So, you need all three. I'll say the least critical value, if the distribution doesn't work, because then you just don't sell it. Then it's annoying.

Speaker 2 53:39
But it would be worse if you sold like a fool, but you just don't have the delivery and admin processes, because then it flies around your ears. So that's why, I'll say, more critical to success, or you can't say at all, of course both are critical to success, but one is just relevant to sales and the other is whether you can deliver.

Speaker 2 54:01
So, you can keep your customer promise, it's about customer satisfaction, it's about risk management. How much will you incur then? So, yes, you're looking at yourself, don't want to pin me down there now.

Speaker 2 54:16
So, you just need all three. I don't know what's most important now. If you don't sell it, it's stupid because you did it for free. But if you sell a piece of junk, then it works, then you could have let it be.

Speaker 2 54:25
Then you might have even more scissors in.

Speaker 3 54:28
Thank you.

Speaker 1 54:31

Okay, then also considering the time, I would definitely fire you now. At this point, however, I would like to thank you very much again.

Interview Transcript Participant 11

Speaker 2 00:16
I'm at (company anonymized). So, I have a focus on, let's say, the strategic part, the conception of the models, setting up the operating models, calculating the business cases and then also defining the requirements and starting the pilot.

Speaker 2 00:34
This means that the real introduction and the technical implementation are done by my colleagues. But at some point, before, I think three or four years ago, I slipped into the topic because I was doing a service project.

Speaker 2 00:47
And then there was a little bit of a question, okay, can we offer this differently? Then the solution was that we now offer the system or the machine with service in such a new model. And that's why I spent the last three years exclusively doing Equipment as a Service topics for various European machine builders, including a plant manufacturer, which was a bit more difficult, which certainly had a different touch.

Speaker 2 01:09
But that's why I would say that's really in my focus on whether you make sense for the companies where we are. What is the financial potential of this and what does the solution look like?

Speaker 2 01:19
So specifically, what is the customer really offering? What do his customers pay for and what do you have to be able to do for it?

Speaker 1 01:29
Okay, exciting, to get straight into the questions. You mean that now the last three years have been supervised or almost exclusively supervised this topic. To what extent would you rate the familiarity with the concept of Equipment Access Services?

Speaker 2 01:45
So, I would say that by now 80 percent of the companies we deal with, in which we speak, already know the topic. And to have some kind of point of reference for this, if only because it is the pig that is currently driving consultations through the village.

Speaker 2 01:58
That's why they can't avoid it. But I think there are still a lot of people who say it doesn't make sense for us or isn't quite right for us for a variety of reasons. And most of them need some kind of impulse from outside, be it lectures, seminars, congresses, or consulting products, to say, okay, what exactly do you mean by that?

Speaker 2 02:22
Because what you wrote to yourself is why the low level of awareness or the low level of acceptance is, because it is completely unclear what is meant when someone says to you, I want EaaS for the customers.

Speaker 2 02:33
So, most people immediately think of this big topic. Your kind of paying per well-printed page, per something. And then there's this stupid Rolls Royce airplane example, which is a great example, but which everyone has used at one time or another, and then you say, okay, come on, leave me alone, doesn't make sense to me.

Speaker 1 02:55
Okay, got it. It is precisely the role of consulting that I want to go into in more detail in a moment. Who would you say are the typical customers of such equipment as a service offers?

Speaker 2 03:09
You mean the customers of the machine builders or the customers who offer it to people?

Speaker 1 03:14
Both, so who are the typical customers who offer such equipment as a service offering, so to speak, but also as customers?

Speaker 2 03:23
So, I think basically from the customer's point of view, the people who use the models and buy them from machine builders, you can see that it's actually, that the largest customers are not necessarily the most interesting segment, because they are so big and so strong, they can negotiate contracts anyway as they want.

Speaker 2 03:43
And they usually have enough money, so you're going to have some areas where you tell a major customer, I always have five forklifts around anyway for emergencies, I don't need a contract.

Speaker 2 03:54
This means that it is difficult with the large customers, there are a few cases where it makes sense if they are either private equity owned and want to reduce their costs extremely, but I would say, from my point of view, the most interesting segment is really these medium-sized customers, because they often don't necessarily have their own maintenance team, because you have to think about it, a huge company like no idea, an Aldi or whatever, they have their own maintenance crews, they can do the service themselves, they don't need anyone to do it for them.

Speaker 2 04:26
If you go to this mid-sized segment, you have a lot of companies that use the machines or whatever, but they don't have people who can maintain it, in the quality. That's why this mid-range segment is the most interesting for me.

Speaker 2 04:38
I think it's basically interesting for every company to shed light on this. I also said it in the seminar, I think every company should have an opinion on whether it makes sense for us or not.

Speaker 2 04:52
And then there are different gradations of when it makes more and less financial sense. I think it's always easier when the equipment is more standardized. This means that there is less need

for explanation, which means that you can use certain parts of it again with the equipment afterwards.

Speaker 2 05:08
And it's always easier, let's put it this way, the more complex systems or machines are, the more the customer needs help with it. And then he also needs service for it and then he is also interested in working with you.

Speaker 1 05:27
You've just touched on the second point, so recurring features a little bit. So, when it comes to customers, these are more likely to be medium-sized customers who may not have their own maintenance crews. Are there then even more features, both on the customer and on the provider side?

Speaker 2 05:49
Yes, so you have a very clear thing on the provider side that you can recognize. We've had a lot of conversations now. It's difficult for companies that have money very close to each other in terms of technology.

Speaker 2 06:04
We have to pre-finance the machine first. There are different ways to do this, but they usually have to have some money. Or they just go to partners, like Unigree and with the Relayer, what they do there and do it together for us.

Speaker 2 06:17
But it has to be a company that can handle it on its own from a capital point of view. For many, this is somehow the deal breaker relatively quickly. I think what is very, very important is that if I think about the products, the customer characteristics, if I think about the product, the machines, then, as I said, standardization, the more, the better.

Speaker 2 06:40
Complexity, the more, the better because the customer needs you. And the third is a bit of user behavior. So how often do you use this machine? If the machines usually run through the whole day, for free, because then the customer can plan himself, it can plan, it is easier.

Speaker 2 06:58
However, there are always branches of industry, such as construction machinery, that are used for one to two hours a day. That is, if you were to offer this in an hourly model, an hour would fit 5000 euros, makes no sense.

Speaker 2 07:11
That means you have to pay attention to how often these machines are used in the plant and does it even make sense to plan together, okay, we plan with X hours, then we calculate that based on that.

Speaker 2 07:21
So that's why, I think you have to keep between the customer characteristics and the systems and the machine characteristics.

Speaker 1 07:28

Okay, you had a lot of features. Nevertheless, how high, or how low would you estimate the need for such solutions in practice?

Speaker 2 07:53
So, with the customers who buy it, huge, there are a few very, very few customers who don't want it, for a very simple reason. They have too much money. Especially when you go into the MedTech environment, they tell you, we have an extra machine, standing there doesn't interest me.

Speaker 2 08:09
And if it breaks, you'll come within three hours, heal and I'll pay a lot of money for it, but I'm not interested either. They have, so if the customers are extremely financially strong, then it's not interesting for them.

Speaker 2 08:21
And that's why that's not necessarily where they go after you. On the provider, all other customers want to have that, because always you can make payment more flexible, whenever you can make your expenses plannable, there is something for everyone.

Speaker 2 08:35
So that has no disadvantage for the. And on the provider side, I think it's crucial how urgently they need to change. If the current sales, machinery, or leasing business is going well and there are no new competitors on the horizon who want anything, then the pressure to change something is relatively low.

Speaker 2 08:57
This only comes into play when you go into industries that are slowly realizing that they are selling fewer and fewer machines, that they have to think about how we can make sure that more people want my machines.

Speaker 2 09:09
Often there is somehow, you can see, there is a company CHG, which is such a leasing provider, which also offers such models in the meantime. They have nothing to do with any machine builders but offer such an as-a-service model, for example a Heinrich forklift.

Speaker 2 09:24
And so external players are gradually coming in, who might then take your market share. And there was one thing that I had shown in the seminar was, it's already expected on the market side that a significant part of the leasing volume will move over it, because everyone wants to have more flexibility.

Speaker 1 09:44
And what are the industries that are most predestined for this or where perhaps the most projects in this area are supervised?

Speaker 2 09:54
So, where it is, as I said, where it is definitely called, everything is about intra-logistics. So, it's forklifts and the like. I think there is simply a lot of demand and there is also a high level of overcapacity in some cases, because companies sometimes always have two forklifts

around.

Speaker 2 10:08
And it would be better for the whole world if they didn't have that, but just planned a little better. Because, and this is, we'll hear about it again in a moment, but the topic of sustainability is also extremely important.

Speaker 2 10:18
Then I think it's all about an area where something is produced, and the output quantity is relatively constant and predictable. And I think the only branch of industry where it’s less plant engineering.

Speaker 2 10:38
So, wherever the machine and system are extremely customized and made extremely individual for the customers. It's much more difficult. I don't say impossible, there are also possibilities to do something.

Speaker 2 10:49
But wherever you can't use the machine again, this reusability, that's just difficult because in the end, you can throw the things away when they are returned. All other industries in the larger mechanical engineering sector do not have an exclusion criterion, at least per se.

Speaker 1 11:08
Okay, then you would say that it's not necessarily the industries at all, but actually also these recurring features like reusability of the machine, less complexity of the machine.

Speaker 2 11:21
Exactly, you still have a bit of the topic of service life, which makes it even more difficult. So if we have that with a, I worked for a pump manufacturer where the pump is in the house for 30 years, it's a little bit more difficult, because you have to convince the customer that he then has something for 30 years and he doesn't have to worry and he shouldn't buy it, because actually everyone knows whether x years makes buy more are.

Speaker 2 11:44
But in that case, you have to convince customers not to buy it, because that's very, very important. The model will always be more expensive than buying or leasing. By definition, because you have the service in it and because you hedge the risk more.

Speaker 1 12:00
Okay, got it. And then, perhaps, a next question, to address the challenges and concerns, or yes, the inhibitors somewhere. What would you say, are there any obstacles maybe starting on a macro level?

Speaker 2 12:18
Yes, so you often have the big concern of the economy at the macro level. So today you sell 100 machines in such a model. You have a certain flexibility in it that says.

Speaker 2 12:33
You can return the machines within 3 months, so with 3 months lead time. Then the economy slows down and all of a sudden, all 100 companies return their machines. So, that's the worst-

case scenario, because then your whole yard is full of machines.

Speaker 2 12:46
And that also happens with companies. With rental companies from the trucks and so on, if the economy is not running, then everything is full of trucks in the yard with them. And that's kind of the most important thing, let's say from a macro point of view, and also the one where you say, okay, you have to be careful.

Speaker 2 13:05
I think technological megatrends, you have the topic of data security. Because one of the basic conditions for this model is, first of all, that you have some control over the asset. So, you need to get information about the asset.

Speaker 2 13:20
How does the customer use the machine? If you don't have that, you can actually forget about it. Because if the customer scraps the thing, you have no way of proving that it was the customer and not you.

Speaker 2 13:31
And a lot of companies are saying very clearly, my customers don't want to share data with me. But even there, to finally be, it's turning right now, more customers are willing to give up their data, you have to be very clear about what you get in return.

Speaker 2 13:43
Well, I don't like to give away my data either, but if someone tells me I can continue to use Google Maps for this, yes well, then just take my data, you have to give something in return for it.

Speaker 2 13:54
Regulation, that's actually, I would say, regulation in certain markets, there are industries where you can't change things. So, you can't convert the asset and the service together, because in hospitals, for example, in the MedTech sector, things have to be put out to tender separately.

Speaker 2 14:13
And that's why it's not quite interesting for some areas. Demographic trends, which honestly plays more in the direction of Equipment as a Service, because what you'll hear everywhere, it's incredibly hard to find good people, especially on the technician side, even for companies that have a lot of technicians, it's always difficult.

Speaker 2 14:31
And with these models, where you sometimes really take over the maintenance, you actually help them? If this is demographic change, it helps the companies, but then it makes it better to use such a model.

Speaker 1 14:44
Okay, maybe jump back a question for a moment, what types of machines do you think are best suited for such Equipment as a Service models and why?

Speaker 2 15:04

You mean you can't reduce it to branches, you can only say standardized equipment in a high-volume business. At first, everyone fits in.

Speaker 2 15:19
There is no market that falls out because of this.

Speaker 1 15:30
Okay. Thank you. Then maybe continue with the point challenges. At the enterprise level.

Speaker 2 15:49
So, on the marketing side, I don't see any. Financial drivers are huge, because on the user side, it's great, that's what everyone wants. On the provider side, as I said, you have to pre-finance the things.

Speaker 2 16:01
And I'm sure you've seen this well-known fish graphic somewhere. That's really the case. So, if you're planning today, you're going to sell 50 assets and tomorrow you're going to lease them, whatever, then you're going to have a huge dent in your revenue.

Speaker 2 16:15
That's why the financial point of view is a topic that most CFOs are not exactly enthusiastic about. Operationally, it's just super, super difficult. So, one of the reasons why a lot of companies don't do this or have failed to do it is because it's the mother of all transformation.

Speaker 2 16:32
So, you have to imagine, before you release your machine in the model, you first have to know what costs will be incurred over the next 5, 6, 7, 8 years. Many companies can't do that because they simply don't know how often something happens.

Speaker 2 16:44
You have to know exactly how often which screw breaks on average, how often do I have to replace which parts on average, how often does a technician come, what does he cost and have to calculate it in such a way that on average you still earn money.

Speaker 2 16:56
If you do it wrong or if Sixt calculates its rental car rates incorrectly, then they will pay extra for every car. And that's why it's super, super difficult to do at the operational level.

Speaker 2 17:07
You just have to be able to handle it then. Many don't have technicians for this. They then have to find partnerships with technology companies that do this. That makes it really complex. I think from a strategic point of view, there are also a few companies that simply don't do that, because they say that our products are sold and often have traditional reasons.

Speaker 2 17:26
If you look at the printing press industry, for example, then you have a Heidelberg printing press that has done it, but where there are no big success stories in the media. That's why a Webber from Heidelberger Druckmaschinen says we won't do that for the time being, so be careful with that.

Speaker 2 17:42That's a bit of a strategic reason. And organizationally, you have a huge reason within providers and that is that from the point of view of an old engineer and salesman, you are impoverishing your machine.

Speaker 2 17:57
You know, you're no longer working towards this big sales moment, I don't know, 30 million euros are being pushed over the table again, but you're selling the thing off and mixing it with service and that's why it's actually not that much of a highlight.

Speaker 2 18:12
Corona pandemic and Ukraine war. So, Ukraine, Russia are for most companies that don't have the or many companies don't have large markets, the many and that's what I would like to take, that deliver something, but it's not the huge sales pie now.

Speaker 2 18:36
But what is for everyone is the topic of supply chain. So, we all have huge problems getting the parts in and that means you have a certain problem because you know that the machine just delivers, sometimes in a year or two or so, and that's why the model is often not relevant.

Speaker 1 18:59
Okay, if you now look at the last three years, maybe get Ukraine, once excluded, but with regard to the Corona pandemic, you have noticed that such solutions were increasingly added, then also after the Corona pandemic perhaps keyword liquidity bottlenecks or something similar?

Speaker 2 19:21
I think that more companies have at least looked to see if this makes sense or not. Because, of course, they also want to position themselves a little leaner, because they have also postponed investments in some cases.

Speaker 2 19:33
You may have planned to buy a new machine, but then you didn't do it and said, ok, we can't check whether we can get it financed here in any other way.

Speaker 1 19:44
Okay, then maybe again on the provider page.

Speaker 2 20:02
Yes, I mean, if you prove you're a customer and you're a machine buyer, then that's actually a no-brainer. Because the only reasons you don't want to have an as-service model is because you're so traditional that you say, I want to own what I have and I don't care what's cheaper, but I want to own my assets and treat them the way I want.

Speaker 2 20:27
Understood? The other thing is you have so much money that it just doesn't matter. That's just a few MedTech firmware, that's really the case. And the third thing is that you think you don't trust the whole roast.

Speaker 2 20:40

So, you have such a good maintenance team that you don't trust that the provider can serve you the way you want. For everyone else, there are only advantages, if you think about all the sharing or subscription stuff that we use.

Speaker 2 20:57
This has only advantages. If you, there's no downside, other than you love owning stuff, then of course it's the very last thing. The part that is often mentioned is that with machines that you might move around more often, the customers don't want used ones, so at least from customer conversations I have made the experience that it doesn't matter at all.

Speaker 2 21:22
So again, I asked a customer directly and he said, you are welcome to provide me with a used machine if you guarantee that it will work.

Speaker 2 21:32
I don't care about anything else. And that's why there are really no reasons against it, except for the three just mentioned.

Speaker 1 21:43
That's a bit along the lines of the main thing is that it works, and I can use the machine, but there's not a certain risk somewhere or maybe if you then just outsource these competencies completely and don't know anymore, okay, what, how to operate the machines, for example, but.

Speaker 2 22:00
So, I thought that operating is one thing. I think the topic is operating, most of them will do that themselves. But when it comes to service, many people don't have the skills at all.

Speaker 2 22:09
You have smaller companies, they have someone in there, the big ones have whole teams of service people, but the medium-sized ones, they have such a hard time finding someone to do it that they are actually incredibly grateful when someone can do it for them, because they can't find people.

Speaker 2 22:23
Even if they are in some rural area, somewhere in the middle of nowhere, then they don't find perfectly trained techniques. And that helps a lot that they can map that.

Speaker 1 22:37
Okay, interesting. Exactly with regard to the time to perhaps go into the next questions again. At the beginning, it is briefly mentioned that the consultations advertise there.

Speaker 2 23:01
So, what we're doing very actively is marketing, so with these kinds of lectures, events, white papers that are published, congresses, where we speak, where we just say, hey, this is a model where I should have their opinion, and we'll discuss it.

Speaker 2 23:17
We have so many different lab formats, where we say, we'll come here for a day, it won't cost you anything and then we sketched it out together, which could look like for you and then you

can think about whether we want to buy a product afterwards somehow.

Speaker 2 23:31
And it's important that we say, we don't want to sell the topic now, we just want to sell the opinion to you. Because if you say here, for example, the adoptions, I always say at the beginning, we want to calculate with you whether it makes sense and if it doesn't make sense, then it's okay, then the topic is also over.

Speaker 2 23:47
But you have to decide it for yourself once and then be through it and not think about it again and again for the next three years. Projects for us, super attractive, of course, because it's a highly strategic topic, which is usually hung up at C-level.

Speaker 2 24:03
This means that you always have the highest exposure and really topics where there is a lot of pressure, but where you can also deliver quick results. 99% of the projects are carried out on the provider side.

Speaker 2 24:17
On the customer side, these are more likely to be purchasing projects, where they just want to do that. Well, for example, I've never done a project for a customer before, because the questions just do that, but the providers are the ones who have to position themselves differently.

Speaker 1 24:41
Super then maybe a bit of implementation and gladly in practice play.

Speaker 2 24:45
So, it's very important when implementing that you have to pilot, which means you choose one, two, three markets and then you have a pilot team. This means that someone is at headquarters and someone in the restaurant is doing it, then you have to train the Salesforce, then you have to do marketing and then you have to sell this model once and monitor it.

Speaker 2 25:01
I would say you just have to do it for half a year and see how it works. The success, here is also exactly that, so old people that they do this. So, you have to have at least one person in the pilot market who does just that.

Speaker 2 25:14
And you also have to have at least one person in the headquarters who is responsible for it, otherwise it won't work. The hurdles are a lot of people think this suck, to be honest.

Speaker 2 25:23
Some salespeople don't understand this, they find it too complex when it comes to operations. And you simply have a huge need for change with the customer. This is also customers who don't understand it in the first place, that it's the only good one, you have to explain it.

Speaker 2 25:41
Degree of digitization, I would actually say that helps. But what is much more important is that customers with a high degree of digitalization are usually also those who are a little more

willing to change.

Speaker 2 25:52
That's why it's easier with them, because they may have already done something new in different iterations and that's why it helps. A high proportion of service helps 100% if they are already doing it, who are used to doing business in a different way than just selling new machines.

Speaker 2 26:13
That's why it's super important. Implementing risks, quite simply, do a consulting project. You have to do MVP, you have to do it in pilots, and you have to do it above all, the pilot must not have the approach, we want to save the world here and make sales, but to test it and then change it.

Speaker 2 26:34
So, it's very important to always have an exit for the implementation.

Speaker 2 26:52
Practical examples, the clients I work with, I'm not allowed to tell you any of them, that's why it's difficult, because with them it's extremely strategic for everyone and they're afraid that someone will copy it, that's why it's a bit difficult.

Speaker 2 27:04
Project tracking, apart from the fact that of course they worked with us as consultants, was that the project was hung up on the board and then always had a dual leadership at project management level.

Speaker 2 27:21
Sales, service and then at some point also finance. So, I would say that one of the main reasons why it works sometimes is really that they had such a mixed structure in project management.

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Speaker 2 00:26
I've been through the B2B tech world for about 15 years, I've been able to pick up different tastes from fintech to IoT, industrial IoT and to be precise, system integration, eHealth, so I was allowed to prepare very different fields, always came into the organization from the marketer's point of view.

Speaker 2 00:53
For me, this has always been dominated by the question, how does the customer group work, how does the market work, how can you best position the offer in the market. But since I'm very tech-savvy, it usually led to me getting more and more involved with the offer to the point where I was responsible for all the offers.

Speaker 2 01:13
That means, so at some point it also went in the direction of product development and yes, that said, I was allowed to do that for a while. Through the tech industry, I then had many points of contact with service models.

Speaker 1 02:04
Well, then I would start directly into the questions. So, yes, and it's all about familiarity with the concept. Machine manufacturers and their customers are familiar with the concept of Equipment as a Service.

Speaker 2 02:28
Well, we have also done initial surveys on this topic ourselves, together with Forsa. Our result was that we came to the conclusion that actually every industrial manufacturer has a certain scale.

Speaker 2 02:43
So of course, not the smallest manufacturers and the smallest medium-sized companies. But I'll put it this way, the upper middle class and larger actually all have a very strong understanding of equipment as a service and all or 80% plus say that they would actively work on an equipment as a service model.

Speaker 2 03:04
Now I also want to say that they have been saying this for a relatively long time. And what exactly "active" means is a moot point. So, I think they have very different understandings of speed, and we also have a very different basic starting point.

Speaker 2 03:20
So while some are already a bit more digital, they actually have the necessary infrastructure to think ahead of such a model at all. Others are still at the very beginning of their digital journey and are of course trying to make the quantum leap right now.

Speaker 2 03:39
And yes, that's a little bit, I think, the landscape first of all on the supplier side, on the demand side, that's a very exciting question. We haven't heard equipment as a service cry everywhere

in the market along the lines of, so where things are now, we can't go any further.

Speaker 2 03:59
And our machines are all underutilized. We don't have any opportunity at all to work my way forward here. And we would only buy new machines if we were presented as an Equipment as a Service model.

Speaker 2 04:10
So, this also does not take place at all on the customer side in terms of strength. On the contrary, there are established models that are not just purchases, and you can also take different approaches to minimizing certain risks or to perceiving other business models in the consumption of this good that are not equipment as a service.

Speaker 2 04:34
That can be leasing, it can also be other forms of financing. And yes, as I said, that's also up there, i.e. that the market is not yet ready to say, okay, so I'm clearly demanding from my industrial partner that service be offered.

Speaker 1 04:55
Now let's talk about the customers. Who do you think are the typical current customers of Equipment as a Service offered in mechanical engineering. Also, according to who the typical providers are.

Speaker 2 05:11
I have to say, I can't answer that in the sense of typical. So, we have seen it completely across the whole spectrum, that there are approaches or attempts to do this in every market. And both the providers and the customers have differed in all these plants in terms of their problems, i.e. how they find equipment as a service interesting at all, up to the upside, i.e. the access that can result from such a model, which is always completely different.

Speaker 2 05:41
You can say, if you really try to put it on a level, it is always the case that an Equipment as a Service offer is offered, if somehow the risk from this transaction can be modeled away and thus gives a strong added value for the end customer.

Speaker 2 06:01
And on the other hand, two things have to come out of this risk modeling. One thing is for the capital side, it has to be financially feasible and, ideally, attractive.

Speaker 2 06:15
And at the same time, there has to be a logical starting point for the provider to make it operable. So, these are a bit of the basic requirements that you should sometimes look for in these markets in order to say, does an Equipment as a Service offer make sense at all or not.

Speaker 2 06:34
And then you can start to model that and say, what if, how would the actors have to line up against each other and behave in such a way that it makes sense to work together. But to say in general, i.e. if A arrives and B is, then Equipment as a Service should always be the answer.

Speaker 2 06:52
It's such an equation, unfortunately, we couldn't really identify the different industries in which we were active.

Speaker 1 07:03
And can you tell us about the industries?

Speaker 2 07:11
Well, we were in mechanical engineering, especially CNC milling, laser cutters. Then we were in the business, we called it rotating motors, so everything from electric pumps to large mine equipment, so everything that has such huge motors.

Speaker 2 07:30
We were in the coffee industry, i.e. from slightly larger industrial coffee machines. We were out and about in the world of schnapps at Jägermeister, we were at elevators, really pretty much everything had already been examined somehow everything there is to investigate.

Speaker 2 07:57
Yes, and as I said, it has always been different, not always useful.

Speaker 1 08:04
Who are the typical end customers?

Speaker 2 08:12
Well, the early adopters, that's what I would call them for now, because I think you have to cluster again in a really typical way, are first of all those who already have a very deep relationship with the providers and anyway look at a large machine park or several of these assets and therefore have a great interest in that these assets are maintained in the best possible way. But they also have a very good understanding of the price of this whole spiral, they know exactly what this afterlife of this machine costs down to the penny and then also want to see that if you fluctuate on such an Equipment as a Service model, that it is in a similar hemisphere in terms of price.

Speaker 2 09:00
So even there it's difficult, this idea of Equipment as a Service, which it has, so to speak, you take a price arbitrage through all this risk, which you do yourself, these financing costs, and the service things that you do better there now and that maybe also needs a little less service for him.

Speaker 2 09:20
You take all that and you can price it fairytale-like, so that's just not the case, but the providers already have, the customers already have a pretty good understanding, especially those you want to tackle first, have a very good understanding of it, are also very price-sensitive, which is also what these models do, I'm not going to say, that makes it attractive, but perhaps a little more difficult to monetize than the textbook, as one might suggest, than, as I said, the textbook is then so suggested.

Speaker 1 10:10
What are the common characteristics or requirements of Equipment as a Service providers or

the end users of such models?

Speaker 2 10:31
So really consistent, we couldn't identify clear features. So, as I said, perhaps the most likely thing to say is that especially the customers who either already have a very deep relationship with the provider are typically such first movers, or perhaps you could also say that the customers who use the equipment see a very high strategic value in the equipment.

Speaker 2 11:03
So, for their own business, I have to say that again. If this relationship exists, then there is often a great interest in talking about such things and calculating and thinking about them.

Speaker 1 11:20
How high or low would you rate the overall demand for Equipment as a Service models from the respective perspectives?

Speaker 2 11:39
So, the theoretical need is huge. It's always these great billion-dollar traps that we throw around the medals on marketing slides. The real need, I want to be honest, I have never seen it in this dimension before.

Speaker 2 11:57
And I don't know of any equipment as a service business model in the industrial sector that has taken on a magnitude that would suggest anything.

Speaker 2 12:11
That's actually those big, big numbers actually reached at some point. So, from my point of view, we are still trapped in this test phase at the moment, where individual machines and individual customers are always lifted onto such models.

Speaker 2 12:27
And you have to ask yourself honestly, are you doing it more for the sake of the customer or is that really a market need? I haven't been able to give a definitive answer to that yet. So, I think there's a big discrepancy at the moment between what the total theoretical value is, because you just say, so and so much industrial equipment is out there, and so much industrial equipment is better financed in some form than bought.

Speaker 2 12:59
And as a final conclusion, if I could finance it anyway, I can actually take it as Equipment as a Service. And then you kind of put up with it. That's for one point of view, but as I said, I haven't seen the realization of that and now really a big roll-out factor of that.

Speaker 1 13:17
Okay, I'm super excited. Come to the industries and then also a little more specifically to the machines.

Speaker 1 13:27
Which industries do you think are predestined for the adaptation of Equipment as a Service?

Speaker 2 13:35

The industries are predestined. Before, I would have wished that they had understood this and done it more. Really difficult to say.

Speaker 1 13:49
Yes.

Speaker 2 13:54
Well, I think it was actually always excellent when the degree of digitalization of the machine is already within a reasonable corridor. The second is a relatively long service life of the machine.

Speaker 2 14:12
The third thing is, if the machine is interoperable, i.e. transportable, interchangeable and without much customer customization, so that you can also build up a gray market, this machine can actually be exchanged for each other.

Speaker 2 14:30
Because this is also a trap that many people have been encapsulated in, actually I would really like to do equipment as a service, but in reality, my machine is somehow still provided with some customer requirement.

Speaker 2 14:41
And that's actually a machine customer assignment. So, the fact that this is not the case, this machine customer assignment, is just brutally important. And then we tapped the machine side and then you have to look a little bit at the capital side again.

Speaker 2 14:59
What would actually have to happen is that the provider of the equipment as a service has better access to capital than the end customer, because only then does he have the arbitrage on the financing, that he can then also work properly and then again there must be financing institutions that do not consider this to be particularly risky and are willing to really implement this as a true Equipment as a Service model.

Speaker 2 15:29
So if that's the first time, you've already done a lot right and then, I think, you can push harder. What are such industries? I have no idea. So, we're always looking for them, but most of the time some of it is an imbalance and that's what we actually try to heal in the project.

Speaker 2 15:50
So, the degree of digitalization is not there yet, in which case you say okay, which means that we now have to push forward a digitization project. Or the access to capital is not there, so you have to say okay, we just have to look at how we can structure the capital side.

Speaker 2 16:06
And from that you can see a bit of complexity. Equipment as a Service is often equated with a digitalization project. However, it is just as much a financing and accounting problem as it is a digitalization problem.

Speaker 2 16:24

And in both fields, the industry players are usually not as strong as they would like. And they need partners to help them implement it in the first place, so that the customer can be embarrassed to buy it.

Speaker 2 16:40
And that's kind of the crux of this whole thing.

Speaker 1 16:46
What types of machinery or equipment in mechanical engineering do you think are best suited for EaaS and why?

Speaker 2 17:08
So, from my point of view, it must have a certain base price, the machine, why? Because if the value of the machine is too small, we have found the digitization of the machine is often too great.

Speaker 2 17:24
So, at some point you start to have to offer the margin of your own machine with the digitization. This is a stupid situation. So, you actually need so many volumes on one machine, i.e. Euro volume, that you say that all the digitization efforts result from it, actually disappear within this margin and sit well in it.

Speaker 2 17:49
So that's one in the parameter. Second, it still needs to be mobile. So, we have that too. More than once we have reached the limit where people say that there is no longer any movable property.

Speaker 2 18:03
This leads to problems again. So once the values aspect, check a bit, check the agility a bit. Yes, and then, I've already mentioned standardization.

Speaker 2 18:17
You definitely have to look at them. And ultimately, it takes a certain amount of mass. So, if it's individual machines, then we also got that in Equipment as a Service.

Speaker 2 18:31
But there is also the effort in no relation to the model as such. So, I have to say, actually this industrial coffee machine was close to the perfect asset to me, because they say it was around 25 to 30,000 euros.

Speaker 2 18:47
So, 100 euros of connectivity didn't do anything there. So, just a moment. So, at the same time, there was still a certain amount of it. So, there were not 100 machines of, but 10,000.

Speaker 2 19:07
So if you really cracked that for one machine, there was at least the theoretical potential to say, okay, we can do that for 10,000 other machines. And they were then really interoperable.

Speaker 2 19:19

So, you could swap them out. So, we were able to put one in Coffee Shop 1. And if Coffee Shop 1 didn't feel like using the machine anymore, you could take it, wait it once and take it to the nearest coffee shop.

Speaker 2 19:29So that was actually pretty close to an ideal scenario, I think, for EaaS in the industrial sector.

Speaker 1 19:41
Great, let's get to the challenge and concerns. On a macro level, what are the primary obstacles or concerns you see on the customer or vendor side when using Equipment as a Service models?

Speaker 2 20:12
So, from the customer's point of view, you can keep it very short. You shouldn't really be allowed to have any more concerns there. So, you can just say, okay, price maintenance is perhaps something that is a thorn in my side, but I willingly get involved with it.

Speaker 2 20:27
But I give up the entire operational risk of the asset. And that means that all these macroeconomic factors shouldn't really affect me that much anymore. So, I assume that I always have a competitive machine, that I don't have the last thing technologically, because otherwise I'll cancel my subscription.

Speaker 2 20:50
On the contrary, I rather assume that I will get new machines faster. So, on the customer side, it's actually the carefree pass and I let this carefree pass cost more.

Speaker 2 21:05
This means that when I pay, the usage is a little higher than I would actually pay if I were to manage the load, I say to myself now, and carry out my maintenance accordingly myself.

Speaker 2 21:20
So, on the customer side, in short, there should actually be obstacles again, still concerns, unless I say somehow that I am now permanently getting involved with this idea, that I have to deal with this premium and that it may no longer fit my business model at some point.

Speaker 2 21:36
So maybe that's the only thing I deal with as a customer. Provider is just the other spectrum of the problem. This means that I now take away all these problems that I would otherwise have had as a customer and now suddenly have to deal with them entrepreneurially.

Speaker 2 21:53
That's of course something that's extremely difficult for such an industry player. He is focused on transactions and on the sale of his machines, possibly even on the service business, and hopefully he has been doing this successfully for years now.

Speaker 2 22:09
Now he suddenly has to think about how to deal with optimizing this service intervals at the customer's own risk. He has to think about how I deal with failure on site before, he has to think about how I deal with technological leaps, he has to deal with how I cannibalize with

product before.

Speaker 2 22:29
This means that when new machine versions are created, do I release them or not or how do I monetize this further development. All of a sudden, these are all the topics he doesn't have yet, and he can deal with them now.

Speaker 2 22:42
And I always point out, that's always just the technical side, so like hand I have my machine. And on top of that, he has to struggle into the whole commercial side of it, from the sale of this model to the financing of the model, to the accounting tricks of the season.

Speaker 2 23:04
That's not one of his strengths either, he has to deal with it. And that, from my point of view, is the biggest obstacle to the premiere, because the industry players don't have the capacity, so they don't have the expertise, but above all they usually don't have the capacity to take on this extra work to achieve something now.

Speaker 2 23:26
So, he gets more market share, does he get more sales, does he get a competitive advantage, all of that is questionable for him in the first step. So theoretically, he could work it out for himself, that's also a nice differentiation.

Speaker 2 23:41
But this is the end result of a very long effort, the success of which is questionable to say the least. So, it doesn't come automatically. And then to take that risk, so to speak, I think that's the biggest barrier for the industry player to go for it.

Speaker 1 24:03
And now again on a corporate level, what drivers are there that would stand in the way of the whole, yes, anyway an adaptation? Now again explicitly.

Speaker 2 24:23
So explicitly on the company side you have to start again at the machine and can say the machine, the machine is actually designed for this and so on and immediately from the machine itself, as well as from the digital infrastructure that has to be underneath it so that such a machine can be operated at all.

Speaker 2 24:42
Well, that's a basic parameter that has to be met, that can be an obstacle. Once we have that, then you have to manage to convince the financial side of the company that this is a really good idea.

Speaker 2 24:57
If you say convince the financial side of it, that means they have to calculate first, what would that look like at all, how would it pay off, is it feasible at all. And in the end, it would even mean that they need a game to be able to put it into practice.

Speaker 2 25:20

So, a financier or a leaser or some kind of special purpose vehicle to build, so anything that allows you to do something like that at all. It's such abstract work for them, some of them have never had to do it before in their company life.

Speaker 2 25:38
And that's of course a big internal resistance that you have to break down first. Now we come back to the casus knactus. With what do you want to break this internal resistance, with the promise that you might be successful with it?

Speaker 1 26:57
Then I would now ask a question, what influence did influences such as the Corona pandemic or the Ukraine war have on EaaS.

Speaker 1 27:09
One thing at a time.

Speaker 2 27:20
Well, I think the Corona pandemic was actually the main driver for shedding light on the whole topic of remote again. And there was already the question in the companies not only, can the employees work remotely, but how well can we actually act on industrial machines remotely.

Speaker 2 27:41
And I think a lot has already come up that they may not be as far along as they would like to be able to have an effect on their machinery as it is now. Now you know that you are aligning your business model with the fact that it doesn't actually have to be a competence to be able to act virtually on this machine park.

Speaker 2 28:02
Did that maybe drive the worry a bit or really draw the challenge, I want to say, to say, okay, so this digitization thing, that's not nice to have here now and as we always talk about it, you have to do something, but if you really want to push an Equipment as a Service offer into the market, then this must become a core competency of the companies.

Speaker 2 28:27
And some of the industry players were very honest about that, and then they understood it. Unfortunately, this did not lead to an acceleration of this whole issue. So, the consequence was that the equipment as a service effort were scaled back, but at least you say, ah, we still have homework to do.

Speaker 2 28:51
So then this whole financing and accounting part, let's say, was parked and put on hold a little bit and in return we went back to the foundation of this connectivity and looked at how we can actually master and master this, so that we could maybe enrich our business model with other small variants on the journey to the Equipment as a Service providers, with remote services, with remote maintenance scheduling, i.e. smaller steps that create more value and can be interesting for both the company and the customer.

Speaker 2 29:34

But just a long way from saying this is now a full Equipment as a Service business. So, I would say that brought a bit of honesty to the market. At the same time, however, I think it has also led to a bit of persistence, not to make this leap to an equipment as a service provider, but more like something like a rethinking service offering.

Speaker 1 30:20
Thank you. And what about the Ukraine war?

Speaker 2 30:29
Did he do something again? I didn't think it was that way now. So, I thought the supply chains were already broken up before. The challenge that these machines were not available as quickly as one would have wished for was already a lived reality.

Speaker 2 30:46
Well, I don't think that added that much to it now. What it has done again, of course, in my view, has ushered in a time as far as monetary policy is concerned.

Speaker 2 31:04
So, because I think that was the year when people say the free money has come to an end, that of course had an incredible counter-effect on Equipment as a Service. After all, Equipment as a Service thrives on the fact that there was such cheap financing.

Speaker 2 31:20
And tell me, that was one of the main reasons why so many large institutional financing bodies have looked very kindly at Equipment as a Service, finally say a perhaps not quite so high-risk asset class at once with a longer maturity, horizon, where you can always invest well.

Speaker 2 31:39
Unfortunately, I think that just then said goodbye at this point. With the return of interest rates, it has at least put a major stress point on the price factor of Equipment as a Service.

Speaker 2 31:51
I think you could say that about Ukraine again.

Speaker 1 31:57
Great, thank you very much. So, then you have to approach us again from a positive point of view, so to speak. So, what would be the reasons for customers or providers to adopt EaaS?

Speaker 1 32:12
So, both from a macro level and from a company level, micro level.

Speaker 2 32:24
So, from the customer's point of view, quite clearly, we just said that the costs on chapters have gone up, interest rates are back, which means that they all have the challenge of capex investments that are a challenge.

Speaker 2 32:41
And challenge is still a very nice word, so it can become life-threatening if parts of the company's performance can no longer be provided because these capex necessary investments

fail to materialize.

Speaker 2 32:56
This means that there is of course a certain appetite on the customer side to shift certain capex to opex elements. Once again, this always has to be full equipment as a service, that's a question to be asked.

Speaker 2 33:10
But basically, if you have the opportunity to do that and of course then also give away something like load risk or other risks that go hand in hand with a view, I think that's always good for the customer and that's why it's still a driver, acceptance from my point of view on the micro level of customer sides.

Speaker 2 33:34
Of course, the provider still has the opportunity to simply bring a differentiating feature into the market, has the opportunity to assert itself at a different price point, has the opportunity to deal with the topic of further development and technological leap in the area of his equipment parks.

Speaker 2 33:59
So, he also has positive incentives to think this topic through and evaluate it for himself. Now it must be said clearly that the obstacles have increased rather than decreased compared to the last five years.

Speaker 2 34:16
So, the task of pulling up the Equipment as a Service model is not necessarily easier today than it was five years ago. That should be said, but I think the drivers of acceptance back then are still valid for today.

Speaker 2 34:31
So at least that's on the micro level for now, on the macro level. Yes, we've already looked at the topic of capital costs a bit, but unfortunately, it's not necessarily favored for Equipment as a Service at the moment, but I'm still thinking about positive macro drivers.

Speaker 2 34:57
Well, I think one of the drivers could of course be that if these technological leaps come even faster in the future, it will be more difficult to sell new machines on the market again and again and then operate all these different series variants in parallel with each other.

Speaker 2 35:19
And this heterogeneous product landscape, which then such an industrial player has, due to becoming more and more rapid in innovations, that is of course a pain point for him, which translates into opportunity would be a driver for saying, wouldn't it be great if I myself am master of a destiny and can see which types of machines I use where, because it simply fits in the best possible way and not because the customer wants to have the last one or so I think that's already one of the drivers that could then be put forward.

Speaker 2 35:58
But all in all, I have to say, I see a lot more challenges than drivers at the moment.

Speaker 1 36:06
Okay, does the Corona pandemic or the Ukraine war still have an influence on the positive drivers?

Speaker 2 36:20
from my point of view not at the moment, so on the contrary.

Speaker 1 36:42

Yes, ok, great. Then I would like to ask my colleagues briefly whether we want to continue with the funding or go directly to implementation.

Speaker 2 36:58
Well, we can touch on it, but I would definitely prioritize the implementation.

Speaker 1 37:03
Then let's do it this way. Good. Then I would continue accordingly. So, implementation of Equipment as a Service and if we are Equipment as a Service models are implemented initially.

Speaker 2 37:22
Of course, different providers and different strategies are pursued. As I said, some really want to make the full leap from, I don't have a digital-based offer at all yet, I now want to do the Equipment as a Service up to industry plans, which have approached this topic very successively and slowly and have already done an incredible amount of basic work, especially in the area of their service capabilities, and then at some point to say, so now the last logical step is actually to convert this into an Equipment as a Service model.

Speaker 2 37:58
And depending on where you are on such a spectrum, the implementation plans for such an Equipment as a Service model are diametrically opposed to the end, so one can actually start with a technology project on the machine and can also span several years until it has actually really transitioned into a commercial Equipment as a Service model, that would be such a huge scope, in other scenarios it may be that there are really already very subscription-based service models, now it's really just a matter of transferring ownership of the asset.

Speaker 2 38:38
And then it's actually not so much a technology project anymore, it's actually a financial model project that you do with it. So, you can also say that there is not such a right step, but you really have to look at where the customer stands on this journey from, I am quite transaction-driven to me, I am fully digital service-oriented and now actually just want to go the last meter with a provider.

Speaker 2 39:06
And that's what I'd say now, it's around the wingspan.

Speaker 1 39:11
What are the success factors of an Equipment as a Service implementation?

Speaker 2 39:22

Digital readiness, definitely. So, if that's not the case, it's always difficult. Second is how well the machine performs in the field. So, if this is a very sensitive machine, we have also found that sometimes it can be a huge challenge for a successful Equipment as a Service implementation.

Speaker 2 39:44
You have to imagine that we have won the first customer. Now they're shipping this machine along. The customer does not have to pay them. First of all, happy, she arrives at the farm, he fires it up and on day two it's broken.

Speaker 2 39:59
So, then they already have fire in their company. That's why it's something that's often underestimated, but the performance of the machine, that it's really so durable, robust and such an economic asset, which I offer for equipment as a service, is actually important.

Speaker 2 40:21
The second thing is, that's super the good thing, then is, how good are we already in the area of predictive maintenance? So how well can I anticipate when it needs to be serviced, coordinate the maintenance schedules with the customer, can I react to the loads from the machine and then put that into a low-peak time.

Speaker 2 40:46
So, the better I am at this topic of maintenance, the better the Equipment as a Service model will probably fly. And finally, there is an important model for success in utilization.

Speaker 2 40:59
The basic concept is very nice for the end customer, that I only pay when the machine is used. In reality, however, there must somehow be a basic capacity utilization on the machines, otherwise I will eventually go bankrupt as a provider of equipment as a service.

Speaker 2 41:14
This means that the entire case actually depends on the fact that there is still a reasonable machine utilization. And when you say reasonable, that doesn't mean overutilizing, not always 110 percent, and at the same time not underutilizing, that doesn't mean 20 percent.

Speaker 2 41:32
And that's a bit contradictory to say the actual concept, actually it doesn't matter, but it doesn't matter. We may only have this as a small example with a pump manufacturer where water was pumped through.

Speaker 2 41:47
And the customer always insisted that it was the biggest pump there, because that was a critical element for him, that water could get through. But then they realized that it wasn't equipment as a service yet, but it was already a service-based model, definitely what was implemented there.

Speaker 2 42:06
And when the provider was responsible for this maintenance himself, he suddenly realized that a fifth of the water that the customer had said was getting through, which was supposed to get through, which led to the pump being operated completely inefficiently and a much

smaller pump would actually have been sufficient.

Speaker 2 42:24
So also, such understanding topics, to say just because the customer says, that is by no means so. And I'm no longer the provider who makes, ah, I want the biggest pump fantastic and if it doesn't work, then it's good, then I'll do it as a service, maybe I'll earn money from it again, but to say now, I have to understand what my customer is actually planning to do with this equipment and see, that the right equipment is there, which can then be properly serviced.

Speaker 2 42:52
Well, I have to be able to do that as a company and that's a real paradigm shift and only if this paradigm shift works well, this equipment will work as a service model.

Speaker 1 43:08
That's super exciting. What is the most common implementation hurdles you've encountered?

Speaker 2 43:20
It starts with connectivity. They say, ok, now the machine is going to some other farm. This means that I have to be able to check that it is not a problem as long as there is no problem in the open yard.

Speaker 2 43:36
And still, it depends a bit on the network coverage in Germany. We've had that before.

Speaker 2 43:47
And then you say, ok, where's my equipment now? Not to mention having the opportunity to switch to it externally. So that said, connectivity sounds so simple. But it can still be a hurdle that you then say, ok, I now have to go over the network, the provider.

Speaker 2 44:04
That means I need to get a machine on his network. And then everything starts to get very wild. Yes, now just as a hurdle. But you could go through that completely now. To the point of the question, what do we actually do with redundancies?

Speaker 2 44:20
How do we deal with broken equipment? How do we deal with the fact that the equipment is damaged by others on the factory floor? How do we deal with insurance services related to equipment?

Speaker 2 44:34
So many questions and all these questions are very critical success factors and at the same time implementation hurdles. Because if you don't get it solved, then it's just stopped. So, someone comes along and says, here, they have rotating engines here, so that's really the story, they have a rotating engine here.

Speaker 2 44:54
There's an open fan that's made of steel. How does that eat when the thing comes loose and flies through my factory floor?

Speaker 2 45:11

Yes, but who's going to pay for the damage? This is a legal question. So, things like that if they can't be clarified, it's just stop. And such implementation hurdles can be found in every project.

Speaker 2 45:28
This means that for a long time you actually only have to deal with successively removing each individual hurdle in order to either find a technological solution, find a commercial solution or find a risk transfer solution.

Speaker 1 45:46
What is the effect of whether a machine builder has a high service share or a low service share?

Speaker 2 46:01
Huge, if they have a good service business, they have an incredibly good understanding about how the machine is used in the field, how do you have to do the service and what do I have to do to make it live as well as possible.

Speaker 2 46:14
These are essential building blocks for understanding how to offer Equipment as a Service. Especially the providers who didn't have that, they have incredibly big problems even getting the thought around to say, now I'm responsible for it.

Speaker 2 46:30
If they have a good service business, they don't really have a problem with it at all, because they see themselves as responsible for it anyway and have an incredible amount of expertise in-house, around how do I carry such a thing through their lifetime.

Speaker 1 46:48
Cool. How can risks be minimized in implementation projects?

Speaker 2 46:56
Money, money, and more money. Yes, so in such a moment you can only do it commercially. So, through policies, insurance, risk transfer options, so these are the usual measures, where you say, there is now a risk, who bears it.

Speaker 2 47:17
And if you don't want to wear it, you have to pay for someone else to wear it. This can either be institutional, like insurance, or you have to find someone else who says, okay, I'll provide a benefit for this part of the risk, or I'll cover it somehow.

Speaker 2 47:37
And that's why there are so many protagonists involved in EaaS models. Because it is precisely this risk modelling that always leads to saying, okay, we have 26 topics that no one really wants.

Speaker 2 47:51Now we need 26 solutions for this somehow. And in the worst case, that means working on it with 26 different companies.

Speaker 1 48:01

And how do you assess the role of MVP approaches in implementation?

Speaker 2 48:11
I don't think there's an MVP for Equipment as a Service. So, I think you can MVP in digitization, where digitalization does the part, and say, hey, we don't want to digitize all the machines now, but can we equip one with sensors and see what data we get out of it and whether the way we would otherwise maintain it against the data-driven approach has an advantage.

Speaker 2 48:34
You can make a relatively good MVP approach. If it's a matter of saying, I want to negotiate with a bank now that the thing goes on balance, then it doesn't make any sense at all to do that for equipment.

Speaker 2 48:47
So, for a piece of equipment, no one will do that either. So, so to speak, we're going to put one on our bench as a test. And then we'll see if it works. So, I firmly believe that MVP is a technological area that is very well applied in the Equipment as a Service context.

Speaker 2 49:06
So really also a final feature to say that this is a completely off-balance transaction. So, neither the vendor owns the machine, nor does the buyer own the machine. And it is only remunerated through the use that this is a viable way via MVP approach.

Speaker 2 49:27
On the contrary, I believe that as a machine one, it will never make money and become profitable for a living, but this will simply be a disaster. And you have to see immediately that you can get 100, 500 and 1000 machines out via the Equipment as a Service approach and that also says something really ready that a provider has to have if he wants to do that.

Speaker 1 49:52
But did it run then that the effort is too high for a machine or what is the reason?

Speaker 2 49:58
Yes, all questions must be answered. So, from the legal ownership to the asset to which balance sheet, to who writes it off and how and so everything has to be clarified.

Speaker 2 50:14
And it makes no difference at all whether I do this as a club or in front of 100,000 machines. But it's an incredible effort to do so. That's why it's impossible for a machine to do this as a test, from my point of view.

Speaker 2 50:27
But you really have to have a relatively large case and then discuss it away with all the people, he says, as in the worst case you have to agree with 26 companies which partial risks are covered by whom and how you want to do it, and none of the protagonists wants to do that for a machine.

Speaker 2 50:48

Well, unless that's an airplane turbine for 2 million or so, then maybe you could agree on that again, but nobody will do that for a normal 100,000 Euro machine.

Speaker 1 51:01
And how have the Corona pandemic or the Ukraine war influenced implementation projects.

Speaker 2 51:13
They just came to a stop, that's for sure. So, Corona pandemic, I would say, was a different kind of crisis for us. We were much more directly affected than the Ukraine war, where we were hit a little more indirectly.

Speaker 2 51:32
The immediate concern led to say, what are the most important things that we still have to maintain, and all innovation projects were actually on pause that day.

Speaker 2 51:48
It took a relatively long time for them to be taken up again. Some of them, I think, simply died of the phase. That has to be said very clearly. And you shouldn't forget that when something like this supply chain fragility came, where no machines could be produced at all for a very long time and that the substance of these industrial players went to them, they had no air at all to think about other things than how do I get my core business to make ends meet.

Speaker 2 52:17
So, a crisis like the Corona pandemic is for such exploratory models, I'll say, I'll say that there is a big promise that it could bring something at some point, but it's not immediately decisive now.

Speaker 2 52:33
This is the very first thing to be discussed and will actually be paused or, in the worst case, discontinued. So, this is Corona pandemic. And the Ukraine war has now, I think, neither done anything bad as I have, in the area of implementation.

Speaker 2 52:50
So, I think if someone decided to do that, that wasn't the deciding point to do it or not. The only thing that is really happening now, as I have already noticed again, is that it is still immediate when the financing rates have gone through the roof, the capital has become significantly more expensive.

Speaker 2 53:09
The fact that there were the questions there again, the model still makes sense. So, is this still a calculating model or not?

Speaker 1 53:42
Would you accept the equipment-as-a-service market as a push or pull market? Absolutely push. Okay, maybe that's a short run? Yes.

Speaker 2 54:00
I've already sketched it out. Of course, the customer has a current, especially high interest in shifting many of the capex expenditures to OPEX, but he also has several instruments in his

hands to do this, i.e. a few established ones, such as leasing or so on.

Speaker 2 54:18
So, there are already ways and possibilities to do that, and the pain is satisfied with it for the time being, something like this workload risk or that I always have the new technology or something like that. These are also pains, but much smaller than probably with the financing

Speaker 2 54:41
So, that's just a basic attitude. The industrial customers are simply trained to buy these machines in relatively learned cycles, lease whatever.

Speaker 2 54:58
And there has to be an event now, why should I do it differently now. And the providers owe the customers the answer in order to do exactly that now or what it is great for them.

Speaker 2 55:19
We know what the provider gets out of it, a vertical integration into the customer and a broad take-over of the revenue flow, a baking in of the service fees and so on all great. So, what the provider gets out of it, we know now, but what does the customer get out of it?

Speaker 2 55:37
I think we Germans are unfortunately always really, really bad at advertising on our own behalf and saying, hey, look, I have an asset here that lives for 20 years, but you don't want to have a 20-year-old machine on your farm.

Speaker 2 55:52
And now here, now he's doing something different with me and look, we can do that too. So, all that, they're really bad at it. And so, from my point of view, there is a somewhat more skewed piece of information.

Speaker 2 56:06
The vendors who have dealt with it have acquired some understanding of why they should do it, why it might be interesting, and what they get out of it.

Speaker 2 56:18
But you didn't understand the task of translating the added value for the customer and carrying it out very actively. And I think that's a very important thing that the industry has to do so that the customer then starts to build up demand for it themselves.

Speaker 2 56:37
That would be so. Yes.

Interview Transcript Participant 13

00:00:13 Speaker 1

I have been dealing with the topic of service for the past almost 4 years now in numerous projects.

00:00:21 Speaker 1
With industrial companies, especially machines and plant manufacturers from German-speaking countries.

00:00:27 Speaker 1
I got to know it a bit from different sides. From my point of view, I have probably talked to all banks, reinsurance companies and insurance companies, however, start-ups, fintech's in this context, I think I understand the landscape quite well, what the offers are, and of course I also know the challenges right now.

00:01:00 Speaker 1
I'm now out of this consultant role and have been working in industry in the (company anonymized) for 4 months, you may have seen on LinkedIn, where I don't really have any interfaces with the topic.

00:03:25 Speaker 3
Perfect. Then the question 1 directly, to what extent are machine manufacturers and customers of machine manufacturers familiar with the concept of Equipment as a Service or EaaS for short?

00:03:43 Speaker 1
From my point of view, all leading manufacturers of machines are actually familiar with the concept as such. If you dig deeper and ask, what does that define or what you mean by it, you hear a lot of things, I think there is a certain weakness to grasp that in the complexity.

00:04:06 Speaker 1
Typically, this is seen to some extent as a financing model. You often hear paper use, pay per part, which in itself, but if you break it down more closely, it's already a pair of different shoes. On the customer side, the situation is different.

00:04:21 Speaker 1
I believe that medium-sized companies in the regions outside Central Europe in particular are not so well aware of the topic.

00:04:33 Speaker 1
So, on the customer side.

00:04:36 Speaker 1
I just think that you tend to work on more grassroots problems is similar to the political issues of our time, when you are out and about outside, let's say, developed countries, then there are even more fundamental problems than the topic of EaaS now, to put it in a nutshell.

00:04:56 Speaker 3
Yes, absolutely. Then you've just addressed customers, then you're very happy to do so. What do you or do you think are the typical customers of EaaS offerings in mechanical engineering?

00:05:10 Speaker 3
If they exist.

00:05:13 Speaker 1
Well.

00:05:15 Speaker 1
The typical customers do not exist so far. The experience. It is often the case that customers buy after all, at least from my personal perception.

00:05:25 Speaker 1
You often see a certain divergence between the customers you want to address with the offer and those who actually find the offer exciting. But you can certainly identify a number of, let's say, patterns or segments that can identify with the advantages depending on how the model is knitted. I think that if you now look at customers, let's say after a segmentation around this mechanical engineering is common, you can start, for example in the segment of the so-called job shops, i.e. customers who tend to have, let's say, rather low sales of up to 20-50 million approximately, for whom the service model is often the entry into a higher machine class simply out of the idea of financing, in order to cushion this entry into automation, for example, or in a 2 or 3 shift model with a certain flexibility.

00:06:21 Speaker 1
Is it also the case that through these advantages of such flexible, let's say, financing, which then goes hand in hand with the first service model, you can also overcome certain behavioral patterns on the customer side, which actually stand in the way of productivity gains from a TCO point of view, let's say. A typical example, because here, for example, in the field of grinding machines in China, it is common for machines to be completely replaced after 34 years and the customer is often left with the question of whether to carry out the necessary maintenance here.

00:06:51 Speaker 1
For such a customer, it tends to be cheaper to buy a more productive, more expensive machine for 10 years and then have it serviced regularly than to buy a new machine every 3 years. Only the business case, let's say, is cultural. It only pays off after let's say 7 to 8 years.

00:07:09 Speaker 1
Classic financiers would not finance such customers, and in a provider-financed model, such a model is attractive for a job shop.

00:07:28 Speaker 3
Yes, in any case. I would first deal with the questionnaire in the sense of time, if they could get concrete now, are there recurring common characteristics or requirements of these customers for EaaS solutions.

00:07:43 Speaker 1

Well, I think it's clearly about productivity. How important is that? It is about the topic of capacity utilization and dependence of utilization over time.

00:07:52 Speaker 1
In other words, to a certain extent, the fluctuality, so to speak, with the customer. Of course, it is clearly about the topic of growth, and cash flow with the customer, i.e. to what extent the prerequisites are there. Of course, it is also about the topic of peace of mind and willingness to source out, how strong is the competence of the customer ultimately as far as the topic of maintenance is concerned.

00:08:18 Speaker 1
Then, of course, there is a strong relationship between the brand image and the relationship of trust with the vendor that you have.

00:08:25 Speaker 1
There is, let's say, if there is a trusting relationship, then the whole issue is also easier.

00:08:34 Speaker 1
Then, of course, there are topics that in principle reflect the customer's affinity for risk to a certain extent. Here there are also differences right now.

00:08:45 Speaker 1
So, they manifest themselves in the ownership structure or in a, let's say, stock exchange listing of the customer or, or other more complex structures. This means that the typical owner-managed customer is, let's say, only in a market setting like in Switzerland, to do something like this in the villa at all. In my experience, if the customers are listed on the stock exchange, other factors also play a role in incentivizing managers or even in the finance department.

00:09:17 Speaker 1
The classic owner-managed, let's say over 50-year-old, technically trained company owner in mechanical engineering is also typically not one who finds such models exciting. But if they are on the road in China and that the children's generation has just taken over and can be found on the golf course, then these are models that simply fly faster. So, it's always a few things that are not more structured than a few factors from my point of view.

00:09:41 Speaker 3
Okay, super exciting, if we then turn the tide and look at the providers, i.e. provider side of the machine manufacturers, who are the typical suppliers from their point of view and also really the focus on the German machines.

00:10:00 Speaker 1
Well, if we bring a few names into play, which she doesn't want to do now, then then, then you'll see some patterns there. So, I think, on the one hand, there are machine manufacturers who have developed machines that are simply too complex, too expensive to sell themselves in the standalone business, there is a company in Ditzingen, for example, that has this to a certain extent.

00:10:25 Speaker 1

Then there are companies that generally operate in a market environment, let's say, which is rather dwindling, where the product business is collapsing, where they want to use such models to try to come up against the actual market movement or together again against market conditions that are becoming more difficult. service business.

00:10:52 Speaker 1
There are also some manufacturers in the dental technology and medical technology environment that come to mind, and then there are companies that of course pursue growth and digitalization strategy and for them no longer see the service from the hardware perspective, but actually as a prerequisite for then also with, let's say, more complex software, annoying offers even at the end of the tunnel complete solution. Here there is also plant construction in the field of filling machines, for example Tetrapak by times 2 manufacturers ignite certain solutions, which are then a concept and which then more frequently.

00:11:29 Speaker 1
In this way, they are more likely to target the consumer structure of business as the actual professional driver, rather than really the machine.

00:11:37 Speaker 3
Okay, super great, then I would actually move on to the next question, namely the concrete need for EaaS solutions, again also separately for providers and customers.

00:11:53 Speaker 1
Well, I think EaaS is ultimately a question of the value proposition. I think there are pure, let's say, financially driven value propositions and it is all the more attractive the sooner, let's say, traditional sales financing instruments.

00:12:19 Speaker 1
In the past, interest rates were quite low at additional costs. In the end, it wasn't really a big step to move from classic machine leasing to pay-per-use machines. That was certainly a factor that played a role until about the end of last year, but also if you look at certain markets where regulation has given up to a certain extent, i.e. Germany in particular.

00:12:44 Speaker 1
UK, Poland, Czech Republic, and similar European Economic Area with the exception of Italy and Spain.

00:12:52 Speaker 1
These were certainly factors that drove the whole thing a bit. Of course, the attractiveness then also depends on the extent to which the economic model in the entire industry is now designed to a certain extent for fluctuation. I think there are certain industries, such as automotive.

00:13:13 Speaker 1
Where something like that can play a big role, also in the let's say economically, so in principle in the predictability between fixed prices per part and so on, I may have the question now, so I notice it goes in the wrong direction.

00:13:31 Speaker 3

Exactly. I just wanted to hook in, exactly, because industry industries I would have done the same, I would like to have a rough estimate, simply how high or low would they actually simply estimate the demand on the customer and supplier side, i.e. high.

00:13:45 Speaker 1
Yes, I think the general need for EaaS is overestimated. If you follow the prospectuses of the financial, let's say industry. I don't see the leverage here at all in additional business, but rather in the transformation of classic financing instruments, I don't think so, but that's what I personally believe.

00:14:09 Speaker 1
I see the demand on the customer side, i.e. differentiated regionally and industry-specifically.

00:14:28 Speaker 1
For industries such as in the hospital environment, where they actually have a strong focus on the core competencies of the actual user, there is an absolute market that is probably still half of what it will be in 3-4-5 years.

00:14:44 Speaker 1
I think there is a need for growth. In the classic mechanical engineering environment, I would say it is very dependent on the industry. I think in the automotive industry, especially in the let's say, let's say combustion fuel-heavy branches, there is definitely still a growth potential, I would say 30-40% compared to what they have today in terms of figures, at least, if not 100%, so somewhere between 40 and 100%, simply because many players go out and want the topic of hardware and service out of their hands and want the whole topic off the balance sheet.

00:15:20 Speaker 1
And then, especially in Europe, in the Asian region, I think, is also an exciting question, can you differentiate again, are there some countries where it doesn't work at all, others, where it's better, then you can look at a few things when they talk to people who do financing in Asia, these are simply some historical reasons, for example the question of why it works in Thailand and not in Korea, these are so, let's say, things, I can't say much, but there are definitely such factors.

00:15:45 Speaker 3
Nope, absolutely. So no, just like I said, our focus is now also German mechanical engineering, so the other focus is rather irrelevant for our consideration.

00:16:12 Speaker 3
Then I would actually go into detail about industries and machines. You've just touched on it roughly, but perhaps now you'd like to be specific again, which industries do you think are predestined for adoption and why?

00:16:27 Speaker 1
Food processing due to the low competence of the operators in where the machines are located.

00:16:38 Speaker 1

The topic of building infrastructure due to inability is particularly important in the area of public infrastructure and large-scale infrastructure, which is very much financially driven, with certain competence profiles and selection profiles. And please leave me alone with the whole topic around it.

00:17:05 Speaker 1
In any case, I have already mentioned the healthcare environment, quite clearly, especially in the field of hospitals, infrastructure or even in the field of dental. It's also a big market, I think we'll probably be a big Swift in 34 years.

00:17:27 Speaker 1
Dental laboratory is already spoken.

00:17:44 Speaker 1
Endoscopy too. Why this is not flying at the moment is partly due to regulatory reasons or also with the health insurance companies such issues, but that will all come to a certain extent.

00:18:01 Speaker 1
Then there's the issue of sustainability, so there's the whole issue of energy. I also see further growth potential as a service. I mean, the topic of solar panels is an issue, I don't know if it's mechanical engineering, but in principle you can also reinterpret wind turbines anyway, all of these let's say instead of the energy generation plants also the example of power to gas and such topics hydrogen.

00:18:26 Speaker 1
Going in that direction, however, has been very important to us according to the individual use case. The closer you are to the end customer, the more service it is.

00:18:37 Speaker 1
Other industries may have to list them again. Printing industry e.g.

00:18:49 Speaker 1
Chemistry is difficult, you already have the chemical parks, it's more like that in Production as a Service, but there the equipment is more part of the overall solution, so turnkey moderate with certain venture capital increases, where investors are behind it. By the way, this is also an issue.

00:19:09 Speaker 1
For example, Egypt somehow put their gas turbine, 50 years contract with fixed feed-in somehow 0.50€ per kilowatt hour, no idea that there are also those where you can say service is actually in the end also service yes.

00:19:26 Speaker 2
Ok.

00:19:27 Speaker 1
But for me, if I were to invest. I'd say that's another question, but I think I could still imagine the hospital and food & beverage industry.

00:19:37 Speaker 1

Because there is a lot of potential.

00:19:38 Speaker 3
Great, yes, actually very congruent. We have also spoken to several strategy consultancies, including in the health and MedTech and hospital sectors, and have received very similar feedback. So super exciting actually then, if you could name another industry, we have also heard the construction or construction machinery sector from time to time, did they pass there?

00:20:00 Speaker 1
Yes, they (construction machinery sector) have already become strong rental business model in place.

00:20:05 Speaker 1
I've done quite a few projects in this area, so it's nice, it's not always as easy as they say. So, there are, for example, you can also take a look at some Cases on the Internet, so for example the Deutsche Bank once shot a video, they tried to rent out plans like this, Train as a Service.

00:20:26 Speaker 1
Machines is just that they are quite a seasonal industry anyway, so the topic is what is the added value of EaaS compared to the rental model, that is simply not tangible for many customers and also not yet penetrated for the manufacturer. Maybe just as an impulse, so I haven't seen any answers yet, there are of course the Hilti models and such.

00:21:29 Speaker 3
Yes, yes super exciting. I would also like to go just one level deeper, if we were to look specifically at machines or plant types in mechanical engineering that would then be well suited and would like to be able to do so even then.

00:21:57 Speaker 1
So, in general, if you talk about the features, there is actually no factor for which I don't think EaaS sales are suitable, there are so many who speculate and say, yes, yes, yes, yes, but well, I've thought about it for a long time, seen a lot.

00:22:10 Speaker 1
Exception proves the rule, if anything at all plays a role in the topic from my point of view, if you only talk about the asset and the characteristics, then it is certainly yes, you have already outlined this correctly, the question of the value of the asset? Yes, that's certainly an issue, simply out of, let's say, portfolio optimization, which has so many little clumps of risk.

00:22:34 Speaker 1
This is an issue that can play a role. Especially with the financing partners. The second thing I would bring up at this point is the issue of the degree of individualization of the equipment and the size of the market in which the asset is used. For example, I have had projects in the field of coffee capsule production.

00:23:00 Speaker 1
If you look at Nespresso and compare it, it's easy to compare it with other competitors. Certain technological factors, which ultimately reduce the world market for a coffee capsule apple machine to 8 pieces per year, and then they simply can't put this thing anywhere else,

these are such factors, so one thing is really the technology, how strongly is individualized that you could another, although also do something with it to bring it in with those in production, He has to do a lot of remodeling first, but the other thing is really the same, even if he wants to rebuild it.

00:23:35 Speaker 1
It can simply be that if you have to, you just wait a year to see how a buyer comes up for such a system. All of this has to be priced in, which is why there are few and then only highly specialized people who then insure or finance such things and that, by the way, is also an issue with the barriers, I see challenges and concerns, I think one of the biggest unsolved problems in the scaling of the models is that it is precisely these aftermarket capabilities, if you want to name them, in such an area.

00:24:05 Speaker 3
That would be the next point, yes.

00:24:07 Speaker 1
Also, preparation of the assets and so on who wants that ne, so that's just a pain point where I think that slows down that currently massively, because a bank wants to finance it, but in the exploitation also in the end. Interestingly, they just don't see that the big business case that comes from exploitation and in the second and third life, and the manufacturers can do it themselves best if they are willing to invest in the whole thing, so they professionalize, but they shy away from hiring people to do it.

00:24:39 Speaker 1
And there are other priorities right now and the banks can't do it in the end. Yes, and that's why this use case currently only works in small quantities, where you can simply move the machines back and forth as a manufacturer, but from a certain size in a balance sheet risk would be greater. So, you have to invest the whole refurbished business, you have to do it differently and that kills the scaling and the bank in the end, it doesn't need it anymore in the end, so all the big manufacturers I deal with actually had hardly any interest in the banks, most of the time it was really only at the beginning.

00:25:09 Speaker 1
To prove this business case, but long-term.

00:25:13 Speaker 1
Is the strategy with all large corporations, which I have been, that you try to do that, can then also be pushed into your own balance sheet at the end or to be involved in some constructs, but in any case the banks as service providers, as you know it in the lending business or something, nobody actually wants the banks with such types of business models, was my impression.

00:25:34 Speaker 3
Okay, yes, very exciting, actually a lot of cover with our previous interview partners.

00:25:41 Speaker 3
Then you've just touched on it. Challenges and concerns, as they are also primary obstacles for customers and then for the provider, exactly.

00:25:54 Speaker 1
I'm up here. What are your primary obstacles and concerns?

00:26:02 Speaker 1
Negative interest is in the market. I think the market and competition are rather driving forces, so on the contrary, I think the competitor is doing it, then let's take a look at the topic.

00:26:13 Speaker 1
Technological megatrends.

00:26:16 Speaker 1
Personally, I don't see that. With the exception that there are certain non-megatrends, but certain trends that bring such projects to the fore from time to time, because it doesn't pull on the sales side. I'll give you 2 examples from my personal experience. Sustainability and the topic of hydrogen.

00:27:11 Speaker 1
These, these, these what are they called because I forgot them.

00:27:13 Speaker 1
But in any case, there are those, I'll say, fuel stack, I'll say yes to put it simply, and the thing was simply the ones that had the machines for it, they were just twice as productive, yes, but also twice as expensive. Yes, and the market is currently too small, it paid off, and then the manufacturer said, well, I'm Schuler (company), let's say in this case concretely, I can actually put such a system at the problem as a demo machine and do paper use and then somehow then the market will pull up, so these are such trends where the maturity is at the beginning, where that is then already plays a role as a driver but not as inhibitor.

00:27:49 Speaker 1
Regulations also play a major role in this environment, especially when it comes to energy efficiency or something like that, or even exhaust gas requirements.

00:27:58 Speaker 1
By the fact that no one has exhaust gas requirements as a business model, except perhaps the Greens. It's for such a company player, who then says then I'll get an EaaS exhaust gas purification system here or so, pay my fee there and then pass it on to the customers.

00:28:12 Speaker 1
It was already a model where you financed conversion or something like that, yes.

00:28:18 Speaker 1
Whether this is really EaaS is always the question, sometimes yes, sometimes no. But that, that does matter. Demographic trend definitely as a driver and not negatively but positively, because in the end I don't have to hire a new one when I say I'll just take over the entire maintenance of customers who offer me this with their machine.

00:28:38 Speaker 3
Super class, a great use. If we then mirror the whole thing on a deeper level, also at the company level, and then also like to separate customers and providers, what does it look like?

00:28:54 Speaker 1
Marketing driver, i.e. the Marketing as a Service Story, I would say, is still an important point that drives the whole thing, but also positive.

00:29:04 Speaker 1
You can see this right now in the area of building infrastructure or, for example, refiguration, i.e. cooling technology.

00:29:11 Speaker 1
In the last, let's say 2 months, there have been 34 providers who have launched the whole thing and I guess that's also the case.

00:29:19 Speaker 1
It's just about: “we have it now too”. Yes, we have it now, that was also the case for a while in the area of compress. There were also the one, the one who had the bow compressors. Then there were cheesemakers, compressors and then there were marten compressors and then all of a sudden, they all had.
Pay-per-use and so at the fair. Well, we also have financial drivers now, I would say not in the current environment, I'm too far away from the topic right now.

00:29:47 Speaker 1
In the past, interest rates were just so low.

00:29:51 Speaker 1
The fact that people simply thought that in principle these classic risk premiums, which would have been due for those for normal customers, who actually couldn't afford such a thing, you just thought, yes, then we're going to do big business now and go very strongly into the financing model, has already driven the topic very strongly, now the last few years a low-interest opera I would say, so again not negative, but positive. Operational driver yes.

00:30:17 Speaker 1
Of course, just as with service contracts, you always must wait for the right time to tap towards customers, when such models become interesting. And of course, if they just had an example of an Indian factory and Indian mining, it had just somehow just had 2 weeks of standstill because they couldn't manage their own maintenance on the electric motors of the conveyor gears for them, where they transport the coal, so of course the time was good for a manufacturer of electric motors to say, Man, we do EaaS remote monitoring of all electric motors. And then we basically do this upgrade for free, but you just pay per operating hours, where the conveyor belt runs and so on and that was the right time where they said, fuck it and then we do it now at the Swiss manufacturer. strategic drivers I would say, also from the customer point of view, especially with providers rather well, but for providers also when it comes to differentiation and the transformation to a solution provider respectively.

00:31:19 Speaker 1
The focus in general as a service provider. Some companies start completely out of the product business, so that plays a big role in the investor story.

00:31:29 Speaker 1

At the customer level, I would say that you simply see the topic of core competence, i.e. VW, for example when there are on the road in Salzgitter and then in principle have want to sell microscopes.

00:31:41 Speaker 1
Has he already told them that he doesn't want to buy one and can't buy one because Capex Budget is dead in the end. Because, of course, such models are suddenly quite in demand if you still want to make a residual development.

00:31:53 Speaker 1
Organizational drivers: Yes, of course you have competence problems in some companies or actually in all companies, I want to say, and if you then demonstrably do not have certain things under control, do not manage them, then of course it is easier to buy something like that sometimes. Of course, this full service in combination with training often still plays a role, or otherwise it is the case that organizational drivers, if you understand it that way, are certainly also an issue to what extent the company is driven by finance.

00:32:18 Speaker 1
If they have a management change and the old CEO was one from development and now a new one is coming from finance, example Siemens is basically not someone who understands anything about the actual core boss of Siemens, then he will also set certain incentives at the end of purchasing, let's say, that such models are also promoted, because in the short-term perspective he then optimizes his balance sheet, because he does not, so to speak.

00:32:46 Speaker 1
That he has to pay off the purchased production equipment, but only the financial rate. He is not interested in whether this will cost you more in 8 years, not for the first 4 years. So, these are definitely topics of change of ownership and such, these are such trigger points where I would definitely put myself as a B2B salesman, especially if the successor is more of a financial colleague and not a production colleague.

00:33:29 Speaker 1
Ultimately, this whole segmentation task. And that's what you've done a lot, I've done it a lot from the provider's point of view.

00:33:39 Speaker 1
My experience in this regard is that this was often not really necessary in detail.

00:33:43 Speaker 1
And when they throw it at the customer. Everyone then finds their own advantage in such a model. Yes, so all these theories we stole through everything which customer segment, which Oh that at the end of the day it's something else at the end of the day and sometimes the nice thing about the model, it's just an alternative and so in most cases an alternative at first, some companies do it even then only in this way, but then yes, so everyone can then decide for themselves what is the advantage of such a model for them right now and the companies that this is perhaps even more important from my point of view, from your point of view there is a whole series of sales systems and problems.

00:34:20 Speaker 1

Which have nothing to do with these macro drivers or anything like that, but the operational problems are the much more important ones. Yes, and the operational problems, that's really the issue of the accounting process, that you can really buy that from the customer's point of view as an issue. The topic is of course the business case creation, if you have such a sales stub who has sold 40 years of technology, can he now calculate for you what the additional costs are, can you sell it internally? No, either.

00:34:49 Speaker 1
So, from the customer's point of view, from the provider's point of view, of course, it should be very clear these financial accounting issues in several countries. They also have to keep the assets back and forth between subsidiaries, take tax advisors with them, which often takes a year and a half before it's all done. You need to have a certain affinity for risk.

00:35:09 Speaker 1
After-market topic you mentioned, all these topics, for which, when it comes to that, I would maybe just send you a publication or something of mine. For example, we have now written a white paper on this with KPMG.

00:35:22 Speaker 1
Team, maybe you can read back there what the challenges are from the provider's point of view with this topic.

00:35:28 Speaker 3
Yes, very, very much like that. That was incredibly valuable, so if they could just email it to me afterwards, I think that's great.

00:35:37 Speaker 3
Super. Then let's talk about the drivers for what extent would you quantify the influence of the Corona pandemic and or the Ukraine war on these drivers, preferably then also separately on a macro level at company level and providers and customers.

00:36:00 Speaker 1
I can't say much about the Ukraine war right now. I mean, we're basically doing a service for Ukraine for military equipment, maybe you'll have to ask the other industry.

00:36:15 Speaker 1
For the topic of Corona, I was right in the middle of it.

00:36:20 Speaker 1
I would say that the whole thing was different from what we had initially thought. Initially, we assumed that we would now have massive problems in the overall economic situation.

00:36:33 Speaker 1
Let's say now let's run into a situation where no tunnel will invest anymore. The topic of EaaS was massively on the agenda for about a year or 9 months.

00:36:47 Speaker 1
Because we simply assume that the willingness to invest is now virtually 0 for customers and the only chance to work with the entrepreneurs from mechanical engineering, who typically still live 70% to 80% from hardware business in the end, at least in terms of sales.

00:37:05 Speaker 1
The fact that we now need a solution very quickly and quickly, yes, they have found a massive number of companies that have quickly set up such a thing behind the scenes, they have never made that public, by the way, also typical for EaaS, that 90% of the companies do not even make it public, that they do.

00:37:20 Speaker 1
To gain experience first and in general, many companies are afraid that customers will then only want EaaS. Yes, because they don't sell machines anymore, you don't know.

00:37:30 Speaker 1
It's supposed to deal with it.

00:37:33 Speaker 1
By the way, this is also a phenomenon. You can talk about it for a long time, but in any case, that was very, very strong at the beginning, so the providers on the side and the paradox was then just.

00:37:43 Speaker 1
That one, I've had several such cases where I've sat at the table with customers. In the end, they bought pay per use machines instead of a machine. Yes, and the connection was with that, on the one hand, there were relatively quickly funding programs where relatively much taxpayers' money, let's say, was given away, one has to say in German, our generation can no longer pay it back anyway.

00:38:09 Speaker 1
And Italy in particular was nothing short of spectacular. Partly, what were the depreciation committees that they did there.

00:38:15 Speaker 1
And then the topic of home was totally dead. And then you thought, fuck, we don't need any as-a-service sales. Yes, and yours, the figures in mechanical engineering were also very good for 2023 actually.

00:38:27 Speaker 1
21/22 and now you have the topic again, where you have seen again that inflation yes and now all of a sudden, the financial fidelity is also completely different.

00:38:40 Speaker 1
And yes, now EaaS is also actually unattractive from a financing perspective, if you will. Yes, and the paradox is that people are now talking more about as-a-service from my point of view.

00:38:53 Speaker 1
Because machine sales are having problems selling machines again. So, this year is a very difficult year for many machine manufacturers.

00:39:00 Speaker 1
Also, for us.

00:39:01 Speaker 1
And now, all of a sudden, it's all about EaaS again. The problem is only the real thing, what we had in the Corona set with low interest rates we can't do now.

00:39:21 Speaker 3
Okay ne super, super exciting. Then we've basically covered the challenge and drivers and would then actually give it a try.

00:39:36 Speaker 3
If you can make a statement about the promotion of EaaS adoptions and the attractiveness of consulting projects, then he will immediately hire. With the first question, what measures do you think Equipment as a Service providers can take to promote the adaptation of such models on the customer side in the future?

00:39:57 Speaker 1
Well, it's about the clear disclosure of the real business case. Basically, the keywords are this Value Identification qualification. Such sales tools, guided selling and so on.

00:40:11 Speaker 1
Return and Invest Calculators and all this topic, which is certainly a sales measure from the provider's point of view, which simply has to be done, because of course the big question mark is always there, I am being ripped off here right now.

00:40:24 Speaker 1
The annual topic, where you simply have to say openly, what is really the additional price, and I think from my personal experience this added value, the additional price, can then also be offset by added value. Yes, you just have to find the right line of argumentation in a customer-specific way and often, sometimes it also leads to the fact that you say, this is not for the customer in general, if you look at the whole thing even bigger, it is of course also about the right definition of the model, also some providers are also unsure about the strategy of the model.

00:40:59 Speaker 1
But thousands of slides have already been added. Which variants you can then drive, where the margin comes from.

00:41:05 Speaker 1
Yes, in the end this is simply an issue that is not the customer's problem, if necessary, what you want to achieve with the model. So, here's an example, if you now say that you actually want to drive a model where the machine actually goes back and then go into secondary recycling and sell the thing to Africa, yes or what?

00:41:22 Speaker 1
Then, of course, it's bad if you have customers who would tend to take over the machine after 34 years, but that's an example, you always have to look closely at how the model is constructed.

00:41:35 Speaker 1

That's just a problem here, too. So, these are these measures. The business model is already correctly defined for the right customer segments from a bureaucratic point of view, if they think as a Spanish university, yes.

00:41:52 Speaker 1
Of course, there are certain regulations that have to be adapted, in certain industries, especially in Spain, let's say very much dependent on EU subsidies, if there are of course capex budgets, but no opex budgets.

00:42:07 Speaker 1
Difficult, these are not things that have to be done. I read consulting companies there, well, of course you can, especially in this whole topic, there are many in the field of energy efficiency.

00:42:16 Speaker 1
Independent energy consultants who compare the attractiveness of different measures and financing models.

00:42:27 Speaker 1
In this respect, this is certainly applicable, let's say very strongly, let's say indirectly sales-organized companies with a dealer structure, which is also a lot, in mechanical engineering or about, let's say, distributors or local agency.

00:42:43 Speaker 1
Yes, you can certainly also say that something like this plays a role, that you also enable such structures there, you can see that especially in the area of compressors there.

00:42:59 Speaker 1
For example, companies that do not produce compressors, i.e. that do not produce compressors, but that offer as-a-service services for compressors by buying the compressors from the manufacturer, so to speak, do not get bank financing, that they provide a customer and then do the maintenance themselves.

00:43:16 Speaker 1
Carry out this compressor, i.e. service company. So that's an exciting topic.

00:43:23 Speaker 3
No, no, sure, exactly, I just wanted to keep the thread and attractiveness they had just said, proactively. So, it's offered by consulting firms, yes, I'd tick it off.

00:43:37 Speaker 3
Just how attractive such projects are for such consulting firms. Is there really a financial benefit, i.e. compared to standardized strategy projects?

00:43:54 Speaker 1
Well, if you want to advise the provider in relation to EaaS, I will say.

00:43:56 Speaker 2
Mhm, Mhm.

00:44:00 Speaker 1

I hope mechanical engineering is smart enough not to fall for something like that. Yes, I think the pure EaaS projects don’t exist there.

00:44:08 Speaker 1
Of course, you always do a strategy project and then sell it as a new idea that you want to do EaaS now.

00:44:14 Speaker 1
There are certainly some board members who fall for it, but there is nothing new for the customers to do a consulting project now. Certainly, in individual cases with restructuring in relation to the purchasing strategy certainly an issue, you have seen more than once, especially when it comes to the fact that you.

00:44:30 Speaker 1
So, especially in the automotive supplier environment, it is currently interesting to see to what extent you can make each other, let's say in such constructs with manufacturer participation, through production modernization. But these are always projecting financing and not these classic ones.

00:44:45 Speaker 1
Times sales financial instruments.

00:44:50 Speaker 3
Okay great.

00:44:53 Speaker 3
After all, you would, well, you've just touched on it, then more projects will be carried out on the customer side or on the vendor side by consulting firms.

00:45:38 Speaker 3
In your opinion, will there be even more projects for EaaS, i.e. more equipment service projects for customers or for providers of consulting?

00:45:50 Speaker 1
So, if then from provider companies, but just to give him a short answer again. I think this issue is leading them in the wrong direction. Yes, so the relevance of the topic, I see that somewhat critically, even massively in everyone involved in the construction of the topic of consulting businesses somehow as a new idea.

00:46:09 Speaker 1
By the way, what might be for them again, why do I say that? Most of these financing companies or most fintech’s, so I don't want to say that I have a reflex now, yes, you have to understand the context.

00:46:23 Speaker 1
They want to sell additional services to the companies that say, yes, we're going to do a customer journey workshop here and we're going to do a design thinking workshop and we're going to develop the as-a-service service model with you and then there's the bill of €40,000 and then there's the financing with us. That's especially with certain players, I'll tell you, for example, the topic of keyword (company mentioned) or so, that has so that's yes has

massively deterred many customers, yes or (company mentioned), for example, is also known for something like that.

00:46:54 Speaker 1
Nobody wants advice in this environment.

00:55:49 Speaker 1
This question that they then raise, what was it like now? From my point of view, conducive or non-conducive leads to a paradoxical answer, as I have already outlined, i.e. they have running along and opposing movements, in the end there will probably be no answer.

00:56:03 Speaker 1
Topics and for every industry, I would say, there are of course developments that then boost the topic in the long term. But from my point of view, this trader point did not exist at that time. Yes, on the contrary, my professor, for example, if you were to talk to him, he would explain to you that at the end of the 90s, that they also discussed such models a lot, and then they didn't come, and then at the beginning there was always the question, why now, we always said back in 2019, yes, because digitalization is here.

00:56:33 Speaker 1
But oh well.

00:56:35 Speaker 3
Yes, great, so what they had, that's already teased. In your opinion, what would be really concrete questions that could or would bring in a little more depth of content?

00:56:47 Speaker 1
Yes, so what problems do I see in practice, whether you come from practice, which can then certainly be applied?

00:56:55 Speaker 1
I think that's the first problem.

00:57:00 Speaker 1
For me, the topic that I have told with the topic of after-market business, that is, I don't mean in the sense of service business, but in the sense of refurbishment, recycling, and such. Yes, and that's where I see the problem that the manufacturers, who simply don't think about the business case from the end, but those from the beginning, see it as a replacement for machines.

00:57:25 Speaker 1
However, they are not able to realize the real margin because the machines are incorrectly designed, partly not modularized enough, partly they are not quasi-interchangeable and partly not optimized for service, whether business. Yes, so I would simply ask myself the question, through which one does it just take until they have this experience or how can you explain that they just don't think the thing to the end at all and not like that at all? So, it's just per se, it's going to be easy, if it fails for many people, it's just because of that.

00:57:56 Speaker 1

I also find the second topic exciting. What is the topic of sales transformation again? So, I think the difficult aspect is real.

00:58:09 Speaker 1
Also, to depict this model from time to time in terms of sales. And of course, there are some studies in the direction of all this value selling capabilities, value base selling or even the topic of solution selling.

00:58:20 Speaker 1
To what extent sales skills are now required again and there, perhaps we have to get to the point, the question is about the role profiles yes, the question is about the sales process, do you need team selling now and the question also relates to the topic of channel management, i.e. the question to what extent digital sales channels are suitable or not, Because you can also, for example.

00:58:51 Speaker 1
In direct sales, so to speak, partly bypassing the countries and partly.

00:58:55 Speaker 1
This can also be done via a website, where you can configure the machine directly.

00:59:01 Speaker 1
So channel management, online shop, e-commerce and how all this can come together at EaaS or whether it needs it at all or not, actually it doesn't need that, but actually it's actually the stage to it, the role profiles, process, team selling, so all these questions of sales, let's say, control are, I think, extremely decisive, and then the last point on the subject of sales, the topic of KPI, target system and incentive, how to ensure in principle that the right customers are sold as a service and.

00:59:32 Speaker 1
Also, the success in the end of the model.

00:59:35 Speaker 1
Which is also very much dependent on the production of the customer.

00:59:38 Speaker 1
The availability of equipment, let's say, is not only sales instantiation, but also into the service organization, so that in principle, if the service does a bad job in the end, everyone doesn't get a bonus, because the customer can't produce, because we, because we didn't manage to make the customer virtually live with the equipment in the sense or something like that, yes the exciting thing is that especially for the.

01:00:02 Speaker 1
Like Siemens Energy.

01:00:03 Speaker 1
Or so. Um, they start with the fact that they really link these incentives to the project success of some wind farm, and because that's just in the longer term, so also in the steel industry. These are the extreme models that are being discussed, and no one knows what they are supposed to look like. So those are these internal issues, yes.

01:00:22 Speaker 1
For example?

01:00:24 Speaker 1
Yes, and coming from ecosystem history and so I think there are also some topics that are not quite clear.

01:00:33 Speaker 1
One would also think that a model like EaaS would be perfect for financing platforms. NE. For example, there are internet websites for used machines and so on, but now you could say that you would look for the optimal financing partner for almost every customer project, why a kind of placement agency?

01:00:56 Speaker 1
Out of credit. It's just that the financial industry doesn't join forces at all, doesn't want to do that and accordingly has no offer for medium-sized companies in particular, which can't now enter into an exclusive partnership with the globally active financial company that is active in the main markets and so and so I also see a need somehow, there again from a financial point of view and from a corporate point of view.

01:01:13
Consumption.

01:01:20 Speaker 1
To find out why this doesn't exist for a long time. In the end, most companies have to finance themselves or be able to enter into exclusive partnerships with certain financings, at most perhaps in the USA, with other financiers than in Germany.

01:01:35 Speaker 1
But they can't have full flexibility now, like that.

01:01:39 Speaker 1
Of course, it's not so easy for me to storm off. You might ask why.

01:01:43 Speaker 1
Not really a platform for that. Yes, there is.

01:01:46 Speaker 1
That would have interested me personally in the topic.

01:01:49 Speaker 3
Exciting, yes, a super insight, also very cool suggestions, thanks for that.

01:02:08 Speaker 3
Mhm, then once actually implementation of equipment EaaS models, provided that they have accompanied you with the appropriate such typical factors for a successful implementation. What are typical hurdles? I don't know if you can still see my question now, that would be okay right now question 8. Then I'll start now, exactly, what are the factors for a successful Equipment EaaS implementation in your opinion?

01:02:26 Speaker 1
No, unfortunately not.

01:02:37 Speaker 1
Yes, so I think top management commitment on the part of the provider then want that.

01:02:46 Speaker 1
Top management commitment is the typical problem in companies, they just can't get it past finance.

01:02:54 Speaker 1
So that's ne Finance and Lidl because there are some points open. SAP systems were so crap.

01:03:02 Speaker 1
The annual factor is done.

01:03:04 Speaker 1
I think you have to open up a bit strategically at the beginning. Most companies always get out of the current business need because some machine doesn't sell well enough, in some country at some point in time, I think you have to detach yourself a little bit from that and look at the whole thing more holistically.

01:03:28 Speaker 1
I think you're looking for yourself. So no, so man you get there relatively quickly, then always on the wrong segment and then they find you afterwards. Well, hm yes, so that's what comes from the fear that you can re-educate the best, so they don't want the best customer who always buys their expensive equipment, but they prefer to start with the Leica customer and want to give him a Zeiss customer, that's

01:03:51 Speaker 1
It's a reflex where you think, well, sometimes the lever is to optimize the margin in the core business, but then you're always afraid that you'll miss something.

01:04:01 Speaker 1
Success factor for me is a clear sales training and also ne, let's say, well, always these sayings. You sell twice, once internally, once in the customer, but also the topic of internal organization and so on, there are always many, many, many mistakes that can happen when they talk to people and have done the projects, so many salespeople who see it more as a financing instrument, sometimes where you say: Oh, the customer hasn't bought for 5 years, now I can offer him that, because it costs, yes, it doesn't cost anything and then it turns out that he's not creditworthy, you can't really put a machine there so easily, and he doesn't have one.

01:04:39 Speaker 1
This, this internal, this internal launch planning is important. I think the success factor is also that you just do it. Yes, it comes together with the management, who just insist that you do it.

01:04:52 Speaker 1

Many of these problems that the then often solve themselves. And it's not rocket science. You just have to have done it.

01:05:00 Speaker 1
Especially when we approach all these digitalization topics.

01:05:03 Speaker 1
So, you definitely come with an Excel sent by e-mail once a week via a user profile. Of course, you don't have to have a live connection for EaaS, to give an example, you can also chase a USB stick in case of doubt when maintaining the machine and can look at how the machine ran. The last 6 months.

01:05:26 Speaker 1
It's also not decisive. So, there are so many issues where even the Presidium is wrongly placed. From my point of view in the.

01:05:33 Speaker 1
In other words, perception is a lyre. He's always talking about digitalization, and then he wants to do the whole range and what do I know, MES and predictive maintenance, all nonsense from my point of view, it's just important that you also get an understanding of the actual model.

01:05:49 Speaker 1
I think you have to differentiate clearly. Also, a success factor is really between the service components, the consumer girls, the financing, what is really going on at this point, so to speak, this one, these bundles that you want to build and the value proposition. You often see that there is not only one EaaS, but also 2 or 3 models in the same company.

01:06:10 Speaker 1
Well, a success factor, of course then of course the topic of financing, which you somehow find an answer to and approach the topic.

01:06:19 Speaker 1
Yes, you can. But you can do it. In the meantime, the market is also more mature than it was 3 years ago.

01:06:25 Speaker 1
In the meantime, companies have learned to sell on themselves. So, it was really bad for me to talk to the banks for several weeks with companies back in 2020-21.

01:06:39 Speaker 1
In the end, I always sold for the banks. Yes, they then offered me to start with them, because they just didn't manage to somehow translate from, I am Deutsche Bank or Commerzbank on.

01:06:53 Speaker 1
I, I have, that's my suggestion, yes, because you always have those who are just not used to selling. Yes, and that was really difficult at times, to bring these people together culturally.

01:07:03 Speaker 1

And accordingly, it was the case that you have of course already benefited as a company when you have taught yourself such models with a bit of competence. Yes, but in the meantime the topic is relatively permeated by many companies, yes.

01:07:20 Speaker 1
And from the customer's point of view, as I said, you have to be careful.

01:07:24 Speaker 1
Of course, there are some, well, let's say more dubious designs in the environment, whether you have to be there now.

01:07:32 Speaker 1
The most important equipment is now somehow a leveraged machine or something like that is still the question, but they are that smart.

01:07:41 Speaker 1
And the issue of data security and so on. Yes, you also have to be careful, there are also a few weaklings, if then somehow n fintech is still jumping around and so on.

01:07:52 Speaker 1
But that this is the topic actually manageable now, I'll put it that way.

01:07:57 Speaker 1
Yes, so that would be so. So as for everything else you can read, these are always the same platitudes, yes, so but.

01:08:05 Speaker 3
That's exactly why I would perhaps go into 23 specific points.

01:08:12 Speaker 3
You have just touched on it briefly. On the one hand, the degree of digitalization, on the one hand, the high degree of digitalization of machine builders, to what extent does this affect the success of an implementation project?

01:08:24 Speaker 2
Not at all.

01:08:25 Speaker 3
Well, why?

01:08:28 Speaker 1
Yes, you can. So I've all of them, so we've already experienced everything, so they can do it, so if you look at digitization, if you look at the machine as such, there are actually hardly any manufacturers where the machine asset doesn't somehow already have at least some kind of control technology installed, with which you can do certain things that you need and map paper use, if this is not necessary, you can simply install any sensor by simply upgrading the hardware of the machine.

01:09:01 Speaker 1

Drawing correlation, so that's actually relatively easy from a technical point of view. There are also many banks that offer such devices on their own, yes, the name doesn't come to mind now, such as telemetry, stories that you can simply touch there.

01:09:16 Speaker 2
Yes, okay.

01:09:17 Speaker 1
That's not the issue and.

01:09:20 Speaker 3
If I'm allowed to chop it off, it's actually not just the machine itself, but the degree of digitalization of the company that grows the machines would be just as interesting. So, what are the skills they have to map such an Equipment as a Service model? We have also heard from other interview partners that, for example, there is simply no possibility to invoice them.

01:09:46 Speaker 1
Yes, I don't see it that way. So, as I said, from my point of view, people who are familiar with the topic. As I said, I don't think it's very plausible that digitalization will then play any role as a threshold, i.e. the banks as such also offer a whole range of billing software solutions. There are specialized companies that take care of the billing for this, there are their own start-ups that do nothing else in principle.

01:10:14 Speaker 1
To be mapped in SAP, somehow between usage profile and invoicing for the provider, yes, right?

01:10:22 Speaker 1
Let's say it's a conversion for the customer who can't buy it. So then there are thousands of possibilities, I've never experienced that technology is the problem at one point and such questions, let's say of a systemic nature, digitalization, yes, if you say, your SAP system.

01:10:37 Speaker 1
The crap. They always have to take detours, it's not a deal. Breaker, however, is of course scaling more difficult braking target and blablabla, but definitely not a deal player. That's what I meant, and from the customer's point of view, you can find a detour for everything. So, it's relatively fast, in 2 weeks they almost get it solved from my point of view. There are also many cases, once as an example, but not always, so the topic of connectivity does play a role, especially in the market environment, for example, sometimes for certain hours and there is no infantry as an example.

01:11:10 Speaker 1
Or even certain, yes regions there, there is always with Internet and so not so stable and so clear, there they do not have the permanent remote access or the high-volume data connection. Of course, depending on how the model is, if you want to somehow combine that with your predictive maintenance and I switch to the machine solution, there are of course challenges, but from the financing point of view and from this classic pay-per-use idea full-service contract without digital connection has never been a problem in itself.

01:11:43 Speaker 3

Super interesting for the assessment if we stick with a similar one.

01:11:49 Speaker 3
On the subject of factoring, to what extent are the implementation projects at the mechanical engineering company? Farmers with a high service share or a low service share, i.e. how does the service share have a positive or negative effect on an implementation?

01:12:11 Speaker 1
I would argue.

01:12:14 Speaker 1
That's an exciting question. So, if you look at the question, we now have 5 engineering companies with different distributions of, let's say, total sales service and machine sales, and the question is which of them is the more likely candidate to put such a thing on the road. In a way, I got that right.

01:12:31 Speaker 3
Yes, that's right.

01:12:33 Speaker 3
Correct, yes.

01:12:34
Yes, so that is.

01:12:35 Speaker 1
That's an exciting question. So, I would say there are a number of companies that have done EaaS before they actually have a real breadth in their portfolio of services. Interesting actually, if you think about it and it mainly affects km US, so we hardly have a maintenance contract, quasi kind of provider but makes an EaaS because with them somehow financing idea actually prevails in the end, right?

01:13:02 Speaker 1
This is the second example of small businesses. They sometimes have manufacturers who are just damn good at their technology and are in some niche.

01:13:08 Speaker 1
And there was always the thing.

01:13:11 Speaker 1
That as I said, the customers have had a hard time buying these machines and then the first service for them, the logical step in the sales approach to now provide the Chinese job shops and thing. So that's already the way it is, so there is.

01:13:23 Speaker 1
Yes, so that's the question again, what is really the decisive factor. So, there are both.

01:13:29 Speaker 1
But tendency, I would argue.

01:13:32 Speaker 1
The step of a full-service provider ultimately taking up the topic of pay per use is probably even less likely than in the other example. Because when I think about it, the companies that are already massively strong in service, so I'll take marine engine manufacturers or something like that.

01:13:52 Speaker 1
Yes, if they have pay per use, then the pay per use hardly does, but well, you can say that again. This is good for shipping companies and the whole construct with the ship, that's a wrong example. Second example compressor service companies like that.

01:14:08 Speaker 1
And in the end, it doesn't really make any use of hardware paper and only does the service. So, he has, this business has actually not been absorbed, there are other reasons. So, you would probably really have to go through the companies with a high service share that have also managed a hardware and consider whether they have the EaaS once. It seems that way to me.

01:14:27 Speaker 1
It seems to you that the step from the very beginning off is the best service typical or this step from I combine this with my service growth strategy, but that you are already a massive champion, create a digital and do business in the service business and then still first service.

01:14:42 Speaker 1
I actually have that now, if I think about it now for a moment, I can't think of it off the top of my head.

01:14:45 Speaker 1
I've experienced that. So probably there is, but it's strange, interesting question, you might have to think about it again.

01:14:46 Speaker 3
Ok.

01:14:52 Speaker 1
Yes, Siemens, well Siemens and you can then be already strong in the service business and in the digital have then still done first service. Well, there is.

01:14:58 Speaker 1
Yes, OK.

01:15:01 Speaker 3
Super exciting then the yes then.

01:15:04 Speaker 1
And by the way, maybe a comment on it, if you really think about it. Yes, so about Siemens, Schneider, Electric, ABB, Hitachi, and such companies with whom you can do that.

01:15:15 Speaker 1
That's exciting anyway. In other words, Schneider Electric.

01:15:19 Speaker 1
There are already some products in April Service, but they don't really do it consistently. If you ask me and I don't think Siemens will either.

01:15:28 Speaker 1
So, I think it seems to me that the realization is there with them that EaaS is not the solution for them either or they are perhaps partly afraid of it. So, I don't see the consistent focus on EaaS with such big names.

01:15:44 Speaker 1
I don't think these cannibalization effects seem to play a big role after all, mentally. Yes, the big ones don't dare to do their classic core business really consistently on EaaS center, so in the software area yes but in the hardware business, I think the Transatlantic so I think if they have had projects with Siemens Size or something like that or Alstom at the end, if they submit the EaaS use case to a customer for the financing, he first comes up with what he actually pays per hour of production with them and then he is guaranteed not to buy from them anymore, yes, so that's also a phenomenon that you can see then.

01:16:21 Speaker 3
The role of MVP approaches was the Equipment as a Service implementation.

01:16:30 Speaker 1
I don't know. If you now take a net present value for such a project financing below 3-4 assumption, how the utilization behaves.

01:16:39 Speaker 1
Then I don't know exactly what your question is whether it just goes in such a direction. Yes, then I mean you call you do work from my point of view where I where I worked, that the word MPV is actually hardly put in your mouth, rather in project financing-heavy industries, but actually with a classic Roi Calculator you always talk about ROI in years and never about Npv or something like that.

01:17:04 Speaker 3
No, it wasn't about the net present value. It was actually about MVP, so you can start with.

01:17:13 Speaker 3
Yes, of course, Soul is my mistake. Exactly that you have such a basic product and put it on, test it and then go into implementation, test again and move on.

01:17:24 Speaker 1
yes, yes, so if that's how you do it, of course, with MVP being the product. Actually.

01:17:30 Speaker 1
The product is relatively clear, what you just say, what you sharpen are just those that the small troops contract components and. The prices and the conditions that you offer to individual customers and you.

01:17:44 Speaker 1

Man, you have to say, there is also a lot, there is still, so there is simply internal calculation, which you then make, you can talk to him, what is his name, I can call him again, with the ability they can talk to, he is there, he has done a lot in such directions with internal national calculations whether something like this is worthwhile and yes, Spengler, talk to Spengler from Zeiss.

01:18:52 Speaker 1
Very little changes, only internal trust grows. Yes, so you know what I mean, a lot of people have already said how bombproof the business case is. It's perfectly clear, yes, and there are some use cases that are very, very plausible, yes.
01:19:16 Speaker 1
He used to buy it and then throw it away. Yes, so that's how the industry officials are and today the EaaS does and buys 80% and that means does it then.

01:19:25 Speaker 1
To Africa? Yes, he earns himself stupid and stupid. So, let's go in the direction of, yes, so you believe it quite quickly, only internally believes that no one believes you yet or they believe them too, but no one acts on the button, then you can talk to him how he pushed it through internally, yes.

01:19:39 Speaker 3
Okay yes, great, we definitely will.

01:19:42 Speaker 3
Then perhaps we would like to conclude on the subject of implementation. Would you still have an opinion on the extent to which the Corona pandemic or the Ukraine war influence or have influenced the implementation?

01:20:00 Speaker 1
No, so I've already told him something about Corona. I think that was beneficial, actually yes.

01:20:07 Speaker 3
Super OK and then you had already mentioned, can you think of any other concrete practical examples of successful EaaS adoption on the customer or provider side that you could also share with us?

01:20:28 Speaker 1
Well, I think the premier class, the premier class at this point is the consumer base integration.

01:20:36 Speaker 1
That's the wet, dreamy dream that everyone is fantasizing about, yes.

01:20:44 Speaker 1
If you look at such consumable models now.

01:20:50 Speaker 1
Service level and financing structure. Well, I'll put it this way, you can argue about it for a long time, but you can certainly take another look at how the models look so concretely.

01:21:08 Speaker 1

Because at the end of the day, there are also leasing machines in the end, and they simply have the consumption of the subscription integrated. I think it's the Heidelberg printing press model itself.

01:21:22 Speaker 1
It is clear that the implementation is of course suffering from structural problems. But this is actually a successful model for me as well.

01:21:31 Speaker 1
Schneider Electric should also take a look, has some such service models on the market.

01:21:38 Speaker 1
Which, in the end, are less about the consumer image topic than about it. A little bit in that direction as well.

01:21:44 Speaker 1
More holistic, let's say productivity partners, they have a whole range of digitalization assignments.

01:21:52 Speaker 1
Of course, also with the area and so with all the mis systems and EaaS solutions. There in the environment where they do a little bit of the value proposition more like that from a yes here customer partnership you have all the apps and stuff and we support you in your productivity, you need to get rid of your maintenance team on your team, we do upscaling with them and so and so I also find that quite exciting, so there is take a look at this Echo Scratcher from Schneider Electric in combination with Hardware products such as control cabinets and there are quite a few.

01:22:22 Speaker 1
I think Siemens is doing a pretty good job when it comes to EaaS in the area of infrastructure.

01:22:29 Speaker 1
If you're there. So, I can do it everywhere, I think we have enough contacts for the moment, so you can certainly look at something, what's exciting about the models is in particular again. So, for example, they also do business with the public sector, so that they are just the same in terms of positioning.

01:22:49 Speaker 1
Set up as an overall partner, so to speak, which means that they ultimately also locate a whole series of third-party companies ultimately in the provision of services and but bill Assassin's as a whole, so to speak. So that would be exciting. By the way, the same thing is done with these light access service models, where, for example, they also hire craftsmen and so on locally and then quickly be able to offer such a complete package to an airport per hour of operation per day, per whatever or something like that. So, these are certainly exciting models, a lot of people always talk about Rolls Royce and these engine models.

01:23:24 Speaker 1
Typically, completely misunderstood. Yes, so many always say, you now buy the engine per hour or so ne I hope you have already done that through drugs and that.

01:23:40 Speaker 3
At this point, at least from my side, it would be a huge thank you for your time with the questionnaire in advance, that you have taken so long time for all the inputs, for the contacts, for the further suggestions. I think this has helped us a lot and we also appreciate it very much, so I would now like to give my 2 colleagues the opportunity for a moment.

01:24:00 Speaker 3
Still to ask questions or share final words.

01:24:30 Speaker 4
Also, from my side my I am. I am. The train of thought is still ongoing, has definitely triggered very, very, very much, super exciting, that's why I might be interested in a final evaluation from you, so to what extent is equipment, i.e. service, a serious instrument at all or to what extent is it just innovation storytelling from consultancies, start-ups, financiers or just such players now Relayr.

01:25:03 Speaker 1
So, I tried, I tried again. Well, I'll try to rephrase it sometime. I think there is a massive hype there, but the hype has already flattened out again, that's right and I think most of the people who continue this don't actually understand the basic features of the model, have never dealt with the business class in detail and don't understand the practical challenges in the industrial company to scale it and are not of much help for the implementation anyway, it's just a bit of critical market observation, if she then just knows this advice already, so what's the point.

01:25:35 Speaker 1
I believe.

01:25:37 Speaker 1
Nevertheless, there is no alternative to the model. Yes, for the reason of the shortage of skilled workers and for the issue of focusing on core business in some industries. I also believe that there is no alternative to the model for, let's say, very technology-driven, high-priced equipment, manufacturers who have to or want to transform their market environment, their lady, their business model a bit, but in the end it's not about the word as a service, it's actually more about the financing aspect.

01:26:08 Speaker 1
And perhaps the complementary services. And now is always the question.

01:26:14 Speaker 1
Whether you can't also arrange a loan for a customer in the end and conclude a service contract at the end. And of course, it's already the case that you're there.

01:26:24 Speaker 1
Quasi, if you pack it up, you can somehow kick in the customer's door a little bit 2 years earlier than if he comes up with the idea himself at some point. Maybe yes and comes around the corner with such a story and so I think there are a lot of factors that flood the whole thing a bit or something like that, yes, so if you look at it again maybe from my perception, it's just the case that the big, listed companies on the provider side like to make such a story out of it.

01:26:50 Speaker 1

To say, these records in revenue story to bring their stock market valuation up a bit, so to speak, yes, that affects companies, Hitachi, Siemens, Schneider Electric, and there is also a bit of something to it.

01:27:03 Speaker 1
That certainly has some implication, but I would dispute that when they talk about hardware business, it's kind of like the software business, that justifies that valuation. That's just half the way it is, if you look at it closer, ultimately, the customers need equipment or need EaaS is another way of giving that, so that's the way it is.

01:27:21 Speaker 1
A bit like that. That's just not really always just one.

01:27:26 Speaker 1
So, these productivity gains are not achievable from my point of view from the pure construct and that is overestimated, because basically the first service model is ultimately not more productive, because they can't afford it as a provider in my view, not because it wouldn't be theoretically possible, but they do it on.

01:27:43 Speaker 1
Not and accordingly the whole stock market valuation, all these stories and gone, and that's all exaggerated, so I think that's exaggerated, but it's also an issue that you have to take on, even as an SME and.

01:27:54 Speaker 1
With financing partners.

01:27:55 Speaker 1
And so on, and that's the right thing to do, and I believe that the.

01:27:59 Speaker 1
Conditions no, so keyword we will no longer own anything and all will be possible and such quotations in such directions will bring a certain push into such models.

01:28:10 Speaker 1
But as I said, what a macroeconomic point of view is just then still critical of the question too.

01:28:14 Speaker 1
It's really more sustainable, it's really cheaper, where I personally tend to come to the end, probably not, because I still see business cases where owning machines is also better in the end than such a purchase model, so the question is very philosophical, I don't have an answer now, but they just noticed: I'm critical in general, like this: There are business cases is also an exciting topic.

01:28:39 Speaker 1
But I have, so it's also man, you shouldn't underestimate it, that's the danger again, so that's very difficult terrain and every entrepreneur probably has to look very sharply in his context himself.

01:28:51 Speaker 1

What she's doing with the topic now, though, it's definitely not a miracle cure, no, because the typical companies, which at least once did its Heidelberger Druckmaschinen.

01:29:01 Speaker 1
Yes, they're actually broke, too. At the end of the day, yes or will also go bankrupt and they are massively good in the model, but it also didn't save them at the end of the day, so there was also n like act of desperation where the manufacturer Trumpf makes 0% of its sales with such models and stands there with Relayr or something. Yes, that's actually basically everyone knows it doesn't work behind the scenes either.

01:29:21 Speaker 1
Knowing DMG Mori or something like that have started now, there's nothing wrong with that now. Yes, it's substantial, you don't know, go, and go in that direction, talk to DMG. Yes, the Japanese CEO wants to go into automation, he doesn't like it so much either, so I want to say that many of these stories that exist there are also behind the scenes, also with little substance, so it's really just where I say simply.

01:29:46 Speaker 1
In the.

01:29:47 Speaker 1
A lot will happen in the next 3 years, but for classic mechanical engineering, such as machine tools, grinding machines, laser processing machines, sheet metal processing, all this I can imagine, will certainly take another 6 to 10 years. So, until there is really about 10% market share for as a service, yes, I think that was my opinion, so listen to what the others say, as I said, I haven't been in the topic for a long time.

01:30:44 Speaker 4
What does that look like from the point of view of a private equity player? Who, I would say, invests in a mechanical engineering company.

01:30:52 Speaker 4
Or in a manufacturing company. How would you rate that as an instrument for value creation, so to speak? Yes, yes.

01:31:18 Speaker 1
So, it's a double-edged sword. I've been thinking about this topic for a long time and so this, that's already so the topic of private equity is a good point, so from my point of view it's the case that in the normal, let's say, target circle for sales financiers like Siemens Financial Services the margins are not as particularly high as the private attribute can find exciting, because there are also the risks and all the things that are attached to it and so on. So that's just in a nutshell, if you now say you're going to make a fund to invest the 1000000000.

01:31:53 Speaker 1
That's, I think, for private equity. If you really calculate everything exactly and look at it and so on, then they could actually do sales financing, where there is Siemens Financial Services, so there is every Postbank actually does industrial financing in a kind of way, where ultimately a machine is bought somewhere, whether they give the customer the money, yes or the provider.

01:32:14 Speaker 1
Somewhere, the margins are the way they are. So, the business case is difficult, but there are already industries where I would argue.

01:32:23 Speaker 1
That there are structural advantages and that this is because the players simply do not recognize this, so to speak, or that the financing partners are not in it either.

01:32:32 Speaker 1
Or the manufacturers, such as healthcare. Yes, so I would say that if private equity now takes 1000000000 and goes into the hospital asset assist service market, yes that's n business Chester is going on, but not in the sheet metal working machine market, that's what I actually wanted now.

01:32:49 Speaker 1
Speak. And now the question is, how does private equity find the way to invest the money? Is it now going to the hospitals?

01:32:56 Speaker 1
Yes, I mean, there is also private equity, they buy massively, just grown ophthalmologist in Germany, that is of course driven by the customer side, and then he just buys the equipment at the end or reads it, whatever, or do they just go through the OEM, which does automotive, so to speak, or do they go to the hospital, into all the service companies, there are also companies in the hospital environment so that was nice.

01:33:33 Speaker 1
So, for example, in Germany, it's like ophthalmologists' practices, so it's getting harder and harder to open a dental practice, etc., salaries are also massively declining for professional hires, and I think so.

01:33:46 Speaker 1
That if you somehow invest the money, you can invest it in dental equipment for the manufacturer, so to speak. Why?

01:33:55 Speaker 1
Dance Fly, for example. Or are there others? I think that's already a huge business class, yes, I think it's going to be right now.

01:34:01 Speaker 1
Not seen that way, yes.

01:34:06 Speaker 4
Yes, exciting, so thank you very much again for the perspective.

01:34:10 Speaker 1
Don't know if this will help you now. I always like to talk like that.

01:34:12 Speaker 4
So very, very, very, very that they have been helping us for more than an hour and a half now definitely no one else has picked up. Yes, so yes.

Interview Transcript Participant 14

Speaker 2 00:38
I am responsible for the revenues of our consulting business in Central Western Europe, and at the same time in a dual role also globally for the Digital Transformation Consulting area.

Speaker 2 00:57
I'm a business economist and I'm in healthcare.

Speaker 1 01:12
Okay, great. Great. Quick question, you can see by now my questionnaire that I shared. Yes. Great, perfect. Then I would also start with the first question in. Which has familiar with the concept of Equipment as a Service as a business model.

Speaker 1 01:27 To
To what extent are machine manufacturers familiar with the Equipment as a Service concept?

Speaker 2 01:39
Machine manufacturers, so they kind of mean companies like ours, yeah. Exactly, right.

Speaker 1 01:44
Exactly the large machinery and equipment manufacturing in Germany, also the health care sector with it.

Speaker 2 01:50
Yes, I believe that we are very familiar with this and that we also offer a number of products in this area, and I believe that as a company we can sense the global trend that this as-a-service concept is growing and becoming stronger among many of our customers.

Speaker 1 02:19
Yes, super. That means you can also confirm that there is also a lot of familiarity with the concept on the customer side as well.

Speaker 2 02:30
Absolutely. Yes, I would absolutely agree with that.

Speaker 1 02:34
Great, great. Then like to actually right away, what are typical providers and customers of equipment as a service offered for you or from your perspective, if you can identify that that way, if there are any intersections.

Speaker 2 02:53
Yes, so I am working and can only speak for the Healthcare system. If I now look at the big service providers and large hospitals etc., then it is already a huge topic, I think, especially with large medical devices.

Speaker 2 03:18
It is definitely an issue, because we are of course on the road in an investment level and also

in a runtime that these devices are used, that this is definitely interesting for the customers.

Speaker 2 03:32
In the healthcare sector, customers are hospitals that are privately operated, non-profit or public, but also private equity-operated chains in the outpatient sector, for example.

Speaker 2 03:46
there is a lot in radiology, but also in dental etc. So, I think especially companies that are very, and that is now also very common trend across the health care industry, efficiency driven, and are monitoring very closely the advantages and disadvantages of the different offerings.

Speaker 2 04:11
I think that's a good option. And for us, of course, as a supplier of medical technology devices, this is very interesting, especially for the large devices. But we are also noticing that there is an increasing trend towards this in the area of smaller devices, and that the customer is also inclined to say that if you have an as-a-service concept, then it is usually not just related to one product or one of our services, but you usually make a whole package, which can also include various product groups.

Speaker 1 04:50
Okay, very exciting. I mean, you just touched on it briefly, but could you perhaps actually identify recurring characteristics or requirements of these customers or providers, which always catches your eye?

Speaker 2 05:09
So I think a recurring feature in our, ultimately the as a service or major service packages offered, it's actually always the case with the customers that the pricing or the financing is of course one of the absolute main features why one deals with such a model, because there are simply the postponement possibilities of the payment dates and you just don't have this one-time investment at the beginning as a rule.

Speaker 2 05:48
That is, that is in any case often a motive. And then we also notice that when the customer first thinks in such a model, that is also a recurring feature, that is that the customers say, we actually want or we are actually interested in more than just the pure product, so in our example, for example, an MRI device or a CT device, but we also want in particular a comprehensive service that is included in the package.

Speaker 2 06:21
Of course, we want to include maintenance topics, but we also want things such as suspended consulting services, so that the customer is more likely to take the position and say, I don't just want to buy a machine, but I actually want to have a good solution from the manufacturer with whom I am entering into a deal.

Speaker 2 06:44
That is, he should also tell me how I can operate this machine as efficiently as possible, how I can keep the costs for operating the machine as low as possible, what other machine equipment I might need in the area in order to achieve the best possible set-up for this area, the most efficient set-up, these are all questions that you actually have less with such a classic

set-up of a single product.

Speaker 2 07:12 It is
then very much simply about the quality of the product and the price. Here it is actually often already about much more. One is also very much more, or the customer expects very much more than one deals with his situation, with his environment, by which he operates this machine, also as a supplier.

Speaker 1 07:31
Okay, great, super exciting. I would then move on to the next question, which is already a little bit on the heels of what you just teased. The need for EaaS solution. You once said a level of awareness is there, but how would you specifically identify the need on the customer and vendor side?

Speaker 2 07:51
Well, first of all, I would say on the provider side, I would say it's not so much a need, but rather a demand that you ultimately have to and want to satisfy. So that's rather less that I think as a provider you necessarily feel the need.

Speaker 2 08:13
But I believe that customers, as I have already briefly mentioned, have various motives for saying that it makes sense to operate an as-a-service model, because in addition to a product, they can obtain significantly more elements, services, solutions from a provider or from a provider.

Speaker 2 08:43
It is often the case that, from the customer's perspective, you don't usually have the top experts in your company for every machine or for every area of application by operating this machine, so that the management often says that we are deliberately buying in the know-how in addition to the machine.

Speaker 2 09:10
So the issue of shortage in skilled workers is a huge topic. Hence, the customer goes on and says: we outsource this expertise, or buy it in, get our equipment as a total service offer and are thus assured that what we get always at the most up-to-date and highest level of machinery equipment. In this case, the customers do not have to invest in recruiting, training, etc., which, of course, is also a huge issue for most companies in times of a shortage of skilled workers and additionally have a no-worry solution.

Speaker 1 09:40
Absolutely. You have already addressed many points that we have already heard from other interviewees. I would then also like to go back to the specific sectors and machines, even if you do of course have a strong impact on MedTech.

Speaker 1 09:55
Speaking generally or from your experience in the field, would you be able to identify specific industries that are really predestined for Equipment as a Service adoption?

Speaker 2 10:08
So I think outside of the healthcare industry, I'm probably really not very capable of making a

statement, that would only be best guess, so I think I'll hold back on that. There are certainly other experts who can assess it much better.

Speaker 2 10:24
I just think that the, to underline that again, that the health care industry is predestined for this, and that we also notice that this is also really a global act.

Speaker 2 10:38
So it's not that we're saying that we're not noticing this in Germany or in parts of Europe and the rest, but regardless of whether we're in Europe, in Asia, or very strongly in the U.S., the trend is going in exactly this direction and many, many companies are very, very interested in entering into longer-term partnerships with the provider.

Speaker 2 11:04
By the way, this is perhaps another reason that I can add a little bit, that we have also noticed this now as a result of the various crises that have shaken us worldwide in the last one, two, three years.

Speaker 2 11:18
That is for the customer, but of course also for the provider. Especially in times like these, it's a nice thing to have a secure partial cooperation that is fixed for 10, 20 years, where the content, but also the prices are partially secured with a small clause in the direction of inflation, but where the customers simply know that they will receive their deliveries with priority, and that they will perhaps not be caught as badly by inflation as others.

Speaker 2 11:55
You can cover that much better in this contract. That means that this stability and this partnership character that something like this acquires, I believe, has a definite advantage for both sides, especially in times of crisis.

Speaker 1 12:13
Absolutely, that also reflects what we have heard so far. If we were to go one level deeper and look at machines and equipment.

Speaker 1 12:29
Yes. It's actually these technology partnerships that they also enter into with the hospitals. What does that look like then? Do they usually actually offer a whole fleet of vehicles to the hospital or one or two machines and if so, which machines?

Speaker 2 12:48
Exactly, I had already mentioned that. So, it's really the case that when we enter into such a technology partnership with customers, then first of all, let's say the concrete characteristics are the terms actually always so at least 10 years, depending on the region worldwide it can also be significantly longer.

Speaker 2 13:06
So we also have partnerships that go up to 30 years even. Yes, that is really very long-term. But in the European area, for example, 10, 15 years is actually a good average.

Speaker 2 13:17
So that's for the duration. And then it is the case that the customers actually approach the manufacturer at the beginning of the initiation of such a technology partnership and say, I am interested in a partnership for the areas.

Speaker 2 13:35
Yes, and then there's imaging in the hospital, for example. That is, with imaging, of course, we always have the large equipment, such as MRI, CT, X-ray systems, etc. included. But he may also say, I would like to have the same again for ultrasound diagnostics in addition.

Speaker 2 13:53
I might even want to have that for biomedical smaller devices. And depending on how the customer has defined that for themselves, that's then just a system, which is either or a partnership that either significantly takes into account the major devices, but then also all of them, up to actually almost the entire medical technology.

Speaker 2 14:16
So until also so, I say, daily consumption products, that is of course then usually rather not included, but that there really is extremely much in it. And then it would be, if you put yourself in the customer's perspective, you can really say, from the moment the contract is concluded, you can actually say for 10, 15 years, okay, we don't need to worry much about this topic, we don't need to make a tender, we know what we're getting.

Speaker 2 14:42
And that is what we have just mentioned with the vehicle fleet. In these technology partnerships, we provide a roadmap at the beginning or during the tendering phase for all bidders who bid on it.

Speaker 2 14:55
And let's assume that the technology partnership runs for 10 years. It is then very precisely defined in which year between 2023 and 2032, for example, which device will be replaced.

Speaker 2 15:11
And then there are also, for example, there are also differences, there are customers who can say relatively precisely what devices they actually want and need. We as the provider usually do it in such a way that we specify so-called device classes, the customer can choose from.

Speaker 2 15:25
And say that MRT we replaced in 2025 in the equipment class A. So that's an example, if you kind of compare us to cars, that's then maybe the Ferrari. You can also say equipment class B is then Mercedes.

Speaker 2 15:39
Device class C will then be a Passat from VW and so on. So, you can sort of narrow down the classes, because that's important for us for pricing, of course. And within the class, of course, the customer can still decide in 2025 or 2030.

Speaker 2 15:55
Now I want type A1, A2, A3, whatever. So that is very precisely defined and part of this partnership. And in addition to that, in principle, the entire area of service maintenance is

defined over this entire term, also with different service levels.

Speaker 2 16:15
Also there the customer can then say, I want quasi the top service, where I have the security that if I call the provider, the phone rings max. 1 time and I receive support from the other end. And then I get immediate consultation individually for my inquiries and about the products. That’s a huge difference and very much appreciated customer service compared to ending up at some point in the call centre and someone might help me hours later.

Speaker 2 16:29
And then there are also elements, such as from our team in consulting, where there are also different models. Either you say at the beginning of the partnership that three consulting projects are to be carried out on these and these topics.

Speaker 2 16:47
Or you just agree and say, there is a quota of consultant days, which can be used during this entire term to customers wish, so to speak, or depending on what then just for challenges arise.

Speaker 2 17:02
And so, in principle, you have a total package, which is the absolute main component, and also includes many other solutions. But I think that's also from the character, you have to clear or delete.

Speaker 2 17:18
If the machines are not missing as the main component of this partnership, then the partnership will not exist. So that's where everything hinges. And everything else is then just at Work.

Speaker 1 17:30
Yes, definitely super understandable. Could you maybe say, characteristics of machines like just the standardization or mobility or number of moving parts, if there's a correlation there, how much they lend themselves to an as a service model, just that that doesn't apply in MedTech?

Speaker 2 17:59
Yes, so I think that what I would say there is the, so the large-scale equipment that then of course especially in the MRI, that is fixed at one location for of course governmental reasons, for radiation protection reasons, that of course you can't move every year times.

Speaker 2 18:17
Such or CTs, which are quite often part of the partnership, because they are also out of this financing issue, yes these are investment volumes just of a few million euros, which are just for so hospitals then already a large investment volume in medical technology, they are often and actually core of these products, then all these movable objects of ultrasound devices, of any transducers, of any, whatever, yes that is of course sometimes there, but I would already say, the very clear tendency goes to the, so one could express it that way, the larger and more immovable that more often part of the partnership.

Speaker 2 19:02
Okay, yes.

Speaker 1 19:04
Super exciting, would you say that in the MedTech space, aftersales or the second market for this equipment is also relevant or who actually destroys the equipment after the technology partnerships.

Speaker 2 19:18
That's quite different, depending, so that also tends to have less to do with whether or not it's an as a service or partnership contract, because there's generally an individual agreement with the customer.

Speaker 2 19:34
There are also customers in the world who say we'll take care of disposing of the thing ourselves or reselling it or whatever. Of course, we are also very interested in sustainability, so that there might be a second market.

Speaker 2 19:50
We are now also at a stage with the devices, that a very large part of them is recyclable and that then in the shell, in principle, a clearly modern technology is simply built in. Thus, it can then be reused again as an upgraded device and therefore we are of course interested in using that, the things, either to scrap them again or to pass them on, to sell and there are also in the global market quite opportunities, big secondary markets to resell.

Speaker 1 20:34
So you can already say that at least at (company anonymized) this product lifecycle is actually being thought through.

Speaker 2 20:40
Absolutely, yes. So, this product lifecycle topic very clearly the core of the strategy. And I have right now, unfortunately, my product colleagues could pull that out of their sleeves, but I don't have the share right now, unfortunately.

Speaker 2 20:52
I was at a lecture the other day where I heard it, but really the proportion of parts that are now used in an MRI device, for example, that can be reused in ten years' time when the thing is upgraded again in some way, is now extremely high.

Speaker 2 21:07
So that's very little that can't be used anymore.

Speaker 1 21:12
Yeah, great. If you cut that again, feel free to write to me, of course, that's super exciting to see. But then I would go back now in the amount of time again quickly on the challenges and concerns and the drivers.

Speaker 1 21:25
And then I would like to know once especially from the provider side, what are really the

typical challenges, simply times on macro level and then on company level.

Speaker 2 21:45
So, speaking from the supplier side, if you look in the direction of the competition and fall over, then of course it's like that. I have already said that these technology partnerships are always based on a relatively long term.

Speaker 2 22:04
On the other hand, they are also often so comprehensive that the revenue drivers of our machines are included there. That means, if you look at a customer and say, we currently have only a small share of machines and the rest comes from Philips, GE.

Speaker 2 22:26
etc. Then, of course, the attraction for us is also very great through such a partnership, which one would then win with such a customer, to take market share away from the competition at a stroke by saying that we are turning a customer, who was otherwise either divided between all the suppliers or who otherwise bought Philips significantly, completely over to (company anonymized).

Speaker 2 22:50
In this way, you also gain extreme market share. The negative example, however, is when you have a customer who buys everything from (company anonymized) anyway and then comes up with the idea that, yes, we could actually do this, we are (company anonymized) customers anyway, we could do it in the form of a partnership.

Speaker 2 23:08
And then, of course, you have at the same time, because it usually has to be put out to tender, so there are different specifications per country, but one, for example Germany, there are very clear tendering rules, that is, such a partnership is always subject to tendering.

Speaker 2 23:22
That means that the entire revenue that you make with this customer is actually at risk. Because if you lose it to Philips or GE, then you suddenly lose this customer for 10, 15 years.

Speaker 2 23:34
And accordingly, it's very relevant from a competitive point of view in any case, which also leads to the fact, then again from the customer side, that they of course know, okay, with these partnerships, the providers are also quite willing to make reasonable prices, because if they then go in with too high prices, then the danger is just very great that you lose out and lose the customer for 10-15 years instantly

Speaker 2 24:01
And that's why that's definitely something. I think that if you take it, because it's there again as a sub-point with you, with the technological megatrends, that is of course, I think, totally relevant, especially from the customer perspective, and that is also often such a sub-clause that you really say that you want to be the first to profit from the new developments and trends, and thus you have a little safeguard, so to speak, that you don't miss out on these trends.

Speaker 2 24:36
For example, we always do so-called annual medical boards with the customers, where exactly the latest topics are presented or pilots are presented, so that the customers are usually much better informed and have better, faster access than others.

Speaker 2 25:02
Corporate level you still had on it. Marketing for us for sure, a huge topic, because these partnerships can be marketed totally well. Yes, and so of course it's a great thing to be able to say that customer XY is so convinced of us that he'll buy in 15 years, nothing else.

Speaker 2 25:19
That's great, of course. Financial trailers, of course, for the customer in particular, but it's also a very predictable revenue for us. That also has to be said. And operationally, I think we've already talked too, just also on skills shortages, but also efficiencies.

Speaker 2 25:37
And it can fit well with a customer's strategy to say, we would like to outsource this in general. Yes, these are the issues.

Speaker 1 25:49
Class, super. Then actually just briefly in how much name because Covid and or the Ukraine war concretely changed the playing field or strengthened the drivers.

Speaker 2 25:59
So in principle, with the topic of crises, that's exactly what I meant.
Would I say, in the spirit of time let's rather go back to the drivers for acceptance, but that's exactly what I meant.

Speaker 1 26:11
Okay, great. Yes, exactly, then drivers and acceptance. Then just simply, I mean, have very partially now also already mentioned what positively drives. And then I will be interested in fact above all again, whether I spontaneously any KPIs or target systems or incentives come to mind, or they also use, so that one integrates as a service -success and ensures the project success.

Speaker 1 26:35 Is there
anything that comes to mind?

Speaker 2 26:37
Yes. So, it's sometimes even the case that customers are now already demanding such KPIs, or I'll say success guarantees in the signing of the contract for this partnership. So, for example, the machine utilization is now that they say, okay, we're now entering into a partnership, we're somehow buying a new device, we're somehow buying AI that accelerates the whole thing and we're buying consulting to convert the workflows.

Speaker 2 27:12
For example customers demand stuff like: We'll buy all of that, but we either want to pay you only if we can get three more patients through per hour or we'll pay you such and such a percentage of the value added or the profit that we get out of it as a share of the success.

Speaker 2 27:32
So there are different methods based on progress and usually just now machine-related are that with us just of course significantly utilization issues. However, it is now also quite an energy efficiency issue, because even that as after especially in Europe as a result of the Ukraine war the significantly increased energy prices, one MRT -time consumed as a comparison, I believe that more than four households consume one MRT -device.

Speaker 2 28:07
So that's really relevant, what goes away there in terms of electricity. That is, there is also often the demand from the customer, we want to reduce our energy consumption and you have to achieve the KPI or if you achieve that, then you get more money or if you don't achieve it, you get the discount.

Speaker 2 28:24
Yes, just as in the service quality there are also KPI's that is ensured that we then also have a technology on site in such and such a time, at such and such a time that the problems are solved so and so quickly.

Speaker 2 28:40
There are also partly then Effort dependent components and otherwise there are of course also in particular financial KPI's, which are then decisive. On the one hand, this is clearly the distribution of the investment, the consideration of the cash flow, the depreciation and then also the said efficiency increases, which should ideally also have a bottom-line effect.

Speaker 1 29:24
So if you don't mind, I would ask two more questions. To what extent would you say, because you mentioned a private equity firm earlier, to what extent would you claim, or would it be interesting to introduce in the equipment as a service model from private equity then in terms of buying out?

Speaker 1 29:42
Do you think that makes sense, in terms of increasing the efficiency of the company, what's being bought out and the sell-off potential?

Speaker 2 29:54
So when I look at our customer power, it tends to be that these companies that are more private equity driven are not part of the technology partnerships. Okay, yes. Or have very specific requirements, because I think that often, especially in such companies, there is still a belief that, hey, if we operate every single device with our market power, if we have several houses, several radii, whatever, that we will be able to squeeze the suppliers for each device in such a way that we will have price advantages when we negotiate it individually.

Speaker 2 30:38
And for them, especially if they then just mostly year if private equity is behind it, then it is not somehow a single service provider, but just a multitude that belongs to it. This means that they naturally also leverage a great deal of synergies in purchasing in medical technology.

Speaker 2 30:58
And accordingly I would rather say, also this topic, what we have addressed with, that one in such a skilled worker shortage know how etc. there services additionally catches up, is not so

relevant, if one has a functioning apparatus itself, which one can divide so energetically on the hand or, than if one operates for example only in an alone standing public hospital.

Speaker 1 31:21
Great, exciting. Other than that, I think we've brushed off everything. You already said, Covid -pandemic, shortage of skilled workers, lower investment volume, etc. are all important issues. Because then it would be fine from my side.

Speaker 2 31:30
Yes exactly, the pandemic drove these topics of labour shortage and missing CAPEX abilities on customer side significantly.

Speaker 2 31:52
I wish you already a greeting, good luck for the work. I hope something reasonable will come out of it. And yes, I was very happy to do.

Speaker 1 32:02
Thank you. Thank you very much. See you then. Have a good day. Ciao. Ciao.

Interview Transcript Participants 15 & 16

0:0:40.728 --> 0:0:48.798
Speaker 1
From your point of view to what extent are machine manufacturers and their customers familiar with EaaS?

0:0:53.838 --> 0:1:3.138
Speaker 2
Well, from my point of view, I would say that this is basically a topic that has perhaps already been heard of but is not yet widespread in the field of mechanical engineering.

0:1:7.68 --> 0:1:16.268
Speaker 2
I think that has different reasons. Basically, one finds the idea appealing and also considers how one can get involved in the topic as a mechanical engineer. You also think about how you can build up possible business areas.

0:1:20.978 --> 0:1:28.38
Speaker 2
But basically not yet so widely penetrated that now every machine builder has a product for it on the market.

0:1:50.938 --> 0:1:59.438
Speaker 1
From your point of view, what are the typical customers and the typical providers of EaaS, if you have already met them?

0:2:2.508 --> 0:2:10.848
Speaker 2
I'm familiar with this from the IT sector in particular, so this is not classic mechanical engineering, but we have infrastructure-as-a-service topics, especially in the IT field.

0:2:10.878 --> 0:2:21.578
Speaker 2
Where it is then about creating in this service model above all a scalability for the customers yes, which goes as quickly as possible, as spontaneously as possible and is somehow possible large volume scalable.

0:2:22.968 --> 0:3:1.758
Speaker 2
In the area of mechanical engineering, it is much more difficult to scale this on the one hand and on the other hand to offer such a service at all, yes, because we usually have very specialized tools, which entail correspondingly expensive prices and because we have very high-quality standards. And there is also the issue of the warranty at the end, if I now bring my product to a machine on a short-term basis under an EaaS model, that I can maintain the quality standard at all.

0:3:10.358 --> 0:3:24.148
Speaker 1
Then I would go directly to the next question also because of the time do you have specifically industries that you think are predestined for the adaptation of EaaS always?

0:3:27.748 --> 0:3:27.998
Speaker 1
Mhm.

0:3:23.598 --> 0:3:28.528
Speaker 2
Yes, we were also thinking about this a little bit in the team earlier. I think it makes sense to think about the future of mechanical engineering activities, i.e. everything that is very computer-aided and where there is little specialization in tools, such as 3D printers or CNC milling. That is certainly predestined for it, because the devices are quite easily interchangeable.

0:3:50.988 --> 0:3:59.928
Speaker 2
Where it gets difficult is when we talk about IP-sensitive machines or when we talk about printing machines, where there are very special settings for each manufacturer, who has to run in his machine, I don't know, for 2-3-4 weeks before he even uses it for his product, in order to maintain his quality level.

0:4:9.548 --> 0:4:10.28
Speaker 2
That's why I see it more in the direction of factory-as-a-service for digitized machines or, if necessary, also for factory-as-a-service, i.e., that you have built up a complete production line that is coordinated in itself and then in a certain product group, where we have a product field, such as solar articles, that you can chase different products over it at a low quality standard, so that the manufacturer himself can outsource the scalability of such a factory and these peaks that he delivers with it. That's where I see the benefit above all.

0:4:43.388 --> 0:4:56.118
Speaker 2
Because everything else in the area of equipment, if we look at classic companies that buy a machine like this, then it's all about utilization, that is, their production line is already coordinated and then the producers run the machines with a very high number of cycles in order to break down the CAPEX utilization well, and there I see few fields in which you can manage this utilization in an EaaS model as a rental company and thus offer competitive prices.

0:5:23.878 --> 0:5:38.768
Speaker 1
Mhm yes, great, exciting, cool, then of course at the same time you have already addressed the types of machines and then I would actually go further and look at the drivers. Those that primarily prevent the adaptation of equipment service models, i.e. the inhibitors, and then I would like to look at what and the macro trends that are currently preventing the whole thing

for customers and providers, and then break them down from the company level into marketing, financial, operational, strategic, and organizational drivers.

0:6:9.538 --> 0:6:9.898
Speaker 2
Mhm.

0:6:7.658 --> 0:6:11.68
Speaker 1
I have it also here again on one if it is thought as was so.

0:6:12.268 --> 0:6:15.928
Speaker 2
So points that first hinder the concept you mean.

0:6:16.488 --> 0:6:19.458
Speaker 1
Exactly right yes and then separated on customer and provider side.

0:6:20.98 --> 0:6:30.568
Speaker 2
Yes, I have already touched on what hinders EaaS. The problem is that in mechanical engineering, especially in special mechanical engineering, but also in other mechanical engineering, when I look at printing plants, for example, the machines are so expensive that they are always very individually adapted to the customer. That is then always included in the service. That's not when I have the same model of printer machine twice, from Wind Müller Hölscher for example, and I put them next to each other, then they are completely different. They have different performance data, different attachment units, etc.
This means that in mechanical engineering we often talk about customized machines, and I think that both on the supplier side and simply on the customer side, this prevents us from imagining such a shared model in the final analysis. We are familiar with the classic leasing issues, which is all just a financing issue, but the division of a machine park, for example, between two companies, which would be a step in this direction, is very rare because the manufacturers who then use the machine have to configure it very specifically to their own needs.

0:7:28.178 --> 0:7:30.128
Speaker 1
Mhm, okay, exciting.

0:7:29.558 --> 0:7:31.728
Speaker 2
No, but that.

0:7:32.698 --> 0:7:49.238
Speaker 1
Yes, if you, you could identify certain macro drivers, whether it's now market and competition technological megatrends or the regulatory environment or demographic trends like the skills shortage that maybe also block the whole thing a bit currently.

0:7:56.918 --> 0:7:57.128
Speaker 1
Yes.

0:7:52.308 --> 0:8:3.38
Speaker 2
I think these are more factors that will accelerate the issue later. Yeah, I'll say the Devil is in the details here. If you can manage that, that vendors can somehow bring these different configurations, as I call them now, onto one machine and you can then serve, I don't know, two, three or four customers on the same machine, then the tide turns quite quickly. Then you have the advantages, above all, in terms of demographic trends, for one thing. I only have one machine operator, which I can divide between two, three or four companies. In the market and competitive environment, I basically always have an advantage, because I don't have the high capital costs and I have a scalable solution, which means that I only pay for the machine if I make money with my product. If I'm not making money with it at the moment, I don't pay for the machines as a manufacturer, because I'm not producing yet. I think these are the drivers that could move the field forward.

0:8:48.608 --> 0:9:1.918
Speaker 2
And I don't see the issue of regulation as being so blatant. Of course, you always have to take a detailed look at whether two large competitors who share the market can produce on the same machinery, but I think that is already the case at the moment. I'm thinking now of the food industry, I don't know, e.g. the producers in the sweetener sector. In the end, there are two production lines in China that manufacture cyclamate and press it into tablets. This then serves the entire European market. So, I don't think that will be an issue at all in terms of regulation.

0:9:23.528 --> 0:9:48.448
Speaker 1
Yeah okay, great, exciting, I mean, then you just mentioned it roughly, then now I would like to go again specifically on drivers for the adoption of EaaS and there like to look at, if given macro technical drivers and company level drivers. Again, customer and provider side separately.

0:9:49.708 --> 0:10:6.238
Speaker 2
Yes, so a macro driver is certainly, as-a-service has become sexy. You can see that's working quite well in IT. You can generate a lot of money with as-a-service models and, above all, you can generate a lot of customer loyalty. I think it's a bit of a blip in the industry, and they're trying to copy this successful business model. But I think that's a big driver.

Then, of course, we have the other macroeconomic drivers, such as skilled personnel to operate the special machines, etc. is becoming increasingly difficult to find.

Machines are becoming more and more autonomous, yes - keyword: CNC, 3D printer. Eventually, one machine here will be able to produce significantly more product variety, variant variety. If we think of a digital factory in this way, then we will have a production line that can produce up to 1,000 variants, which is of course much more interesting for an EaaS

model and is more likely to be thought of as a factory-as-a-service model. The fact that you can really map a lot with one line can of course help different customers.

0:11:0.548 --> 0:11:16.438
Speaker 2
Yes, I think with the big macroeconomic trends, yes, technology is always a strong driver and just the issue of lack of skilled personnel. Of course, as always in the economy, cost pressure. If I now break this down to the corporate level, then we have precisely this cost pressure, which will then be an advantage.

We certainly see a few situations from companies where this makes sense, e.g. I'm trying out new technology but don't feel like investing in the expensive machine.
I may have a new product that I want to test on the market, so I already have to produce the final product, but I don't know if it will fly. That means I'd rather try it out on someone else's production line, put it on the market and then see if it works and if it does, I can still ramp up production.

What you also see more often is spare parts management. If, for example, I am now at the end of service with my product, but I have promised a 20-year, 30-year spare parts warranty. But then I don't want to put the machine in the yard anymore because I can't use it in any other way. Then it might make sense for me to keep my tools and use them from time to time in an EaaS model like this. that you put in the yard because of this. There are currently also possibilities, but I think an as-a-service model is not that uninteresting, as long as my machinery is not too outdated.

0:12:17.898 --> 0:12:29.98
Speaker 1
Yes, okay, super exciting to what extent would you say then that the Corona pandemic and or the Ukraine war have had an impact on these drivers or these blocking factors, depending?

0:12:29.198 --> 0:12:43.768
Speaker 2
Well, I think the Corona pandemic has given a boost to technology, at least in Central Europe. People are no longer so rigidly fixed on their old way of thinking and just think a little bit more open and a little bit more progressive. I think that's the only impact I see there. But I don't see any direct connections.
And in the Ukraine war: What we see above all through this and what we have also seen through the Corona pandemic is the "de-risking" of supply chains. As a company, I want to try to take as much risk out of my supply chain as possible, and with an EaaS model, of course, I can offer what I previously had to import from offshore countries such as Asia, Central Asia, quite attractively in nearshoring, and thus I have far less risk in my supply chain for a similar cost calculation.

0:13:20.698 --> 0:13:22.328
Speaker 1
Mhm, yes, exciting.

0:13:24.628 --> 0:13:31.268
Speaker 1

Do you want to, could you still identify drivers at the enterprise level from a financial or operational perspective actually for customers or vendors?

0:13:37.28 --> 0:13:37.288
Speaker 1
Mhm.

0:13:34.288 --> 0:13:46.158
Speaker 2
Yes, so financially always. I save the CAPEX expenses. That's why many companies currently go into leasing, in machine leasing and no longer buy the machine, because just the CAPEX pressure is then not there. That will be just the operator from a financial point of view. And maybe, if I don't get the machine utilization for my product, I can improve my margin if I only have to pay half of the equipment. That is certainly an issue for companies.

0:14:3.318 --> 0:14:3.548
Speaker 1
Yes.

0:14:3.208 --> 0:14:13.478
Speaker 2
Operationally, I see fewer drivers. I see more problems there, so integrating that into the operational production process is of course a challenge. You can perhaps see how suppliers are involved in such assembly by the automotive manufacturer. What a construct it is, how complex it is to adapt such a line together.
I believe that an EaaS model will also be a very complex topic.

0:14:34.918 --> 0:14:46.398
Speaker 1
Okay, great, very good um, I would then actually go further to the promotion of EaaS adoption and attractiveness from the EaaS consulting projects.

0:15:33.128 --> 0:15:45.758
Speaker 3
Nah, that fits so let's not waste time and move on. So, if you please can scroll to page 3 where (name anonymized) said drivers are scarce. I would like to add my perspective to this.

0:15:53.69 --> 0:15:59.189
Speaker 3
Maybe you can consider flexibility as a factor in the operations. So, we're seeing a lot of flexibility regarding things in the industry that were not considered so flexible in the past. Now, we even have leasing models for workforce, which wasn't even in the discussion in the last year. So, people were seen as bound to a company before they start being part of it and started being productive. This is not the case nowadays. So, I would like to extend this concept now to the yeah, let's say machine-as-a-service. Yeah, maybe this is a perspective that you can consider. So, added flexibility, you get flexibility added into your capacity equation and you can calculate and escalate with master production schedule and let's say staffing reduction strategies or stuffing increased strategies depending on availability of people of workforce. So yeah.

0:17:20.769 --> 0:17:21.769
Speaker 1
Hmm, OK.

0:16:55.169 --> 0:17:27.49
Speaker 3
Then, that's regarding operations: If you are flexible at operations, then you are obviously also flexible in your finances, at least in your costs. Maybe not in the revenue, but yeah, maybe even in the revenue because you can increase your production output and cuts demand even better. But more importantly with costs, where you can really cut costs when needed with this type of model, as long as the leasing contract is also on the same flexible terms. For example, if your company is affected or impacted widely by seasonality and other demand-affecting trends.

0:17:37.129 --> 0:17:40.849
Speaker 1
Cool. Yeah. Thanks for that. Makes perfect sense. In terms of supporting equipment as a service adaption and the attraction of EaaS consulting projects: With what kind of measures could EaaS-consultancies or consultancies in general, promote the equipment as a service adoption in the future?

0:18:3.459 --> 0:18:32.499
Speaker 3
Well, nice question. I would see these as I've told you before, being adapted to cases where you really want to tackle the CapEx and the OpEx side. So, what do you want to do? Do you want to create room? Do you want to create room in the OpEx? Then having this type of services in your machine park can help to reduce it. Do you want to create room in the CapEx? That's the same. Or are you affected by seasonality and now we're looking at master production plan and we're looking at S&OP management (sales and operations planning), which is a topic that's really hot and been tackled by many companies and a lot of consultancies are active into that area. So, this could be something that provides flexibility because it basically changes constraints into being more…so it gives more room to navigate around some either financial or capacity constraints that are regarded.

0:19:6.619 --> 0:19:6.939
Speaker 1
OK.

0:19:6.749 --> 0:19:17.29
Speaker 3
But again, I'd like…so that's how consultancies could sell this. But just one general remark here to everything that's been said so far. Let's not forget that the use case to use a laser machine is not easily seen and it needs to be really specified. You first need to build a business case around it. You need to put the money down and see how much it costs to get this service done by an external partner and how much would it cost to have the machine leased. How much would I need to have a separate - let's say worker - to set up the machine for me and then also an operator for it. So, you need setters, you need operators…it can really get complex. So yeah, I'm talking here, not generalizing everything about machinery equipment, but yes, there are some cases where this would work, like 3D printers as (name

anonymized) said in the beginning. And sorry for this paragraph. But yeah, just want to give you also my insights for everything that has been said so far.

0:20:18.429 --> 0:20:20.469
Speaker 1
No sure, highly appreciate it.

0:20:20.679 --> 0:20:28.359
Speaker 3
Yeah, but to summarize this. As I said, OpEx optimization, CapEx optimization and also S&OP and MRP (manufacturers' recommended price).

0:20:29.39 --> 0:20:41.679
Speaker 1
Perfect. And would you say that EaaS-projects are generally more attractive for consultancy companies in terms of their profit margin or following projects? Is there an indication?

0:20:42.229 --> 0:20:48.469
Speaker 3
No, I wouldn't. I wouldn't deem consultancies absolutely necessary in order to promote this type of service. I mean B2B is already fine for this. You don't need to do it B2B2B. You don't need consultancies to be the middleman in order to make this work. And I also think that consultancies would actually impair the whole situation because you create less room for profit. So, the business case would be even more difficult to be made out of, you know, outsourcing compared to insourcing production with a leasing model.

0:21:19.969 --> 0:21:22.49
Speaker 1
Ok, it makes perfect sense and we'll just.

0:21:20.589 --> 0:21:25.309
Speaker 3
So I think you need change in in the in the chain there. Less links story. You need less links in the whole team.

0:21:31.179 --> 0:21:37.299
Speaker 1
Interesting. Would you say there are more projects on customer side or the provider sides?

0:21:38.389 --> 0:21:40.29
Speaker 3
Provider of what exactly?

0:21:40.289 --> 0:21:49.89
Speaker 1
More projects in EaaS-adaptation or EaaS-projects. Are they more sought by providers or customers?

0:21:51.159 --> 0:21:56.999
Speaker 3

Yeah, sorry I need a little bit more context on what you mean with providers and customers. So, providers of what?

0:21:55.959 --> 0:22:7.159
Speaker 1
Oh yeah. Providers are like the producer of the machinery equipment and customers would be the company that then, for example, takes the 3D printer in a subscription model.

0:22:8.229 --> 0:22:33.429
Speaker 3
And so where do we see EaaS consulting around this topic, right? I'll definitely say to people using it, because all the topics that I've named before are actually use cases for this type of concept and I'm not sure about how I would market it. But again, that's my perspective, but I've already imagined how it could be used by users as you framed them here.

0:22:37.879 --> 0:22:43.479
Speaker 1
Ok, super interesting. And when it comes to the implementation of EaaS-models: Can you just give us a little road map how EaaS-models are typically implemented, by any chance, if you followed something like this?

0:22:56.159 --> 0:23:3.439
Speaker 3
Yeah, I wouldn't say that. What I've seen isn’t exactly an EaaS implementation, but I've seen something similar. Yeah, I would see a use case where you have a whole process, you have a production process or it can be let's say packaging, but I would call it production end to end - so goods incoming until goods outward. So, I would see this being developed for a parallel process or in a process step where you have some capacity issues, and you need to increase capacity. I wouldn't see this as a separate, a completely separate process where you need to set up everything from the beginning. So, if you imagine the subfloor, let's say, let's take a cell, a cell driven subfloor and you have a cell with five CNC machines, I could see leasing as sort of machinery leasing being there to add a couple of machines more and increase the total cell capacity. I wouldn't imagine setting up a full production line out of leasing machines because although this gives you even more flexibility to your production capacity, this would take time as a process to be integrated and to be set up. And I don't see, maybe for long term contracts, but again for long term contracts you wouldn't go with a leasing option, you would go with a complete ownership of a production line option, right?

0:24:24.799 --> 0:24:33.639
Speaker 1
Yeah, makes perfect sense. What kind of typical hurdles in an implementation process could occur?

0:24:34.759 --> 0:24:42.159
Speaker 3
Yeah, you need know how, as I told you. So, you need to find to find people who can set up and who can operate the machine and then legacy would be an issue for me. So, you have some production processes that are set up to work with a specific type of software. When it comes to machine planning, and you need to find specific machines that are also suitable to

operate under the software. Sometimes machines are very old, or software is very old. So, you need to take into consideration the given infrastructure and sell a similar solution. And I'm thinking about CNC machinery here as I speak, or even your production planning product program needs to be in alignment with this type of machines if we're talking about automated machines, right? Yeah, so I I'd say legacy and existing equipment. So, equipment already in place needs to be suitable to work with what's been offered as a leasing.

0:25:39.779 --> 0:25:48.459
Speaker 1
Cool. Yeah, very interesting. To what extent does the degree of digitalization within the machinery manufacturer does impact the success of an implementation process?

0:26:0.589 --> 0:26:2.669
Speaker 3
That's a good question. Increasing efficiency, so making the integration process smoother by, let's say, coordinating the data flow. If we're talking again for automated machinery, but I assume we're not talking like super traditional stuff like putting a separate machine in place when you're talking digitalization. We are looking at automated solutions. Is this the case? Because if we're talking like an old milling machine, being put in a in a in a cell that wouldn't affect so digitalization is not relevant there, so I understand this is more relevant for factories that have already embraced, industry of IoT and 4.0 industry and all this type of concepts. So yeah, there digitalization. But as I told you, the software solution, so either if it's a cloud solution it needs to be suitable to work and be integrated within the machinery offered. If this is the case, then yeah, it's nice. You're just adding in your cloud more capacity and you have more operating means to execute this, but you're seeing your digital model.

0:27:16.329 --> 0:27:18.89
Speaker 1
OK, very interesting.

0:27:19.669 --> 0:27:25.829
Speaker 1
Do you think that the degree of servitization within the equipment manufacturer is relevant?

0:27:27.119 --> 0:28:0.279
Speaker 3
Yeah, absolutely. This is exactly what I've been discussing so far, and standardization is absolutely relevant. But again, you need to be to offer them the same type of machinery, so this is both advantage and disadvantage. If they are fully standardized then if you have their type of machine, you are good and you are really, really attractive as a service provider to them. If they are standardized and you don't have a suitable machine for them, then it's not going to work, it's not going to be attractive for them at all.

0:28:0.949 --> 0:28:3.69
Speaker 1
Mm hmm. Oh, would you say that there an MVP approach is important for the implementation process?

0:28:11.409 --> 0:28:13.569
Speaker 3
Is this minimum value product or?

0:28:12.859 --> 0:28:15.539
Speaker 1
Sure, exactly. To have a minimum viable product.

0:28:19.509 --> 0:28:22.589
Speaker 3
I'd say definitely yes. With 3D printing, yes. So, if you don't have a 3D printer you want to build a quick model at the beginning to build your business case, get a feeling for the market, that would be a case. So, if I was taking this to the market, that's the 1st place I would be looking at and my target group.

0:28:42.59 --> 0:28:55.739
Speaker 1
OK, interesting. And as you mentioned, I mean the covered impact is now clear. Would you say that the product life cycle to have a look as a manufacturer of the whole product life cycle of the product is important?

0:28:58.779 --> 0:28:59.779
Speaker 3
I think that's…

0:28:58.579 --> 0:29:1.419
Speaker 1
…like after-refurbishment, recycling.

0:29:1.769 --> 0:29:27.489
Speaker 3
Yeah, I think that the product life cycle is getting smaller with a lot of products, but I don't think that the COVID-pandemic or the Ukraine crisis have played a significant role into this. I think that this is happening over time, and these are just some events that happened post 2020. So, if this event has happened in 2008, we would still see the same effect that we are seeing nowadays, so I don't think that the product life cycles are so much affected by this type of crisis.

If you ask me, then about some other factors like sustainability and global warming, then I could see an impact and I would see a negative trend which would be to extend the product life cycles and refurbish more. But yeah, again that's a different topic that's not Corona-pandemic or Ukraine crisis.

0:30:2.889 --> 0:30:22.329
Speaker 1
Yeah, I know for sure the life cycle was also uh, without the corona, pandemic. In general. I was then just, curious in terms of are there any KPIs assist target systems or incentives, how to measure success with the project? Is there anything that comes to mind?

0:30:41.69 --> 0:30:41.229
Speaker 1
Yes.

0:30:47.549 --> 0:30:47.669
Speaker 1
Hmm.

0:30:23.629 --> 0:30:57.389
Speaker 3
Ultimate KPI when we're talking business is always money. Do you make a profit out of implementing this model or are they is the cost avoidance or the revenue you're managing by implementing this more than what you pay to the leasing provider? That's always the ultimate KPI. Is there a business case behind it or not? So, to say that would be one. And then if you're looking into operations as I've told you: Flexibility, the potential to increase or decrease or having a plus/minus of 20% on your manufacturing capacity is also useful. But again, this capacity needs to be translated into revenue to justify the cost of paying for it, right? So again, for me, all these operational KPIs will translate in the end to the business case itself.

0:31:14.739 --> 0:31:21.139
Speaker 1
Perfect. Makes sense. Ok. As the matter of time, I want to briefly ask my colleagues if there are any remaining questions.

0:31:22.429 --> 0:31:25.349
Speaker 3
Yeah, don't worry. If you need 5 minutes more, I'm happy to discuss.

0:31:25.69 --> 0:31:28.109
Speaker 1
Awesome, awesome. Appreciate it. Ok, Julian, Jonas?

0:31:33.839 --> 0:31:45.719
Speaker 4
I would just like to end up on the question regarding the aftermarket business. Do you think that current machinery manufacturers are seeing the whole product life cycle of a machine after a sale sufficiently?

0:32:3.229 --> 0:32:3.909
Speaker 4
Exactly.

0:31:56.519 --> 0:32:4.559
Speaker 3
OK, so you want me to answer from the perspective of a company that manufacturers machines, right? So, ok.

0:32:7.969 --> 0:32:40.769
Speaker 3
I don't have an answer for this. I know that for sure the company's buying the machinery equipment consider the life cycle management of the machinery itself at the beginning,

especially when it comes to accounting and writing the machine off, and then you need to consider “ok, now it's net profit”. Then you also have some, I think regulatory obligations to recycle the machinery. I'm not sure how does this apply to the actual manufacturer of the machinery. Sorry, I don't have an answer on this.

0:32:40.829 --> 0:32:41.709
Speaker 4
No worries, no worries.

0:32:41.609 --> 0:32:47.809
Speaker 3
Especially take into consideration that some machinery pieces can be on the shop floor for more than 50 years. So, I'm not sure if there's still…If you walk in an old German factory, you will find a lot of machines from companies that don't exist nowadays. So, I don't really see the connection there. Yeah, that's my view on this. So, we're discussing assets with really long-life cycles. So that's the factor from my perspective, that doesn't make it so much relevant for the manufacturer, but much more relevant for the buyer of the machinery.

0:33:27.349 --> 0:33:33.509
Speaker 3
I hope that covers it and sorry that I don't have a, let's say indirect direct answer to what exactly you asked.

0:33:34.379 --> 0:33:39.219
Speaker 4
Can you say something about the maturity level of the machinery manufacturers with regard to integrating services into this product life cycle?

0:33:48.669 --> 0:33:52.109
Speaker 3
The product, like the product life cycle of what exactly?

0:33:52.249 --> 0:33:55.729
Speaker 4
Of the machine that they sell to their customers.

0:33:56.329 --> 0:34:0.89
Speaker 3
Ok. And which type of services: Integration or which type of services?

0:34:0.389 --> 0:34:5.829
Speaker 4
Like after sales services mainly, for example predictive maintenance, monitoring.

0:34:8.109 --> 0:34:25.589
Speaker 3
Yeah, now I get the question. Yeah, it's a good one. I really think it comes down to the business model and how you actually sell the machinery. So, I could see in automation businesses where products are way more complex, so let's take an example and let's take about robotic arms, which is a hot product, I would say in the automobile market. And it's not easy. It needs really special maintenance compared to an old machine that you could open by

yourself and fix it. So, I would say that from that perspective, yes. The automated machinery gets more and more specific, and you need really specialized, not only machinery parts anymore, but also software. So, from that perspective, yes, I would say that after sales, but also service support, software support, even consulting and training on how to use the machinery is actually becoming super relevant compared to 20 or 30 years before.

0:35:23.489 --> 0:35:32.929
Speaker 4
And then maybe just my last question: Do you think that the current machinery industry now again from the provider, from the seller perspective are sufficiently equipped when it comes to services regarding their human resources capabilities?

0:35:44.69 --> 0:35:57.829
Speaker 3
I think that's a very, very broad question to answer. Can you narrow it down a little bit, maybe specify some sort of industry or do you have something in in mind or are you asking just super general?

0:35:58.219 --> 0:36:12.219
Speaker 4
Yeah, maybe in the industries where you say… that like, the industries you just mentioned, which are like predetermined for integrating services in the product life cycle.

0:36:12.279 --> 0:36:14.239
Speaker 3
Yeah, I will tell you for sure that workforce is always an issue in this type of professions because you need software engineers to produce automation machinery nowadays. But these people have an opportunity cost to work in this type of industry because they can work for software companies directly and earn more money because the profit margin there is much, much bigger than being in the machinery industry. To be honest, I'm a mechanical engineer myself and this is the reason I had changed my area. So yeah, the profit margins in manufacturing are getting narrower and narrower. And when you look at software it's much bigger. So, if you are a machinery manufacturer and you need software providers or software engineers to automate and cover, let’s say some service areas of the product, it's difficult to find these people. Maybe you even need to go to third party providers to get some of these services.

On the other hand, there's one industry that came in mind. So, are you aware with semiconductor manufacturing where the production process consists of, I'd say 60 to 80 steps? The machines there are super, super complex. There are actually not many manufacturers around them. Most of them are in the Netherlands. I'm not talking about semiconductors, I'm talking about companies that manufacture automated machines to make semiconductors, right? I'm talking about ASML. I'm not talking about NXP or semiconductor manufacturing companies themselves. And there the profit margins are much higher when compared to the automobile and aviation manufacturing industries. So yeah, from that perspective that's a category with an asterisk because it's actually the basis for software in IT. So again, this is the real reason that this is happening, but yeah, that's what I would say is the most promising machinery manufacturing sector, from my perspective.

0:38:46.929 --> 0:38:48.409
Speaker 4
OK, cool. Thank you.

0:38:57.739 --> 0:38:58.619
Speaker 1
Awesome Yep.

0:38:56.629 --> 0:39:2.909
Speaker 3
OK, cool. So, guys, best of luck with your thesis.

0:39:3.879 --> 0:39:4.279
Speaker 4
Thank you.

0:39:3.599 --> 0:39:4.319
Speaker 1
Thank Chandra.

0:39:10.819 --> 0:39:11.299
Speaker 4
But to get.

0:39:4.709 --> 0:39:12.549
Speaker 3
It's an interesting topic in any case, really radical and new idea. I mean, yeah, can be applied in some cases.

0:39:13.789 --> 0:39:20.109
Speaker 3
But again, try to specify and try to identify some cases. Don't make it too general because as I've told you. I would see automation and some more profitable industries. The most promising field for something like this, so you need to completely maybe not scrap, but I wouldn't really see use cases with all the traditional manufacturing areas like milling or other type of machines like drilling. We're not talking this type of machines, right? And then if you're talking about robotic arms, yeah, maybe. But again, you are looking at production lines, which are difficult to be implemented from a service provider. So again, you need to be looking at cases where they need flexibility. There's demand seasonality. And there's also the right type of standardization on the factory or were something like this could be applied. And again, look at industries or manufacturing industries with big margins so. Look for someone from Infineon. Ask them who is providing your machines and have an interview with them. If that's possible, go out into LinkedIn and ask these people.

0:40:34.599 --> 0:40:35.959
Speaker 1
Yeah. Thanks. Thanks. But.

0:40:34.309 --> 0:40:38.949
Speaker 3
Just to state to state this because this is being recorded, I'm just.

0:40:45.9 --> 0:40:45.289
Speaker 4
Yeah.

0:40:40.589 --> 0:40:50.549
Speaker 3
The names of the of the companies I give you are just my personal opinions and ideas. It's not related with converter, I just know these companies because I live in Munich, right?

0:40:51.389 --> 0:40:52.69
Speaker 4
Yeah, I'm sure.

0:40:51.49 --> 0:40:52.289
Speaker 1
Sure, of course, no.

0:40:52.109 --> 0:40:53.509
Speaker 3
Just to make it obvious, OK.

0:40:53.359 --> 0:40:55.239
Speaker 4
Sure, no worries, I'll do that.

0:40:54.179 --> 0:40:55.339
Speaker 1
But I'd appreciate it.

0:40:56.89 --> 0:40:56.849
Speaker 3
OK, cool.

0:40:57.749 --> 0:40:58.829
Speaker 4
Yeah. Thanks for the.

0:40:57.869 --> 0:41:2.189
Speaker 3
So best of luck guys. I wish you all the best. Bye.

0:41:1.959 --> 0:41:4.559
Speaker 1
Thank you. Thanks. Appreciate it. Bye bye.

0:41:2.769 --> 0:41:5.769
Speaker 4
Thank you very much.

Interview Transcript Participant 17

Speaker 1 00:28
I've been with (company anonymized) for a long time and helped set up the Subscription Model in early/mid-2017.

Speaker 2 00:44 To
What extent are machine manufacturers in Germany and also the customers of machine manufacturers familiar with the concept of Equipment as a Service or subscription models in general.

Speaker 1 01:15
So in general I can't say that I can say it for our industry and there the companies are not very familiar.

Speaker 2 01:29
Yeah, super exciting. What could be the reason that they are really not familiar with it?

Speaker 1 01:38
Maybe I need to step back for a second.
You are familiar with this. Well, if I look at the printing industry now, that's where it exists in digital printing. But they are not familiar with it in conventional printing.

Speaker 1 01:55
Which is actually funny, but that's the way it is. And there are a lot of unanswered questions there. Why is that? Probably because nobody has dealt with it yet. And yes, you probably also think, so the thinking today at print shops is, I buy a machine, I have a value there.

Speaker 1 02:21
And if I sell the machine, then that just goes back into my own pocket. Which I don't have with the subscriber, of course. The younger, next generation, they are more open towards subscription models because they are used to it, but the old generation is not really like that and more skeptical.

Speaker 2 02:39
Yeah, against that. Okay, super exciting. So
from your side or from your point of view, what are the typical providers for subscription models or equipment as a service, if there are any, and maybe you can identify some recurring common characteristics of these providers?

Speaker 1 03:01
Suppliers or as you call them providers, these are all the ones that you probably know in the circle as well that work with the St. Gallen's or the Aachen's of this world
These are also just the ones that I know there, so the famous ones, so the John Deers, the Hilti's, etc.

Speaker 1 03:27
Whereby the offers are just very different, so just when I now look at what is at John Deere or at Hilti also or at, what is the name again – I always forget, it is an engine manufacturer for

ships. In contrast to us, I always see it like this, they are typically selling mainly parts and not the entire equipment. We just take the whole package with a, yes, with a performance promise.

Speaker 2 04:03
How high or low, would you then specifically identify the need for Equipment as a Service or Subscription solution once on the vendor side and then on the customer side.

Speaker 3 04:24
If I might jump in here: I am happy to ask the same question to customers. So, who are the typical current customers of EaaS offered from their point of view?

Speaker 1 04:35
So I can only relate this to our industry or to our point of view. The current customer is one, is already different from different motivations, but generally it is the customers who really manufacture industrially.

Speaker 1 05:02
Whereas in the printing trade, relatively much is still manual in the sense and less industrial. But these are also our target customers, the customers who really need a high output.

Speaker 1 05:15
And there we can also support only with such it also makes sense in the end.

Speaker 3 05:20
Do you have any specific examples that you can give?

Speaker 1 05:31
Um... Yes, I did. Where are they aiming at?

Speaker 3 05:38
To be able to make it more tangible, for example, businesses from area X, because they said industrial manufacturing, that maybe you can do that a little bit, so these are kind of printers, these are smaller businesses.

Speaker 1 05:53
So very briefly, I don't know how they know about printing. Printing companies are generally not giant companies. There are a few worldwide printers that are the well-known ones, like Westrock for example, that's probably one of the most well-known printers worldwide.

Speaker 1 06:12
These are packaging printers, they are industrialized. They have also, so they also take care that this is worked effectively, and they also pick out new models. The average print shop has under 100 employees.

Speaker 1 06:34
There are also printers there, for whom this is interesting, but there rather less so.
If we now say we are looking at subscription customers, then as a rule, with the exception of Japan, the aim is to generate a high output.

Speaker 1 06:52
We said in the initial models, we focus on performance customers who want to have high output, who are growing, which is not too common in print, although by now there are a lot of consolidations and ideally competitive accounts.

Speaker 1 07:15
In Japan, we are doing very well with the competitive accounts. But there is not the High Volume, which is generally not the case in Japan. Rest of the world it's more of a colourful bouquet with printers coming out of the box and mostly industrializing it.

Speaker 3 07:57
What are recurring common characteristics or requirements from these customers?

Speaker 1 08:10
There are different reasons why a customer would want to do this. With the industrialized ones, it's really the output promise. What does it look like for print shops today? In theory, the customer can buy everything individually.

Speaker 1 08:27
He doesn't have to buy as a subscription. The big difference is that everything service costs are already covered. And also, this performance promise is a big thing for many customers. Meaning in many printing companies it's like that.

The printers have a certain performance. And that was it. And now, based on the data that we have, we can say that it should be faster or that there is potential for improvement. And then we have a consulting team that we send in there and they solve the problem.

Speaker 1 09:02
In theory, the customer can also buy them individually. However, experience shows that there are many discussions about price etc. Everything is included in the subscription. So, from there, if we now guarantee that we will print X million prints with you in the year, then we will also manage to do that.

Speaker 1 09:23
And that is so the main reason.

Speaker 2 09:31
Then back to the question of demand. How high or low would you estimate the general demand on the supplier side in the industry and then also on the customer side?

Speaker 1 09:46
All right, on the customer side. The mass of our customers doesn’t ask for it. Now you might ask, why is it like that?

Speaker 1 10:07
Would we have to do more advertising, etc.? It is certainly a reason. On the other hand, we can't serve the whole world with subs. It doesn't fit every customer. To be quite frank, in my opinion we could sell a few more contracts when it comes to subscription-based contracts.

Speaker 1 10:31
That is also clear. But it doesn't fit every customer. Then it just becomes too expensive. If I have a customer who maybe only does single-shift printing, who maybe is in the niche, who also doesn't need the performance, that's not the perfect fit.

Speaker 1 10:49
Sure, we could put together an offer there, too. But yes, it won't be worth it for him. So, if the question is, if there is an active demand, in the mass market of printers now, I can say it is not there.

Speaker 1 11:11
From our side, we could certainly sell a few more contracts where we are on it as well.

Speaker 2 11:19
I mean, you are of course in a very specific industry, but could you also in general, if we stay in the German machinery industry, identify certain industries that might be predestined for an adaptation of Equipment as a Service?

Speaker 1 11:44
Well, there are the good examples, which had a few problems during the Corona crisis, but generally good. That's with Rolls Royce and the engines. Similarly with the air pressure.

Speaker 1 12:02
The question is always; do I need it, or do I not need it? And there are probably different applications there, just like in the printing industry now, where I say this makes sense or this doesn't make sense.

Speaker 1 12:21
It makes sense for us because we build machines that can deliver the high performance. But what we see in the market, is that the clients of our machines are not able or simply not using these high-performance capabilities to the max. So, to take the example from Formula 1.

Speaker 1 12:35
I could probably also drive in Formula 1 cars after a week of training, would I finish first, probably not. It's the same with printing presses. They get a press that runs 18 or 21 thousand and they print on 12 because they just don't know how to fine tune the performance properly.

Speaker 1 12:55
And there, so such a machine cost in the end something between two and a half and five million euros. And then you save a week of training, and we just take that out completely and say, okay, if you need training, then you get that.

Speaker 1 13:12
If you need advice because your processes are not right, you will get it.
We don't discuss the price anymore. Here the price is per sheet, and we guarantee that. And so, we have taken out all these discussions and we also see that it makes a difference like night and day and for customers who really want the performance, it makes sense.

Speaker 1 13:34
For customers who don't need the performance. Sure, I can find other arguments why I could

sell it. But does it have to be Equipment as a Service? Probably not.

Speaker 2 13:50
Okay, super exciting. Now, if we break down specifically to one level and look at machines, could you say whether there are certain machines or equipment in mechanical engineering that are particularly or best suited for EaaS.

Speaker 2 14:05
So you can go into features like just standardization, number of moving parts, customization of the machine, things like that.

Speaker 1 14:16
Okay, number of moving parts I don't know for us, are many. We already have over 1000 sensors in it. Every press can be customized. If you look at it from 30,000 meters, it's the same, but if you look a little deeper, each one is different. It also depends on the environment, it depends on what the customer is printing, i.e. different consumers.

Speaker 1 14:52
And on the machine itself, of course we have preferred machines where we would like to do that with, but again exceptions prove the rule, what every machine has to have and what is a requirement of ours.

Speaker 1 15:13
It has to be connected remotely so that we can pull data from the machine so that we can do some kind of consulting based on the data. There are monthly calls that are also based on this data.

Speaker 1 15:28
We use predictive service with this machine data, so all this digital infrastructure has to be in place so that we have a relatively good grip on the machine. Also, the consumer wants the offer with these predictive services in his contract. The progress of digitalization especially in the last couple of years certainly played a significant role for this demand.

Speaker 1 15:44
The customer has a management tool from us, where he then also has to record his consumption via mobile devices, which is still the case today. This will also increasingly go to the machine, so that the machine automatically recognizes what it needs.

Speaker 1 16:01
So these are already requirements that make it easier for the customer and take out work steps, in other words, make it cheaper in that sense.

Speaker 2 16:14
Yes, great, thank you. Then I really want to talk about the challenges and concerns, and I'd like to look at the provider side first and then the customer side. What are the macro drivers like market competition, technological megatrends, regulatory environment, or demographic trends that are currently hindering the adaptation of these subscription models a bit, if they exist?

Speaker 1 16:44
So let's take a step back. The problem has been solved for us, but we financed the first machines ourselves. In the meantime, we are working together with Munich Re because we can't finance all the machines ourselves.

Speaker 1 16:57
That was a step, that's why there was such a small dip in sales. We had announced the partnership with Munich Re, because there were just various hurdles and offices that you have to go through, which sometimes takes longer than you think.

Speaker 1 17:15
And that's why there was a bit calmer behaviour there. Otherwise, I think what is influenced negatively on both sides customer and also provider is just the understanding that you don't have a clear understanding.

Speaker 1 17:37
So even our vendors sometimes have a hard time understanding and eventually selling a subscript model. And I happen to know that about all the other vendors as well. It's the same problem everywhere.

Speaker 1 17:50
Because in the past you went and sold a great machine. You could explain all that. Now you have to know a thousand other things and explain even more. You also have to explain financially where the advantage or disadvantage is for the customer.

Speaker 1 18:06
So you need a much broader knowledge and that makes it hard. It's the same on the customer side. The customer, so that always happened with us, the customer thinks by subscribing, he can now afford a machine that he couldn't afford before.

Speaker 1 18:22
Absolute bullshit. Somewhere this has to be paid for. Because the next thing is customers from our side know their costs, what they pay for the machines, like every month. They know that very well.

Speaker 1 18:38
And then they also know the costs, what a printing plate costs or what the ink costs, the larger consumable items. If we now come along and say that's the price for subscription, that's what it pays for a print, then the first surprise is always that that's extremely expensive.

Speaker 1 18:56
And then we do the roll backwards again and say, okay, there's this in there, this in there, this in there. And basically, train the customer to know their costs. That doesn't happen with the larger, realized customers.

Speaker 1 19:13
But with the smaller ones, who are actually more concerned with printing, they've just never looked at their print shop in this way and that's a longer process. Exactly. Great. On the trends.

Speaker 1 19:34
The only thing that had a negative impact, where negative is not quite right either was Corona. So that went, it was negative on one side, positive for us on the other side. The commercial, so the commercial printers, meaning flyers and so forth.

Speaker 1 19:57
Business went down for him. Packaging printers saw a steep upward trend. But that's actually how we saw that we had selected the right customers for Subscription.

Speaker 1 20:11
The mass of customers has come through Corona well. So, they were very well positioned. We had one or two customers. That was more difficult. Then we found a solution with the customers, so to speak, that we came through Corona.

Speaker 1 20:26
But that went then. But that was one where we saw, well, that can have an impact.

Speaker 3 20:33
Yes.

Speaker 1 20:34
But otherwise now negative trends actually rather none.

Speaker 2 20:38
Cool. Yes, you still just actually already said what the Corona -Pandemic -effects had. Has the Ukraine war had any more flush effects? Negative ones?

Speaker 1 20:55
I know from one or two customers; they said it has an impact. In the
end, the impact that we always get is that the number of printers go down, which is actually not a problem in the subscription contracts.

Speaker 1 21:08
As we do a review every year and adjust the contract to the circumstances. Yes, it popped up, but wouldn't have seen it as a big problem now.

Speaker 2 21:21
Okay, are there any other specific drivers that have come up at the corporate level, such as marketing financially, also on the customer and supplier side operationally strategically, that really come into play and hinder something like that.

Speaker 1 21:40
Ne.

Speaker 2 21:41
Yes, completely fair, then I want to turn this around now and I think approach what a bit is more exciting, namely the drivers for acceptance. What would you say are once then the macro drivers that promote the model, that on the provider side and then also like to show on the customer side why the model can work.

Speaker 1 22:07
So, how was it for us on the vendor side? There's no competitor right now that's offering the same thing. Other than digital printing, what can you see as competition, you don't have to see. So, we also have a digital division where I would say there would be competition on a comparable machine basis.

Speaker 1 22:30
There's no other provider right now that's offering that. Trend was, I think, okay, everything goes to As a Service. And there we also had, our board at that time pushed that through very well.

Speaker 1 22:44
So if that hadn't been the case, it probably wouldn't have gotten that far that quickly. So that was, I think, one of the biggest takeaways. On the customer side, the first customers said, yes, let's try that.

Speaker 1 23:04
They liked the concept but didn't really know whether it was profitable or not. And the results were actually very good, which we also achieved with the customers.

Speaker 1 23:19
From there also a great satisfaction. The contracts with us run for five years. We now have the first customers who have renewed. I don't know of anyone now who has not renewed. From therefore, that shows then actually, that's good for surprise.

Speaker 1 23:37
After, I think, after three or after four years, we had started a survey, what the customers then already like themselves. The exciting thing was that it wasn't the machine, it wasn't the performance.
That was the monthly meeting, which is a compulsory event, where you look at all levels from the printer to the management on a monthly basis, how does the performance look, how are the consumptions, how does the provider deliver the service, how are the consumables, how are the processes with the customer - everything is examined once and at all levels. And that was kind of the main thing where everybody said, this is top.

Speaker 2 24:20
Super, yes super exciting, is actually super interesting. We would go into that direction towards the end of the questioning as well. To keep the structure, I would then go on once before.

Speaker 2 24:31
At the sublevel, drivers that drive the adoption of equipment as a service, marketing, financial drivers, operational, strategic, or even an organizational driver. So, what are their main drivers on the provider side and on the customer side?

Speaker 1 24:52
So we have, well with us it was as I said, the board drove it. We had a small department of our own that implemented it, that also, as it were, took over sales worldwide first of all, bypassing the normal processes in the company.

Speaker 1 25:14
Always in the context of the service units. But usually it goes like this, the branch is trained and maybe gets support. The first contracts there was always someone from Germany.

Speaker 1 25:29
Now that works well differently. Then there was marketing, of course, normal to that. With us, I think the big driver was the board and the team that built it.

Speaker 2 25:41
We have actually also always heard from interviews with other market parts that the financial, the financial level is also a strong driver. So, one on the customer side that you then simply have less capes invest.

Speaker 2 25:54
On the vendor side, that you have recurring revenues, was that also of interest or in...
Speaker 1 25:59
Yes, certainly it was.

Speaker 1 26:00
Okay, so that was one reason, the company is valued higher with Recurrent Revenue. That was and still is a driver. On the other hand, it is also with some that you don't have capex, but not with everybody.

Speaker 1 26:18
So I wouldn't pick that out as a main feature now. Of course, we have that in our advertising materials and presentations. But if it's well advertised, I don't think it's the main focus for our customers.

Speaker 2 26:33
And for themselves, exactly, they said, of course marketing, positional feature alone, is there anything else on a strategic or operational level where they realized, okay, this could give us a boost, for the reason we're doing this?

Speaker 1 26:48
What was the main reason in our case why we wanted this? A. The valuation is better, of course. B. The printing market is not a growing market. Especially the printing press business. The presses are always growing, so the print production volume, as we call it, that is the printed products worldwide, is more or less stable.

Speaker 1 27:11
That goes down for a year or two, then it goes up slightly somewhere. But there's never a sharp up or down. But as the machines become more powerful, you need fewer machines.

Speaker 1 27:27
The service goes hand in hand with that. So, you can't necessarily talk about growth. With us it was still so, we are also Consumables sales. We are the largest distributor worldwide, but we only had a market share of 5% at that time.

Speaker 1 27:47
So there are very, very many small ones.

And the goal with Subscription was to grow more in this market. And because we also have five-year contracts, the consumables business is very, very vulnerable in the printing sector.

Speaker 1 28:06
So that can happen that you only have half-year contracts or the customer buys today from us, tomorrow from the other. Subscription keeps it fixed for five years. And that's a good way to increase the consumables business.

Speaker 1 28:22
That was one point of it. The second variant, the whole joke, it's called Equipment as a Service, for us it's the variant without equipment. Or the customer either buys the equipment or already has the equipment and we provide the rest of the services.

Speaker 1 28:41
Very simple case, the customer buys a new machine, which is under subscription. It makes no sense not to run his existing machine not also under subscription, because he would have to buy consumables for it.

Speaker 1 28:54
And that's why we have these two variants, one with machine sales, one without machine sales. And there are also certain companies that say, we want to buy the machines on purpose, they should be on our books.

Speaker 1 29:07
But would like to have all the rest of the services. Well, there are also companies that only want the services, because the consumables do not buy. That doesn't exist like that. Consumables must be included, also under the background, because we wanted to grow there.

Speaker 2 29:23
Super exciting. Would you say then that the Corona pandemic or the Ukraine war in influenced those drivers or those motivations, for example, financially or liquidity constraints.

Speaker 1 29:47
Corona was certainly something good. Corona was also restrained. That was also seen in our general machine sales. It went down but came back after the end of the Corona crisis because customers didn't buy anything for a long time.

Speaker 1 30:04
Now did that have any particular impact on the subscription? From my point of view, no.

Speaker 2 30:10
Okay, exciting. No, I can just for the background, I've heard time and time again or we've heard time and time again because there was just so covid -pandemic, then of course there were supply chain -shortages, then there were liquidity -shortages because there was just less money in the bank and then people have been very more inclined to set up a subscription -model as well because you just don't have that initial investment.

Speaker 2 30:30
Of course, in the long run, the price is not a big difference, but these are thoughts that we have

heard more often.

Speaker 1 30:40
So the two things, one is supplying bottlenecks, the advantage is that just where there were the bottlenecks, we manufacture these things ourselves. Yes. So, there we had no, I don't want to say no problems, but not like some other companies.

Speaker 1 30:59
During the crisis, the subscription customers were actually better off than the rest of our customers. So, there were supply bottlenecks for materials, but our subscription customers were given preferential treatment because we don't get any money if they don't print.

Speaker 1 31:22
Yes. And that was actually rather advantageous for the customers, but it caused us a bit of stress in some countries, but in the end, we got through it okay.

Speaker 2 31:35
Yeah, okay, cool. Super exciting. Then I would actually go into the implementation of Equipment as a Services service models. How do you then implement such equipment and services service models, I mean, then you like to go specifically with you, initially and what factors are there crucial for a successful implementation of such a model at the customer?

Speaker 1 32:00
But a broad question, how would the initial be implemented? So, with us it was, there was the idea. I think the idea had been around for a little bit longer. In the end, it was rammed through by the board.

Speaker 1 32:12
There was a separate department that didn't care. As there often is in other companies. And as I said, I don't think it was the set-up that was the difficult part. We just said, one premise was, we don't want to do anything else for the subscription.

Speaker 1 32:30
We just want to use the services that we have and pack it smart together. That was sometimes a little misunderstanding even within the company, but in the end, that's how we got it through. The biggest challenge was sales.

Speaker 1 32:46
And we were also very much involved from within the team. And I think that was also the recipe for a successful start. The factors for a successful implementation were that our board was strongly behind it.

Speaker 1 33:07
Had we not had that because not whether we would have accomplished that much, we handed over.

Speaker 2 33:16
Yeah, ne class. Specific heights, I mean, even just addressed probably then the sale or the lack of expertise to start and sale, right?

Speaker 1 33:27
the sale or partly the fear of the unknown, so especially on the service side, if you then discuss service costs over five years, then people quickly get creative and want to have another buffer here and another buffer there, with somewhere arrived at prices that you can no longer sell.

Speaker 1 33:50
So you have to discuss this security thinking with the people, these were not really hurdles. One hurdle that still existed was in the financial area, how do you map this topic according to IFRES 15, what do I think.

Speaker 1 34:12
Exactly, and then we always concluded contracts and then we were told, you can't do it like that, then you have to tell the customer differently, well, and then reality and wishful thinking just collide.

Speaker 1 34:28
So that's where the problems were and in sales.

Speaker 2 34:32
Then, if we still stay with the implementation, would you say that the degree of digitization of the company, so the mechanical engineering, or the service share plays a decisive role in the success, such a project.

Speaker 1 35:01
Well, that helped, of course. We have just since, since one we have the data since 2020, we pull there from the machines, have also done a lot with it. That is certainly a topic where we are also in a good position.

Speaker 1 35:21
The second thing is that we had the consulting already included and a consultant approach to get customers on the right performance. In the beginning, so the consultants were also with me at that time and were included in the subscription team.

Speaker 1 35:42
So and in parallel to that, we have also built a Customer Success Manager that really every subscription customer has, a Customer Success Manager that takes care of them with all their needs.

Speaker 1 36:01
And that was actually what we generated new for this. That didn't exist before.

Speaker 2 36:07
Okay, super exciting. So, you would say that was actually a driver of success as well, these Customer Success Managers.

Speaker 1 36:15
Yes, so the, no, it was the combination of everything. Now if we had had the Customers Access Managers and no digital stuff, then he wouldn't have been able to talk much either, then the conversations would have been quite boring as well.

Speaker 1 36:30
If we hadn't had the roasters, we probably wouldn't have achieved the performance. If we had our digital tools, we probably wouldn't have been able to do much either. So, the combination of everything and the problem with Customers Success Managers is, is still finding the right qualification.

Speaker 1 36:49
In the end, who were the right ones? The ideal Customer Success Manager was a printer or instructor at one time in his life, did consulting for ten years and was still on the road as a service technician for another ten years and then also sold consumables.

Speaker 1 37:08
So the ideal approach is a little hard to find, of course, because those with so much experience is retiring.

Speaker 2 37:19
How do you assess the role of MVP approaches in the implementation? So Minimum Viable Product is something you have also worked with?

Speaker 1 37:31
Yes, yes, and no, so we have defined a subscription once, how it should look like. And again, we didn't generate a new product in quotes. The products all existed; you can buy them all separately.

Speaker 1 37:46
That was just the combination of what do we deliver, what was new was the service promise or the performance promise at a fixed price. So that was actually the new, good. Now was that the MVP?

Speaker 1 38:03
Yeah, I don't know. If you want, you can say that.

Speaker 2 38:06
Okay, yes, fair. Then actually times, we have heard from interviews again that many suppliers now not necessarily see, but there are suppliers who think that equipment -as -a -service -model just not in complete product -life cycle through and make little thought also about the aftermarket, so refurbishment recycling, second market of the machine.

Speaker 2 38:26
How is that for you? Would you prop that up? And how do you deal with this product -life -cycle issue?

Speaker 1 38:34
Of course, we'll go along with that, because the machine still has a relatively good value after five years. It depends on the country. In Germany, they are sold for the first time after six to eight years, in America after twelve years.

Speaker 1 38:57
Therefore, for us it is remarketed, a very good point. We get there just still relatively much

money for the used machine. And the machine is well maintained, and we know it in detail.

Speaker 1 39:12
So that's all the machines that we sold, so the ones that are now out of the five years. There are two, actually three points in our contract, how such a contract continues after five years.

Speaker 1 39:29
One is, he keeps the machine and continues to print on the machine. The second is, he gets a new press and the third is, he gets out of the contract completely. As it turns out now, we've had some where we've sold it, but also where we've extended and then said, well, we'll extend for a year or two now.

Speaker 1 39:51
And then there is the new machine. So, there are all the variants and for us a very lucrative business even still for the after-market.

Speaker 2 40:01
Yes, super exciting. But that also means that the machines have to be standardized to a large extent so that they have a second market.

Speaker 1 40:13
Well, if I look at the outside of a printing press, it has some kind of printing units and paper goes in and paper comes out. Now there are different drying options.

Speaker 1 40:26
So there are special machines, we also build them, so it's hard to sell them. There are also bread and butter machines, which also have a bit of customizing but there are no problems to sell.

Speaker 2 40:46
That said, the greater the degree of standardization, the easier it is to set it up in a subscription model and then sell it on, is that fair to say.

Speaker 1 40:56
Setting up in the subscription model doesn't matter, continuing to sell yes. A typical press has something between 4 and 8 printing units plus a coating unit. Now if I have a specialty packager that needs 16 printing units, I'm probably not going to get rid of that press anytime soon.

Speaker 2 41:21
We have already briefly touched on this. How do you actually integrate service successes to improve project successes, if there is such a thing?

Speaker 1 41:35
Successes, how to express that? Service is service, it is needed, or it is not needed. There is the service of the improvement of the consultant, but that is also a normal business.

Speaker 1 41:55
That runs normally, what is done by the box sax manager, he just has to look on a monthly basis how this contract is performing and has to keep it under control. So, what do I know, if

too much service is being done, how can I improve there, if the customer is using more materials than what is contracted, how can I deal with that?

Speaker 1 42:21
So the Customer Success Manager also has to manage the contract at the end. And that's where he has his, quiet, the margin is an essential part of where he goes after and there are the targets.

Speaker 2 42:52
Then actually, you had also just said, you have joined forces with Munich Re to clarify the financing. We have actually also heard again and again from the market that there is just no real matching -platform or similar will actually providers of equipment as a service be brought together with financial institutions or just generally none that the financial industry is not such a huge focus, except for maybe such specialized players like Munich Re looks at the equipment as a service model.

Speaker 2 43:20
Do you have a case there or especially would you think that it makes sense to go more into this matching -process between providers and financial institutions?

Speaker 1 43:33
So I think there are already some providers that you can discuss this with.
We have discussed with some of them. Right, a matching platform. In the end, it's a little bit of math and terms and conditions that I have to agree on.

Speaker 1 43:51
And I need a partner who can get through the whole thing financially. If you look at things like that now, well. With us, it might still be possible with a few million, but with SMS, where they put up the whole factory.

Speaker 1 44:08
I mean, you need someone who can finance it.

Speaker 2 44:12
Yes, absolutely. So, what was your initial motivation or especially the reason why you merged or had to merge afterwards or with Munich Re?

Speaker 1 44:27
I wasn't involved with Munich Re, so all the negotiations, that was my colleague. Why did Munich Re become a partner? I don't know. We needed a partner because we can't finance all the machines ourselves.

Speaker 2 44:50
Yes, fair. Would you say then, you have just hinted a little bit, that a recurring revenue simply makes the valuation better? Have you heard from the equipment as a service environment that it could be interesting for private equity companies to introduce equipment of service models in order to generally increase the valuation of the companies in the portfolio?

Speaker 1 45:00
I did never come in touch with such a topic so I can’t really give a sound opinion on that

sorry.

Speaker 2 45:15
Yeah, great. Then last question actually just on the practical examples. I mean, you have a couple of successful customers, of course. I would be interested of course, if you can and if you're allowed to, if you can name a few customers that we can write to afterwards, that we could maybe go into exchange with, if we then of course super grateful if you can think of anything there that you could name.

Speaker 1 45:40
I could name customers now, of course, but that's, I'd have to ask them first.

Speaker 2 46:26
And then I would say we are through from our side as well. Yes, again, thank you very much for your time.

Speaker 1 47:28
Okay, same to you, ciao.

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Speaker 2 00:23
I am a trend and innovation manager. I have been working for a financial services provider since 2011 and have held this exact position with my employer since 2014. One of our tasks is to advise the Executive Board on trends, new developments in the financial services sector and thus also interfaces with the industry, and thus also on new constellations, such as pay-per-use or even equipment-as-a-service, and also to look at how we manage projects, what projects there are, etc., and how they can be implemented.

Speaker 1 01:39
So, to what extent are machine manufacturers and their customers familiar with this concept of pay-per-use or equipment-as-a-service?

Speaker 2 01:50
So I would say it's difficult to completely generalize. What I have noticed in the financial services sector. We always have partners from mechanical engineering and the like, with whom we work together to advance such topics. We don't just provide financial services; we always have a concrete connection to industrial goods. And what we noticed was simply the challenge of what EaaS actually is.
We have always divided it into two, I'll call them dimensions. One was the revenue model component, so to speak, i.e., pay-per-outcome, pay-per-use, or mixed calculation with fixed or variable components, etc. Give.
And on the other hand, the second dimension was the entire value chain, so to speak. So how does it get from logistics to the customer? What is the maintenance like? Can you take data out of possible cockpits? In other words, this whole, let's call it, strand with added values, as well as with the actual transfer of use of the goods. And we have already noticed in our company that it was a challenge to decouple this from the revenue model. So, we really said that it's not just about pay-per-use or pay-per-outcome, but it's actually about this connection of these two dimensions. So that you really have EaaS.

Speaker 2 03:20
Now I don't know if this is a phenomenon that exists purely in the financial services sector, so now just for financial services providers. I could also imagine that manufacturers have the challenge because often manufacturers have had to promote value-added services in the past. And that's why I can well imagine.... so, I think there's a picture. So, the machine manufacturers can picture something. The question is what? What we have probably noticed there in various nuances, and we'll get to that later, in practice: Some of the big ones now have a very good handle on it, so I'm thinking, for example, of Hilti, Kärcher or something like that. But now there is also a partner who sent us photos with the operating hours in our pilot project, because they simply couldn't get the data out of their machines or into any technical interface.

Speaker 1 04:34
Yes, exciting, we'll come back to that later. If we look at the typical customers of these machine builders, manufacturers, or the providers of EaaS, who do you see as the typical customers or providers of EaaS, one after the other?

Speaker 2 04:59
So provider I had just mentioned, that's usually the manufacturer from my point of view. Even as a financial service provider, you have little interest in becoming both, simply because of the chain around it. So, you can pick out an individual solution, like data, and then support it, but I'll put it this way: refurbishment, i.e. maintenance and the like, recycling, resale, sell-off - the manufacturer knows its goods much better.
That's why it's usually always him. I've mentioned this before, so both Hilti and Kärcher are more or less on the road. I also know from Trumpf that they also once - but in a different way - offered this in the context of an AI machine, so to speak. In other words, in order to place the new technology with the customer. Then I think we also had young companies, for example in the agricultural sector, Naio, which probably doesn't ring a bell. That's a manufacturer of small agricultural robots, and that's how they get their robots sold in the USA. So, it's often used as an entry point for new technologies.

Speaker 2 06:26
For me customers are, so to speak, the classic construction industry, tradesmen, etc. Then we have contractors, especially in the agricultural sector, if they have to purchase a device and/or, yes, (the device) perhaps only need once.
And in fact, we have now observed the development that hospitals are asking for it more and more. So that's sort of just the background.
Why exactly this now? Well, that was an observation on our part: EaaS is always seen as a bit difficult as a financial service provider, because you just really say: "Okay, risk is just tried to shift." So, we often have the issue that customers ask for it who really have liquidity issues. So, where it's either, I say, a craftsman's business, then maybe times such a Hilti can also already produce significant acquisition costs.
And then there's all the maintenance, etc., which should not be underestimated. Building cleaners are not the most creditworthy companies. Hospitals have liquidity bottlenecks anyway, even though they belong to the public sector. But these are actually the issues that we have observed. This is often driven by such companies.
Or from companies where things are going very well. But then they want it in a certain context: if they want to have something for overproduction or they want to cut energy costs somehow, especially because of Ukraine, there were just a few isolated inquiries.
And exactly, hospitals. Perhaps once again: Because of the complexity, it is often the case that with all the software, small equipment, and the challenges of even knowing where my ultrasound scanner is, in which examination room, etc., you now encounter inquiries.

Speaker 1 08:40
Interesting. And if we were to set up a quasi-set of characteristics now, so what would you say are recurring common characteristics or requirements from these customers or providers?

Speaker 2 08:56
So I would definitely say that one issue is liquidity shortage. So, they just can't afford to go into really concrete ownership of anything yet, that then still waiting.... And yes, that's I'll say a cant issue.

Speaker 2 09:13
Today it's also the topic of innovation cycles. People just say, okay, if I buy something now, I'll have another issue in three years. Because I actually have to buy something new again, because the thing is either worn out due to high wear and tear or simply outdated due to the state of the art. So that's another issue. But I would primarily say: Liquid and high acquisition

costs. Or just possibly the issue with complexity. But I don't think that's a general characteristic.

On the part of the machine manufacturers: In principle, they also have an interest in this. Asset-as-a-service means that the price constellation is no longer comparable. Because this all-in-one package allows you to post a total price tag, so to speak, or just a monthly amount, you can then be compared in a completely different constellation than before. So far it was then: Okay, manufacturer calls x1000 euro for plant Y on and then it went off simply that one compares offers. So that's one possibility, so to speak.
And theoretically, they could also stretch the yields if it goes beyond the contract terms, there are also possibilities. They know a lot about refurbishment. In other words, can I give my investment another general overhaul and then perhaps put it back on the secondary market or on a third market, etc.?

Speaker 1 11:04
Yes, exciting. Let's move on to the demand for EaaS solutions. How high or low would you estimate the demand for EaaS solutions from the respective perspectives?

Speaker 2 11:17
So from the customer's point of view, it's actually difficult. We actually tried to quantify that somehow. In terms of numbers, you can hardly get anything. We just noticed that in the current phase, you have to say that it's really more of a click and prestige issue. So especially on websites and the like, our click rates are enormous. So compared to other topics. But as the results of our pilot projects have shown, it was more than poor, to say the least.
There were really few customers who actually said, "Okay, I'd like to have this variable construct. However, this is not necessarily because the demand is not there, but either the dominant solution is not yet available on the market, or it may simply be that the customer still has so many reservations. That's why I think the need is already there.
The question is whether there is a market, so to speak. On the one hand, there are providers such as financial service providers in combination with manufacturers who want to serve this market with this solution, to put it that way. Because, of course, there is also a certain risk on the part of the manufacturers.
The need is also there for manufacturers. They actually have to reinvent themselves, because simply selling a machine is not a big risk, so it's simply not comparable. And we've already seen in the past that everyone has to continue developing services, so to speak, and that there is hardly ever just one machine. When I think of EaaS, for example, they now always do the entire ecosystem.

Speaker 1 13:31
Interesting. Let's move on to industries and then also specifically to machines. Which industries do you think are predestined for Equipment as a Service or Pay per Use adaptation?

Speaker 2 13:43
So I'll say this, construction industry definitely. That would make sense. It would also make sense in the agricultural sector, but I think you have to take into account a future component, because I would simply project from today's developments that we will simply say: Okay, at some point we will go in the direction - you also have topics like machine rings - where all the farmers are increasingly joining together to form a pool in order to use equipment.

Speaker 2 14:18
And analog will also, so to speak, go the masses at some point, when the whole robotization and miniaturization advances further. And exactly, the healthcare industry is definitely a topic and I think in individual niche segments in the industry you always have to look out were exactly.

Speaker 2 14:44
So far we have observed: Okay, in stationary mechanical engineering, I don't need anything with EaaS, because they are usually very specialized and the customer wants to have access and so
on.
And it has actually become apparent to us that it is actually more, I'll call it the small to medium-sized plants that are also mobile, where this topic comes into consideration. For example, this can also develop in the direction of forklifts - I believe Jungheinrich also has something in this direction.

Speaker 1 15:23
Exactly, that would be the next question as well. So, what types of machines, equipment are best from their point of view?

Speaker 2 15:33
So I would say small, medium, and mobile. That's how I would describe it very succinctly.

Speaker 1 15:41
Okay, so let's move on to challenges and concerns. Don't be alarmed, I've listed a couple of macro and business drivers here. I hope you can see those, otherwise I'll be happy to zoom in again.

Speaker 1 16:00
Super wonderful. We'd be interested in what primary barriers or concerns do you see on the vendor side or the customer side in using EaaS models if you're looking at this from the macro level now.

Speaker 2 16:20
We have on the supplier side those who don't like to take the risk completely. So, to speak, they don't want to provide the complete advance payment for machines. In other words, they definitely need partners, such as a financial services provider, on board. Of course, some companies have already set up their own captives, i.e., their own financial service providers, but that's a different story. But that is definitely an issue for some manufacturers. Then market development is also an issue. So, we've now had the Corona pandemic, we've now got the Ukraine war, so these have now impacted on the mechanical engineering sector, which is now itself affected by energy costs and the like. So, it's not just the customers who are potentially the buyers for the machines, but it even affects the supplier himself. This means that prices have also gone up again, which of course creates difficulties.

Speaker 2 17:38
Then there is also the customer perspective, that perhaps the customer segments for which this is relevant do not have creditworthiness. Or that the whole thing revolves around new technologies, but then these are more like sales vehicles for providers, so that would be more

of an opportunity.

Speaker 2 18:07
From the provider side, the regulatory environment: When it comes to the revenue model and the like, there is always a risk from BaFin, because you always become a financial service provider directly through payment management, which is why you either have to be a captive or a co. You therefore have to meet all the standards. Then I think it's called ZAG, which is also an amendment on the subject of payments. I think the issue was that if someone collects the money or a partner transfers it, then there is an additional regulatory hurdle.

Speaker 2 18:51
Then on the customer side: It would be more the issue, and we are characterized by that especially in Germany, the focus on ownership etc. And I think that is also a cultural issue in Germany.

Speaker 1 19:33 While we're on the subject, we can also continue on the supplier side at the corporate level. What factors do you see there that tend to have a negative influence on the whole thing?

Speaker 2 19:48
All right, I think I had mentioned the energy cost issue as well. So just the cost base has grown. So actually, capex to opex is always so nicely proclaimed as the trend, because that should actually invalidate exactly their liquidity issues.
But yes, because of the whole cost base, there is still a financial issue.
Then, of course, we also have inflation, which increases the costs again on top of everything else, and you just have to see who can finance it.
In terms of marketing, I think one issue in all of this is to take away the uncertainty for the customer. They are always playing for planning security, which is why we have now seen that the mixed calculation or the classic operate-lease contract, which is actually a mixed calculation indirectly with a usage commitment, is more likely to be requested.

Speaker 2 21:08
Operational drivers: In addition to energy costs, the issue of a shortage of skilled workers could also be relevant. But actually, less so. Maybe more on the supplier side, i.e. that you don't get the people in your own production. Yes, I think those would be the points, so that's all I can think of right now.

Speaker 1 21:44
On the cost of financing, do you mean then, you had talked about increased energy costs, inflation, do you mean interest?

Speaker 2 21:57
Yes, exactly. So, we have this constellation, so to speak, that all the acquisition costs are exploding. But at the same time, we have a shortage of goods, because the value chains are not yet where they used to be.
And well, the question is, how do they develop anyway with the current foreign policy? So, whether you look to China or Russia, there's a big question mark anyway. How reliable are the trading partners? Then there's the issue of Taiwan, with all the chips. So, it's a very exciting environment in which to operate at the moment.

Speaker 1 22:42
Okay, exciting. And now you had also just mentioned it in between. What influence did the Corona pandemic and the Ukraine war have on this challenge?

Speaker 2 22:53
So again for the supplier side: Well, Corona first of all completely stressed the value chain. Of course, it also temporarily paralyzed operations. So, there were times with a lockdown, when companies had to be inventive again, and now they've gone from one crisis, the pandemic, straight into the second crisis due to the Ukraine war. I don't think some suppliers can even get out of crisis mode to really bring new topics onto the street.

The Ukraine war has caused energy costs to explode due to the energy crisis. Inflation is going up. There have to be new things. Then there's the question, did the manufacturer also go for a gas drive at the end? Then it becomes quite funny. You're simply faced with challenges that have made things even more difficult for the supplier.

But nevertheless, I see it in such a way with the acquisition costs by the rising costs, the acquisition of a machine is also ever more unaffordable for its customers. So, I'll try to work out the opportunities again.

Speaker 1 24:21
Exactly, we'll come to that in a moment. Maybe also to briefly look at everything again from the customer's point of view. You can also, if you like, answer a bit more succinctly, and then we'll get straight to the drivers.

Speaker 2 24:41
For me, the customer side would always be characterized by uncertainty regarding the payment amount. Then also again, the cultural issue that you have to get away from your status and ownership thinking and also this security striving a la "I own something".

Speaker 2 24:59
We also have data protection as a point because many customers are not willing to give the data to the provider or the manufacturer of the machine. So, they say: "Great, I'll give him my raw data about how well my operation is running, so to speak, and he can use that to adjust the price model accordingly. So that's also a bit of fear of dependency, so to speak, and just too much transparency in the value chain. Yes, I think that would be it.

Speaker 1 25:29
So, let's move on to the drivers for the acceptance of such offers. Again, also like to start with the provider side.

Speaker 2 25:43
So on the supplier side: I think one driver must not be forgotten. You can also couple EaaS very well with the issue of sustainability. I would say that this is a bit like the whole desire to own things. It makes it more difficult to recycle things or reprocess them or, let's say, to ensure that they are disposed of properly. And, of course, you can link the whole issue well with that.

Speaker 2 26:18
So then we're dealing with these increased acquisition costs. Here's the opportunity simply to make acquisitions affordable in the first place via EaaS.
Then we have the increasing complexity. Rather, I would say that every machine is now fully equipped and must be maintained and serviced accordingly. Of course, this is also a huge issue for the customer, that this is simply covered.
He also has certain flexibility, depending on the contract constellation, so he can also better respond to the economic environment.

Speaker 1 27:06
Mhm. And what influence did the Corona pandemic or the Ukraine war
have here as well?

Speaker 2 27:16
These were partly the trigger for one or the other driver. So now energy costs or just the beleaguered value chain and perhaps also the, I'll call it "battered corporate landscape". So that was definitely the cause, you could say, and actually that also indirectly promotes the need for EaaS a bit.

Speaker 1 27:46
And maybe now conclude the whole thing again on the customer side. What were the drivers there? So, we'd like to go back to the market and company level.

Speaker 2 27:59
So on the customer side, you can actually say again, energy costs and inflation are again issues that have also arisen again due to Corona or Ukraine war. You can
also mention the increasing complexity of all the goods. And clearly, liquidity is still an issue that you also have flexibility and can run well in the fairway. And there are probably also some regulatory issues, such as occupational safety, etc., which regulate the maintenance of machines and also represent an increased effort for the customer to ensure everything accordingly.

Speaker 1 29:00
Okay. Again,
what impact does the Corona pandemic and the Ukraine war have on customers?

Speaker 2 29:08
So they will probably increasingly ask for it. Relatively also by the risen interest costs, the classical financing, thus purchase from own capital funds, will not be possible because of the crises anymore.
The increased interest costs make it relatively unattractive to finance the whole thing. I would say that we were in a different place a few years ago. And that really means that the liquidity situation on the market is actually getting tighter. Accordingly, there is a demand for alternative solutions that do not involve ownership.
Speaker 1 29:53
Okay, exciting. Right, let's move on to implementation. In your experience, how are such projects initially implemented? How can you imagine that? I'd be happy to sketch it out.

Speaker 2 30:08
We have now proceeded in such a way that we have also started pilot projects. And first of

all, we approached the whole thing on a small scale. I think this is also due to the complexity of the market. Everyone has a different machine and data interfaces - well, some now have industry standards or are trying to implement them.
There is also "Mindsphere", which is also a huge topic that Siemens is driving, where they actually want to join forces. I don't want to defame my colleagues or anything, but not much came out of it, so to speak. That's why we've seen that small pilot projects like this are the first step in the direction of gaining experience and seeing whether acceptance arises on the customer side.
Because even in the pilot projects, we had real difficulties in getting the pilot customers together, simply because of time constraints. In some cases, they were in such a crisis mode that they didn't manage to let our technicians in to tap the data.
So that's why, especially when implementing such models, it's really like this - you have to approach it step by step. This is also related to the fact that as a financial services provider, you have to fulfill the MVP, i.e. always at risk, process for new products.
And especially when the revenue model is changed, it's a bigger issue if you're going for the big one right away. Then it takes a minimum of two years until the process is completed and you can even bring it to market.

Speaker 1 32:21
Yes, and what are factors for successful implementation?

Speaker 2 32:29
So first of all, on the technical level, we have the issue that the data interfaces are regulated and that you also really, especially when it comes to pay-per-use or such topics, have the data available. Without the data, it becomes difficult, so as I mentioned earlier: There was once a partner where we had issues with obtaining the data in the first place. That was a lot of manual effort and that has to pay off at some point.
Then also the topic of picking up customers, so simply eliminating these data protection concerns. What happens here with my, shall I say, sanctuary data that I now want to give out? Yes, these are technical, cultural, and also regulatory factors, because you not only have to make sure that the customer wants to hand it over, but also that it is stored correctly.

Speaker 1 33:41
I get it, anyway!

Speaker 1 41:30
Yes, I would now continue with the last questions. You can also answer them a bit more briefly, given the time. I also have two spontaneous additional questions that I would find quite exciting.

Speaker 1 41:46
You just talked about the manufacturer or the customer who took photos there. How far do such implementation projects differ between machine builders with a high and low level of digitization?

Speaker 2 42:04
So for us as a financial services provider, it's a higher effort if we have a low level of digitization. That's what we've noticed, especially with medium-sized companies.
That's why we've also taken the path of setting up
another pilot project, where we've worked with a start-up, so to speak, to ensure that we go to

the data interface, i.e., from machines, and also to set up a specialized start-up and sell the whole thing as a value-added service. In addition, to give the customer, let's say, optimization options, maintenance time windows, etc. from the machine. This also has the charm, when we do it as a financial service provider, that the manufacturer does not have the data, which was also a huge issue for the customers. That was our detour, so to speak, because we noticed in this pilot project that it didn't pay off. So, if someone then sits there manually and types out the screenshots. Putting an RPA on top of it wasn't really possible with OCR and all the effort, because that would only have been for one type of machine. Then you sit there again and do the next thing for the next machine type. So that's really more with your hand on your arm.

Speaker 1 43:33
Can I ask what the startup... Can I
ask what the startup is called that you
guys supported? Was that Relayr, was that Billwerk?

Speaker 2 43:47
Is a smaller start-up where we are also involved.

Speaker 1 43:52
Okay, okay.

Speaker 2 43:53
I can't disclose that, unfortunately.

Speaker 1 43:58
But I assume then that something like Billwerks, Synctive, Relayr. Yeah, okay, great.

Speaker 1 44:14
The service share, so a high or low service share in implementation projects. What role does that play?

Speaker 2 44:27
So I think actually the difficulty at the moment is more with the focus on this contract model. The service part can also be solved logically. That's not so much the inhibition.

Speaker 1 44:53
Do you have any other ideas on how to minimize risks in implementation projects?

Speaker 2 45:02
So I think a good topic is really partnership of financial service providers with machine builders, that there is some kind of risk sharing. Another topic would be if, in the best case, there were also an industry standard for the topic of data. Because then, of course, you would have a standard for several topics at the same time and wouldn't always have to reprogram everything. That would be another implementation hurdle that could be removed. Exactly, and then there is also the issue of interface openness. Some manufacturers are not even willing to pass on the issues to us, even if they are the data owner. That's where billing models come in.

Speaker 2 46:35
It is actually important to start small projects and gain experience. So that you are not surprised by the new product process, especially with financial services. If you want to meet all the regulatory requirements, it can really take years to implement something like this, and the costs are correspondingly high. It helps if you move forward a little bit smaller, gain experience, and I'd rather realize after two years: It's a flop because I was in the wrong industry.

Speaker 1 47:43
I had a question regarding the financing actors. First of all, how attractive is it for a financier to act as such in this EaaS
model?

Speaker 2 48:01
So it's, how should I say...for us, so as a financier it's also a security if you have industrial property, the real estate or anything else as security. So that means with EaaS it's actually not that attractive anymore because you just don't have that collateral anymore that you can collect - unless the financial service provider theoretically becomes the owner of the object, but that also comes with issues.
So, I would say financial service providers are actually being pushed more into the context by the market, especially by the partners of the big machines. You have to put it that way, because they want to become service providers, so to speak, and actually offer customers a full-service package. For financial service providers, then, the issue is rather: Okay, does the manufacturer take over completely, as some manufacturers are already doing, with their captives? Or do we get the know-how from the financial service provider?

Speaker 1 49:34
We asked ourselves: Why is there not yet a financing or such an intermediary platform that mediates between financial institutions and providers?

Speaker 2 49:54 So what exists are the classic intermediary platforms: Customer wants to finance, hires, comes to the financial service provider. Whether it's COMPEON or FinCompeon, there are x, y, and z.
Especially in the Eaas area, I'm not really aware of anything in the niche right now. I know, for example, that there are now platform approaches to treasury issues, i.e., refinancing issues, where several banks are cooperating, so to speak. But until then...maybe they have just discovered the niche.

Speaker 1 50:40
Yeah, going back to that, what might something like that look like?

Speaker 2 50:49
So it would be an ideal case...the question now is, what do you take as a link? So one makes it in the mediation context data in such a way that one simply says: Okay, one appears independently, I set with such a data service, then over manufacturer and bank so to speak, thus this coupling There is also, well, it is now other niche, but it is also interesting, perhaps there is also the Startup Banks more, what it has set so to speak in the value chain of online stores and there the financial service. So actually, you would have to have such a model, so that you say so to speak something, which is such a technical intermediary, which sits on the machine and between, yes, I sound times provider and bank the bridge builds. so, if the

manufacturer takes part in it, so there would have to be something from the customer side, which urges the manufacturer to do so, because he actually wants his data step point and data security, there are some, which then also really exclude the warranty and guarantee, if anyone goes away to these data. So it is, yes, or you have to really manage to find a really good cooperative model, but yes, I see it more in this technical middle function, because there need anyway, so financial service providers as well as machine manufacturers need support and there are also possibilities, then you just do it with a participation construct in the background, will just not work for all, but for some application line it is perhaps a good deal.

Speaker 1 52:58
To what extent are insurance aspects a hurdle for you as a financier.

Speaker 2 53:12
Well, not for us, because we have a very, very strong, let's say connection to the insurance industry. That is to say, we have always been involved in that, that we even insure the machines.

Speaker 2 53:28
So that always already our financial service, at least with offer. So, it's also a contract terms, standard in the industry that you actually always require insurance as well.

Speaker 1 53:56
Okay, wonderful. Great, then thank you very much for your patience. You're welcome. Very, very much appreciated.

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Speaker 1 00:16
Then I would also start with the first question. What do you feel about it? To what extent are machine manufacturers and customers of machine manufacturers familiar with the concept of Equipment as a Service?

Speaker 2 00:34
It is like many topics. The names are known, what the respective people understand under it, that underdeveloped. That really has to be said. The term Equipment as a Service is not so widespread in Germany.

Speaker 2 00:56
There are only a few that have made this a success. Most companies look at it from the perspective of balance sheet relief. And don't want to have anything to do with it. That's a big problem in implementing it.

Speaker 2 01:17
So people have the term in their head, can also say something about it, that's kind of how it has to do with pay per use, but the concrete implementation often haven't thought about it.

Speaker 1 01:33
So can you actually identify in any way what then are possible causes?

Speaker 2 01:40
It is as touched, think there often first the people in the finance department about it, because they just want to sell something, should be relieve balance sheet, which can be achieved but not always easy.

Speaker 2 02:04
We as a bank are of course not machines or ace experts. That means that we keep them on the balance sheet for ever, that doesn't work. So that's always a cooperation model.

Speaker 2 02:22
You usually have three main stakeholders in the EaaS system. That's the manufacturer, the customer, and the financier. That EaaS only works if the manufacturer has interest in the secondary market. That being said, we are looking on the entire product lifecycle.

Speaker 2 02:41
Bank can finance that, but there are take back options by the manufacturer and there is the user. EaaS can't be cheaper than CAPEX, there's no question about that. It is more expensive. You have to keep that in mind, if the flexibility fits the deployment -scenario to EaaS, if has a machine and drives it 24 -7 and wants to take it over later under any circumstances, then I have to consider if he does the model.

Speaker 2 03:20
But if, for example, the pharmaceutical industry has long launch cycles, the automotive industry does prototype or has seasonal fluctuations, then that's a different issue. So, the

deployment scenario has to be right, you have to be willing to pay more money.

Speaker 2 03:42
That can also be related to the fact that I pay more money, that the machine mostly has a maintenance contract with EAS, a repair contract and I also go get the machine always up to date.

Speaker 2 03:55
That can also be a reason why you have to use that. Deployment scenario has to be right.

Speaker 1 03:59
Great. There are many points raised, which will be taken up again more deeply in a moment. That's why I would like to continue with the second question. The typical customers of Equipment as a Service, if there are any, with a focus now on the German plant engineering sector, can you think of any specific, recurring, common characteristics of these customers?

Speaker 2 04:23
Then you mean the users?

Speaker 1 04:24
So you could like both sides once the vendors who produce machines and then the customers who accept it.

Speaker 2 04:32
So the EaaS model also has to be defined again. For me, the EaaS model clearly has to do with the fact that the manufacturer must also have an interest, because you have to manage the cycle.

Speaker 2 04:42
In this respect, when we sell EaaS as (company anonymized) today, we focus on the manufacturer. Yes. In this respect, the manufacturer is our customer. Often, of course, there is also an agreement that we know the user of the machine, which is also one of our customers.

Speaker 2 05:04
It makes a lot of things easier in terms of also assessing risks, it has to be said. But I have that in today's so typical way that from automotive suppliers. The machines usually don't have infinite run times.

Speaker 2 05:24
They are not close to the plant. That means they are movable. You know that now, we don't do that there either, so that's why I can reference. If you are seeding this trailer, semitrailer to manufacturer, Schmitz -Cargo -Bull, if you are driving down the highway, it says that on every other trailer.

Speaker 2 05:48
We have a highly mobile, highly standardized cult where such models fit. Because the trailer fits just as well on a German set clipper. And you can go to Afghanistan, there it can hitch it.

Speaker 2 06:04
That will also work. We have a high degree of flexibility, it's mobile, ideal. If we then go in

the direction of production lines, paper processing, corrugated cardboard, then we already have a plant character in some cases.

Speaker 2 06:22
We have very long runtimes, so it's already difficult in the refinery. It's not possible at all with EaaS. It becomes completely impossible. Unless someone were to go and say, I have a plant completely ready, and you are moving in for two years.

Speaker 2 06:46
So quasi that that uses everything then, so also the location. I haven't seen that yet. Then of course that goes. So, then you have but a third in the game given, if or the manufacturer makes it.

Speaker 1 07:04
Yes, okay, super, super exciting. So, we can first concentrate on the customers, i.e. the manufacturers of the machines, if you have the larger point of contact there. Then, of course, what is the demand in general?

Speaker 1 07:16
So happy to just give a quick estimate, high, low, or medium for Equipment as a Service solution from your experience.

Speaker 2 07:28
So often things fail because of operationalization and misconception.

Speaker 2 07:34
It's very clear that the risks have to be shared. And often people have an idea that somehow something quite miraculous will happen, that all the risks will disappear. They don't disappear, of course.

Speaker 2 07:48
And then the conversations also stop. Which is a key point, to move it forward, if a company is willing to involve sales. Because at the end of the days, the model, this business model must also be distributed by the sales department.

Speaker 2 08:08
And for sales, it's completely different that you earn money over years, a margin or whether you are quasi-incentivized from the front. You have to go along with that first. That's not very easy. And a lot of films then make a mistake out of that because they think that from the finance department.

Speaker 2 08:30
It's a main sales issue. So, you have to look at it from the sales side. A lot of companies have illusions about that. In America, people are much more open to it. These are the common characteristics, for example, that in the paper processing industry, too, the large manufacturers have hired specialists to take over the production peaks, so to speak, so it's an ideal fit.

Speaker 2 09:05
So we were able to make some deals there. And the Americans are a bit more open to doing that. They even go so far as to offer models with personnel. That means you don't actually

buy a machine, they do everything.

Speaker 2 09:27
You're buying a production security, so to speak.
And you pay for it by the piece. That is an important prerequisite for this to work.

Speaker 1 09:41
That's exciting. Are you then going to say specifically that the need is high or rather not?

Speaker 2 09:55
is still a niche product.

Speaker 1 10:00
Industries and machines. That would be a level that you have already touched on a lot, but I'd like to summarize it again in a nutshell. Are there specific industries in mechanical and plant engineering that are predestined?

Speaker 2 10:18
Metalworking industry.

Speaker 1 10:21
Yeah, great. And why?

Speaker 2 10:25
Because that's where the machines, let's say, have the limited complexity. They come into a hall, they're bolted down, comes in the ceiling. Sure, there's a supplier -conveyor on it, but you can take them in and out.

Speaker 2 10:38
That is high mobility in general. The European or German mechanical engineering, we have high service life, that is, the reuse is given. So, if it doesn't keep running in Germany, it keeps running somewhere else.

Speaker 2 10:51
That's a given there. There is a secondary market there as well. The question is always, is a secondary market there and are used machines. Paper industry is also possible. So where then toilet paper is produced.

Speaker 2 11:08
Here these handkerchiefs and things. We also have good capabilities. Laser cutting machines on a limited scale. Little hype by Corona -pandemic -filling machines for the pharmaceutical industry. So that you're filling into the vial. You have some change there as well. Depreciation periods should be around 6, 7, 8 years, no longer.

Speaker 1 11:45
Yes, super exciting. I mean, there is also just a few industries, including the pharmaceutical industry addressed, short, interposed question about it, if one hears again and again from the MedTech -area that there are these technology partnerships between large farmer companies and hospitals, which then provide whole package.

Speaker 1 12:02
Did you go along with my funding on that or have an opinion on how that flies?

Speaker 2 12:07
So often these markets are dominated by that. In recent times, the manufacturers who were able to provide the funds themselves have always been very successful. So that is also publicly, for example, Siemens, which earns me or a few then about the fact that they also supply the consumables for the machines and invoice them. Trumpf also has its own bank.

Speaker 2 12:44
There it also does not go through the ceiling. Since often manufacturers have raised their own funds and make these rental models and ready training models under their own management.

Speaker 1 13:02
Would you say then that that could be a critical success factor or that it makes it more likely to succeed if companies are able to fund that themselves?

Speaker 2 13:14
Yes, of course, on the one hand you need partners to manage the risks. On the other hand, of course, every partner who comes wants to earn money. So, tendency is of course on the one hand, if the cost favourable offers that you have less partners, that is unless someone is determined good, then you can also pay more for it.

Speaker 2 13:44
But sure, if you have multiple partners, you can spread risks on multiple shoulders. There's no question about that, it's not something you can say one or the other is the right solution. It just depends on case to case, that's why we don't need to talk to manufacturers who can do it themselves.

Speaker 1 14:10
Great, totally clear. You've already mentioned it many times, and you've touched on the subject of what we machines are actually, what their properties are, things like mobility, number of moving parts, degree of standardization, maybe you could actually summarize again briefly in two sentences what properties are absolutely crucial for you.

Speaker 2 14:31
So the machine, depending on what's produced on it, if it's customized, it has to be able to be deconstructed so that something else can happen. If you take a classic lathe and you haven't done that much to it, then you can pretty much turn anything on it.

Speaker 2 14:47
Everything that is round, neither less cylinder symmetrical, goes on there. That is already a crucial point, because the retooling costs of course a lot of money. If you go to the countries like China, put that then, but the degree of customization must be low.

Speaker 2 15:03
When you think about vehicles, then of course you have to pay attention whether the exhaust standards, emission standards then also fit. Usually that is now once for machines, road machines that come from Europe.

Speaker 2 15:15
Most very high standard, there you can put in Turkmenistan. That is not a problem. So, there must also take into account whether then the standard to fit. That is of the More important the individualization, must be small, must be transportable, ideally it fits on a truck, so in containers purely, so not wider than 2.50 meters and not longer than 8 meters.

Speaker 2 15:39
And the degradation is not much effort. But you have to say, I have to underline that, in my estimation, people start with EaaS and 70 percent of them take over the machine afterwards.

Speaker 1 15:56
Okay. Exciting. Reasons why?

Speaker 2 16:02
Well, that's a financial question, of course. We lower that from the deployment scenario. If I'm setting up a production line, maybe because I'm delivering something for BMW, for a new model, and I don't know if that's going to fly, then I'm going to offer myself a machine first.

Speaker 2 16:21
That is times more expensive, but I can then get out. Mostly is then so that then flies but the production and then you keep it just because that is also then quite the cheaper model. So, you then also just have to see, depends on the application scenario.

Speaker 1 16:34
Okay, great. If we actually look at the challenges of the equipment as a service model, and we also like to look at the supplier side, the companies that produce the machines, can you identify any macro drivers that have a negative impact on demand, such as market competition, technological megatrends, the regulatory environment or demographic trends.

Speaker 2 17:03
So you can't talk about regulatory environment. We have, of course, in the Western world, more and more contracts and funding standards that decide whether a particular model can be made.

Speaker 2 17:17
I'm a physicist by background, so that's cool. I understand a machine, then I can actually go into all these technical details in a conversation with the customers. So, you understand what's happening, everything's okay.

Speaker 2 17:35
But at the end of the day, it's a matter of making the specific agreements, in terms of the clawback options, making the contracts, leases, terms and so forth in such a way that there is a balance sheet relief, that there is an economic sense in front of the model, that you have the right guarantees.

Speaker 2 17:51
That is, so EaaS, that it works, it is certainly necessary. 50% of the share to success is credit specialists, financial engineering, and lawyers.

Speaker 1 18:12
Yeah, I've actually heard that a couple of times as well. Can you identify then at the enterprise level, typical barriers, marketing financially, operationally, strategically or whether it's not stationary changing the adaptation?

Speaker 2 18:33
So there are a lot of, that's also a typical thing with all this EaaS stuff, there are a lot of start-ups with digital fantasies. And what then leads to the fact that you develop something without even having talked to users, you create some, yes, that's the way it is today, data, ecosystems and then there are these ideas, data assets and what you see, you get it all out.

Speaker 2 19:00 No
customer wants that, no customer because he should do that, such a production detail, such a machine somehow give someone. So, if you do predictive maintenance on it, that's good. So that's not a technological issue.

Speaker 2 19:16
You have to have, if you're going to have EaaS model, for the specific milieu of the industry, for the type of machine, for the deployment scenario, you have to have a solution that the customer will take because they're paying for it.

Speaker 2 19:28
It's not driven by developing this in a quiet closet. In this respect, sales from a manufacturer who understands the needs of customers is required from the very beginning.

Speaker 2 19:45
This is a very crucial point.

Speaker 1 19:50
So then actually this marketing and sales.

Speaker 2 19:54
That has something to do with product development. You can't really emphasize it very often. It's not an issue of technology or data. It is an issue of appropriate product development for the use scenarios of the user of the machine.

Speaker 2 20:13
This has nothing to do with technology. It's part of it, but it's not decisive.

Speaker 1 20:21
Yes, super exciting. When you say then that the Corona pandemic or the Ukraine fly in inhale has dampened the adaptation of equipment service, the uplift.

Speaker 2 20:33
Absolutely negative development has been, real relationships, because the companies had a completely different focus. There it was simply about survival and not about, let's say, new fantasies. Absolute damper been.

Speaker 2 20:50
So we had before Corona we had five appointments every week, loosely 50 that had contacts

that looked good. However, the Corona pandemic dampened that significantly because suddenly completely different things became more important, with a few exceptions.

Speaker 2 21:23
And the Ukraine war has brought energy costs to the fore. So that is, when you see how the energy costs have risen, is a times a marginal advantage in sales that I can maybe sell something where I earn 10, 20 percent more, theoretically, but 30, compared to that, that I double energy costs, so to speak, triple.

Speaker 1 21:52
Well, absolutely. Super exciting. We had actually heard from time to time that on the customer side, just a little bit, just through Corona, the quality bottlenecks, that people then tended to go for a subscription model rather than a Capex investment.

Speaker 1 22:06
That may have been a higher demand. That is yes more exciting in time from your side.

Speaker 2 22:14
I can't confirm that. There are always theoretical considerations about it. In the pharmaceutical industry, one has noticed it through that, because the other founding at the Corona -time here certain productions were ramped up.

Speaker 2 22:33
But I think in economic operation of a tank -main gun in the EaaS model, I don't think anyone has dared to do that yet. I don't think so, or such a Eurofighter I haven't heard of.

Speaker 2 22:58
Also from Rheinmetall. I don't know that.

Speaker 1 23:03
If we turn the page and actually look at the drivers, what specifically is driving the adaptation of equipment as a service? So, you've already mentioned it several times, of course, sales, marketing, these are not technological megatrends, but otherwise, I'd be happy to talk to you again if something comes to mind again when you see the drivers listed here.

Speaker 1 23:25 Right
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Speaker 2 23:28
So this shared responsibility model in cooperation, for me it consists of manufacturers, financiers, users, within this model there is a clear division of tasks where everyone knows where they stand and there is no problem at all to work out the advantages if the deployment scenario is right.

Speaker 2 23:55
These are every case. Many people still don't understand that, that you have to have that. That is quite crucial. Sales must be involved right from the start. As far as the risks are concerned, it is of course necessary now as a bank to focus on the fact that we are always talking about calibration.

Speaker 2 24:23
That is, we get data and then we sort of live this full-service rate, which is then somehow paid monthly or quarterly. And this calibration is done on empirical data.

Speaker 2 24:37
That means that we then live in a fixed way, so to speak, with 100 axle carriers he pays so and so much and if he only makes 50 in the month, he pays so and so much. So, you also have your risks under control because you do the calibration in such a way that over a long-term mean, of course, more or less 100 percent comes out.

Speaker 2 24:58 It
can't be that at all. You can then through contractual agreements, you can also incentivize the takeover, there are different models, depending on how that was used, that the takeover price falls or rises, so there are different things.

Speaker 2 25:14
This is again a contractual issue. So, this financial math, I'll say, financial math, you have to have a handle on that, that you can quantify the risks. We can do that by now, that's not an issue.

Speaker 2 25:29
But you also have to share the responsibility. This includes that the manufacturer is involved when it comes to taking back the machine. There, of course, you have to find a trick that it is nevertheless relieving with him or that also goes.

Speaker 2 25:44
And then that works. Technically, so data sparing is the order of the day, you can't mug people that you're pulling in milliseconds of data. You can't. Technically, we have so many possibilities today through cloud systems that there is no limit.

Speaker 2 26:06
So you can get the data. But you have to take little, otherwise many people do not like.

Speaker 1 26:14
Exciting, would you say then there, so negative influence, was there nevertheless maybe a driver that was strengthened by Covid or Ukraine that encouraged that adaptation?

Speaker 2 26:28
As I said, the armaments industry has been ramped up, but we don't have a stake in it. So, I personally, so not, so what do I personally, so we as a bank have here in the direction with the armament is here also very, very classic nothing.

Speaker 2 26:52
Positive trend with the whole vaccine production, of course. What was invested in machines, how many billions were made, they are no longer made today.

Speaker 2 27:05 You have
to see that, too. So as quickly as it came, is also gone again. But I cannot see that in the overall view there were in niches, already changes because of Covid or the Ukraine war.

Speaker 2 27:20
But that, and as I said, what was again, factually, it's still a niche model today. I think that we have a relatively good overview of who's around and who's offering, what they're offering, have the regular exchange.

Speaker 2 27:41
So, nobody went through the roof there.

Speaker 1 27:48
What measures we come to the next tasks -question block could promote equipment service providers for the adaptation of such models on the customer side in the future?

Speaker 2 28:04
So I think it's important that their manufacturer offers the model. It's not something that we did, for example, early on the bank that we distributed these models, that scales poorly.

Speaker 2 28:18
So individual contracts for machines that cost 250,000 or 500,000 euros, that's not worth it. So you have to offer this financing or let's say utilization model in cooperation and the manufacturer has to do the distribution.

Speaker 2 28:35
That is a very crucial point, and the customer must then also that also a problem. All the time is always compared, is it more expensive or cheaper, you always leave on this discussion and that brings but simply nothing.

Speaker 2 28:51
I can't say I drove a Porsche GT3, let me explain why I should take a Land Rover. This is a stupid discussion. What's the point of that? If someone needs a Land Rover, I don't start talking permanently why there is no 300 running on the highway, that nonsense.

Speaker 2 29:11
So you have to conduct this in isolation, not permanently ask this question, what is actually the difference. It's the model, it costs so and so much, and I don't do flyover calculations all the time because then people automatically say, of course, the Porsche is more expensive.

Speaker 2 29:26
I am not surprised. On the other hand, it doesn't come through the woods. You have to put it that way, then they decide people yes or no for it. This package has to be put together and has to be discussed with sales.

Speaker 2 29:41
And we can then also put pretty much any financing there in the meantime. So now not as equipment in this service, but pay per use for equipment, we can do that as well. That's not an issue now.

Speaker 1 30:01
Have you ever noticed, if not a topic at all, the implementation of Equipment as a Service models, so what are the typical success factors in the implementation and what are the typical

envelopes in the implementation process on the provider side?

Speaker 2 30:18
When it comes to the days it's about permanent establishments, tax models, contracts, USGAP, HGB, IFRS, all totally boring for me, but that's a crucial factor. So, you have to be able to say something about that.

Speaker 2 30:37
In this respect, certain models do not make sense in certain countries. But you have to imagine, a machine produced in Europe for a distribution company of the manufacturer in North America is paid a mother in Germany.

Speaker 2 30:59
But the machine is transported from Italy, you have to get that right first. So also, in terms of tax law. Where what accrues, where which taxes are made and so on. And then here also, the good must also be valued.

Speaker 2 31:19
So if we take the machine on our balance sheet, at least in transition, then of course how the insolvency law is also applies. So, what kind of access do I have to the machine?

Speaker 2 31:33
That varies per country. And it always depends on the contract template. So, we can't really do anything where we're not represented. Well, with North America we are represented, but that is different per country.

Speaker 2 31:48
So Ghana, we have no idea. We can't do anything. So that's, insofar happens in terms of countries and regions, nothing new with EaaS. So, we can actually also with the model only in countries as we exist.

Speaker 2 32:10
So we can't now suddenly make production facilities or users, depending on what we have of model, in Mexico. A gamechanger would still be if the export guarantees of the countries could be applied to these variable models.

Speaker 2 32:39
Germany is yes Euler Hermes. Substantial is once export guarantees, if it is then issued by Euler Hermes, but does not apply to such models. But we had a working group, but Corona came in between.

Speaker 2 32:58
We have really brought this to a proposal together with manufacturers and Euler Hermes. But that would also be another gamechanger, that export guarantees are issued for receivables that only arise in the future, so to speak.

Speaker 2 33:17
The Austrians are also doing this, so Austrians, the ÖKB, I think it's been done before. So that would also be another gamechanger. So, you see, you always have to look at how the classic

models then run, that then the place already.

Speaker 2 33:32
And that sometimes falls away with EaaS, especially those export guarantees.

Speaker 1 33:40
I'm curious to hear you say then that the level of digitization of the manufacturer is an influencing factor in the success of the implementation of Equipment as a Service or the uptake of Equipment as a Service.

Speaker 2 33:56
So that's the case with many people. All the innovation is taking place in the media. Of course, there are car manufacturers that are highly automated, but a lot of it takes place purely in the media. The companies are often further away from technical operationalization, as is the case here.

Speaker 2 34:18
If you then look into a single thing, you then see on the website any digital programs and that you can then service machines from the headquarters in Europe in South America. So that's not the case by a long shot.

Speaker 2 34:37
So this level of digitization often takes place medially. Almost exclusively. A real operationalization is then also completely removed. The
fact that I have an app with a picture on it doesn't mean anything.

Speaker 2 34:53
But you've made a lot of progress. So that has to be said. Some manufacturers already have connected programs similar to BMW. That means that machines are delivered with a ready-made technical adapter, which then goes to a cloud solution of the manufacturer.

Speaker 2 35:14 There
is that.
Of course, we'll get on board with that. Because it's quite clear that individual interfaces, individual machines, don't scale and are too expensive. So, if the manufacturer has such connected programs, we sit on them.

Speaker 2 35:32
Is it also a basic requirement as of today, otherwise we don't need to talk either.

Speaker 1 35:38
and regarding the service share at machine builders, to what extent does that have an impact on successful implementation.

Speaker 2 35:48
That's a great motivation because you can assume that the additional services that are required. So, I'm saying no human being goes and we now don't take a machine on the balance sheet that's not up to snuff, poorly maintained because if you don't own something, you see an electric roller like that, you throw it in the corner, you don't treat it decently, you

have to take precautions here.

Speaker 2 36:13
So EaaS without a wattage repair contract is not possible. But that implies that then the manufacturers can earn 20 to 30 percent more over the entire term. That's a big motivation to do that.

Speaker 2 36:28
We haven't realized that yet, because many people are still very, very keen to earn money from the hardware, not from the services.

Speaker 1 36:43
Super. Then actually still two short questions, as you always just already once said, second market afterlife, second market, super for the machine manufacturers that one thinks that along, that one thinks through the complete product life cycle, do they have then otherwise also any KPIs or a target system or an incentivization, which make sense to integrate service successes with machine manufacturing and to improve project successes?

Speaker 2 37:12
So it's, depending on, we haven't even talked about the different models that there are with EaaS, so that's credit financial, that's a leasing basis. There are hybrid models, who owns the thing then, we always need a credit rating.

Speaker 2 37:42
If we make it to the manufacturer, you can make it to the manufacturer to some extent, so depending on whether they issue guarantees, but they don't want to do that as in balance sheet relief, the cash - flow does come from the user.

Speaker 2 37:57
That is today, was me just standard regulatory obstacle bundles, of course, we have as a bank by the whole money laundering and know your customer - requirements no more lean processes. It's called the speed in which we can process so right, that's not really competitive, but that also affects all banks.

Speaker 2 38:25
So this is where we can start, there are different models, also cooperation models, that we cooperate with small providers, so to speak, where we shift this process effort a bit and actually put it down to a small leasing company.

Speaker 2 38:43
That can make perfect sense, then you save the onboarding from the user every time. That's a significant problem, so you just have to think about that. I have EaaS in the cooperation agreement with the manufacturer, then a user comes, the user delivers the cash flow and of course I have to rely on that, so I have to look at the balance sheet of the user.

Speaker 2 39:08
Where do I get them? Who supplies them? Do I have a contact? Do I have the on -ordered? Have I complied with the money laundering laws? That's all a huge expense. So, for this reason, in some cases where we have no contact with users, it's actually worth cooperating

with smaller company platforms to get this process disadvantage out of the way.

Speaker 2 39:32
That is not to be underestimated. That's why you lose a lot of business.

Speaker 1 39:41
Would you say that it would help you to establish a matching platform between financial institutions and providers for the future promotion of the cultural heritage model? Are there any ideas on that?

Speaker 1 39:56
There you would say that generally the demand and the players -market are already highly mediated.

Speaker 2 40:05
Yes, of course, that can help. The crucial question is also if one understands this exactly under it. I have often experienced, I come in the appointments, people actually want to talk about EaaS, but they don't talk about it at all.

Speaker 2 40:23
Well, you always have to make sure that you talk about the same thing. Then we make the contacts, but you realize that you've talked past each other afterwards. In principle, of course, something like this can help.

Speaker 2 40:39
I have now seen artificial start-ups; they are still relatively successful with it. For their size, they have an online process, you get an indicative offer, the manufacturers are onboarded, so you can pick and choose in the machine.

Speaker 2 40:58
That's a good offer, that's a digital offer.

Speaker 1 41:05
No, it can't be.
It's not like I'm switching gears. Yes, that's good because I worth a try but sounds exciting. Then last question still from my side. If you still have the time.

Speaker 2 41:22
You can say one thing, that is also public, that is now something completely different. But I don't want to evaluate that, that's like I'm not in the degree so good, but DMG Mori had together with their Japanese bank also such online -offers, although I can't say anything about the details then.

Speaker 2 41:44
They also put out offers, they also do that with the software, with such a digital platform. But I can't, I don't want to evaluate that. But there are definitely such approaches.

Speaker 1 42:03
Then, last question from my side, would you say whether the equipment as a service model could be interesting for private equity investors in terms of value creation and then increasing

resale.

Speaker 2 42:19
So we're actually on something right now where we want to do exactly that. EaaS is, of course, in addition to what I said before, also a volume problem. We don't have enough standardization to be able to make such models.

Speaker 2 42:36
So we have already had talks with insurance companies. I had positioned Munich Re once. But the fact is, you would have to be in the market, there would have to be a lot of EaaS financing in the billions.

Speaker 2 42:57
So now not only from us, but from others. And then, of course, you can put together packages, that you participate in a transaction, that you take it over and invest the others. But that must always have a certain homogeneity.

Speaker 2 43:16
That's why I always say quantity problem. What do I want to say, if I have then such a belly-load between paper machines, industry and what was certainly everything. Do I have diversification, but do you understand that?

Speaker 2 43:29
And are the contractual agreements then such that I also want to invest there, that I can assess my risk? So, we actually urgently need larger quantities in the market overall, so that solutions can really be found for the problem areas and a greater understanding.

Speaker 2 43:51
Today it's more or less on the technical level. Yes, I have an IoT adapter, none of that helps us. We would actually need on the would need volume problem. We would need the incentive to do insurance models for this, to get investors excited about this, because one section with 10 million I don't do it.

Speaker 2 44:22
In this respect, such inquiries do not arise. But of course, it would be good. No question about it, we are currently working on it, so we have a lot of financing that we can then bundle into a special purpose entity and then of course also sell it.

Speaker 2 44:43
Whether that comes about, whether I don't know now, but something like that would be good. But for that we need a standardization, we need financial instruments, and they won't come if we just talk about millions all the time.

Speaker 2 44:57
We just need to talk about billions. In my view, we would achieve a lot if in capital equipment financing, so here with these machines, EaaS, if we could get 10 percent from our sales there, that would be a great result.

Speaker 2 45:23
Some who say it wouldn't be just 25 percent, I have my serious doubts about that in the next

few years. But 10 percent would be a nice target. If you then look at what German industry exports, over billions, what we do there alone, with 10 percent nice.

Speaker 1 45:41
Super, yes, super interesting. I would then actually briefly, if there's still time, give my two - colleagues the opportunity to put one more back, if they have any.

Speaker 1 45:51
Otherwise also from my side first of all big thank you. I think it is already a super, well, and exciting point. And that helps us. we can thank them accordingly for taking the time.

Speaker 1 53:35
All good.

Speaker 2 53:36
Thank you. Bye.

Interview Transcript Participant 20

Speaker 1 00:20
Sure. Great, wonderful. Then, right, I would start right in. To what extent are equipment manufacturers and customers of equipment manufacturers familiar with the concept of Equipment as a Service? I think it depends on the industry.

Speaker 2 00:39
You certainly have industries, so printing as an example, machine tool manufacturing, CNC machines, I think it's a well-known term and also a concept by now. But then you have other smaller manufacturers or smaller equipment, where the business case is not quite so obvious.

Speaker 2 00:58
There I think it's less common. And from your perspective, what are the common characteristics or requirements of equipment as a service customers or equipment as a service provider that are so recurring?

Speaker 2 01:14
Financing, risk hedging through financial and insurance products, so equipment breakdown insurance, uptime guarantees, and the ability to sort of end-to-end source vertical integration.

Speaker 2 01:35
That is materials, the whole issue of repair, refill materials, so really being able to buy the end product in a service model, so to speak, rather than just consuming the machine in a service model.

Speaker 2 01:53
I think that's something that most requirements share. And does that apply more to both provider and customer at the same time, or are there distinctions? The provider may usually offer something different than what the customer likes.

Speaker 2 02:09
He is doing, what is the challenge for the provider, the finance, and the insurance side? Because if you don't have an insurance partner where you can offload the risk, you just carry the risk on your own balance sheet and then at some point you become unbackable because you have to carry for those liabilities.

Speaker 2 02:26
So there's a certain misalignment of interest and that's why finance and insurance partners are exciting elements of an equipment as a service equation because you can do balance sheet, liability offloading right there.

Speaker 1 02:41
Okay, I see. And now, again, if we look at both vendor and customer perspectives, how high or low would you say the demand is for equipment as a service solution?

Speaker 2 02:55
I think that's growing strongly again now because the financing costs are going up so much. So, you have now in the zero-interest rate policy what a little bit harder to argue that. But now

that you're at about 6-7 percentage points in interest rates, I think the hunger is growing to get the benefits rather than service is one of the reasons. The second thing is, we live in an extremely volatile and fragile world. Germany has a recession. You have great difficulty as a customer to predict how your customers will behave, how the market will behave.

Speaker 2 03:29
And that's where you tend to put new purchases on the back burner.
With equipment as a service, you have some flexibility in there that you can either use to cover peaks or you can use to not have to go into that capex risk so much.

Speaker 1 03:46
And how does that look on the EaaS vendor side? What about the demand there? The demand is the same. So, you have a market, and that's both the customer and the Equipment as a Service provider, they're part of the same market, so they're going to see the same low.

Speaker 2 04:04
The challenge for the provider is, of course, that he now has difficulties with his own refinancing. So, the bottom line is that the attractiveness pendulum is shifting towards the customer due to the interest rate policy.

Speaker 1 04:20
Yeah, okay, cool. And which, you just mentioned in industries, now again explicitly, which industries do you think are predestined for the adaptation of Equipment as a Service?

Speaker 2 04:33
Industries that have relatively low utilization, so machine tool manufacturing, has an average machine utilization of 20 percent. That is extremely attractive for equipment as a service. A second point or second characteristic is markets where operator models lend themselves.

Speaker 2 04:57
There is an extremely successful private equity case in Holland. 247 Tailor Steel is the name of the company that is raising quasi machine tool manufacturing with equipment as a service, private equity owned and that is an attractive market then to go into the markets themselves.

Speaker 2 05:14
Printing machines, machine tool manufacturing, CNC, everything that's big, machines over 50,000 euros, those are the markets where it gets interesting. Okay great, exciting. Exactly, can we get to the challenges and concerns.

Speaker 1 05:31
Again, customer side and provider side here. What are the primary barriers you see to using Equipment as a Service models, and I'd like to do that on a, let's say, macro level first. Depending on how sophisticated the customer is in finance, the question is different.

Speaker 2 05:57
So if you, we did a lot together with Trumpf and there you have a lot of such stores, so where the man is CEO, woman is CFO and then there are a few people who operate the machines, they have relatively little, how shall I say, preference for accounting.

Speaker 2 06:14
That is, if you come with them that you can get
certain liabilities off the balance sheet, outsource risks, that is less interesting for them than now, for example, with such a 20/7 -tailer -steal, which not only looks at the utilization of the machines, but also at an optimization of its own key figures.

Speaker 1 06:31
That means the smaller the customer, the harder it is to score with financial metrics. That's a challenge, I think, on the customer side. And now if you think about macro drivers, so in this market competition, if we look at technology megatrends, regulatory environmental demographics, are there factors that negatively impact Equipment as a Service?

Speaker 1 06:57
Can't think of anything. Okay. Can you think of anything else on a sublevel, other points that negatively affect the issue. Okay, then the question, what influence did events in the Corona -pandemic and the Ukraine war have on this, yes, of the challenges mentioned?

Speaker 2 07:22
Have not called any. So also, that I, let's say, the interest in these family business constellations. It has changed extremely much, but you have to distinguish Equipment as a Service, which is a consumption model, a consumption model for a machine.

Speaker 2 07:48
And the need for certain machines in markets has changed due to macroeconomics and geopolitical events. And that of course, that has a trickledown effect on the need for a machine, but that's independent of whether you relate that in a cape or in an OPEX model.

Speaker 2 08:08
So if you want to go to something big macroeconomic, that's an impact on equipment as a service system, that's the topic we talked about in the introduction with interest rate policy. It does make a difference, of course, whether you're financing 100 million of your own equipment now at 0% or 2% or now at 8%.

Speaker 2 08:30
But we discussed that briefly before. Okay, great. Then we would now turn the whole thing into the positive, drivers for the acceptance of Equipment as a Service models. What specific macro drivers do you see there, also like again on the provider and customer side.

Speaker 2 08:53
I would look at the extent to which ESG net zero interest can have an impact. If you go here now, I founded a company three and a half years ago, it's listed in the energy environment, we buy different companies.

Speaker 2 09:10
And whenever we can find and prove an ESG-angle, our, the interest rate goes down by five absolute percentage points. That has an extreme impact, is financed from the EU Green Deal.

Speaker 2 09:28
Why am I saying that in that context? Because Equipment as a Service also leads to the bottom line that the utilization of a machine goes up. So, you have machine tools at a start

briefly addressed more with 20 percent utilization.

Speaker 2 09:40
That means you have five times as many resources in the machines than you actually need in the market. You only need a fifth of the machines. If you now also look at companies like 24/7 Tailors, which have in the utilization right from 80, 85 percent, that means if the world would completely get into this trend, you could probably save a third of the machines.

Speaker 2 10:06
If you break it down to a market like Trumpf, there are 20,000 machine tools out there. So, you're talking about enormous energy cost reductions, resource reductions.

Speaker 2 10:16
You're shoveling less stuff from left to right. So that, I think, could be the biggest impact if there's a reasonable angel there. And what other enterprise-level drivers do you see the Equipment as a Service favoring?

Speaker 1 10:33
What other enterprise-level drivers do you see driving Equipment as a Service adoption? I see a trend among insurers to open up more, to put Equipment Breakdown Insurance on a broader footing as well.

Speaker 2 10:52
So you have a lot of industrial insurers now that are making this available to a broader corporate audience. And we had mentioned that briefly before about the importance of the risk transfer issue.

Speaker 2 11:03
So I definitely see that on the enterprise side from one. And the second one is that you have more and more technology tools available within the hyperscale’s that make it significantly easier for
you to deploy so equipment, as a service models and integration, upstream and downstream, so in the ERP systems and so on. So, framing that with a heading, the whole issue of more technologization of the available stack, that you can buy very much quasi on the shelf. I think that's these two trends of insurance and technologization.

Speaker 2 11:42
If you were to prioritize three drivers or so at
the enterprise level right now, what would they be? That's just called risk. So, risk transfer, capabilities, the first one, the second one would be technologization and the third one, would be a more growing awareness that operator models work.

Speaker 1 12:05
Okay, still here again the question, what influence has in the events, like the Corona pandemic or Ukraine war on these drivers? On technology none, on risk transfer none, operator models none.

Speaker 1 12:24
Okay, then we'll get to the implementation. How will be so roughly outlined, Equipment as a Service model initially implemented? On the customer side or on the enterprise side, so

manufacturer side?

Speaker 2 12:41
Gladly on, so if you can say something about both. Yes, let's try to answer both, you can see if there are specifics somewhere. So, what is extremely important with Equipment as a Service are two points.

Speaker 2 12:54
One thing is that the manufacturer really understands the customer's process end to end. So now if you take another example that we haven't talked about, bottling lines, so Krones, KS, Engel and so on, is an extremely complex process with manifold machines that are involved.

Speaker 2 13:14
You have the bottler in the middle, that's KS or Krones, then you have somebody blowing up the bottle blanks, if they're plastic, shooting the channel, then that goes through the bottlers, then it gets packaged, and then it gets loaded.

Speaker 2 13:27
Equipment as a Service only works on the basis of the process chain or along the process chain. It is of relatively little use if you consume half, one third, two thirds of your process as Capex and have Equipment as a Service in the middle.

Speaker 2 13:40
So you need the end-to-end view. Which leads to the fact that it's incredibly difficult for Krones and KS to get service models into the market, because are only, admittedly big, but only cover a part of the value chain.

Speaker 2 13:57
The part on the enterprise implementation side, on the customer side, the systemic integration is extremely important, so sort of the ordering systems, forecasting, quality management at the customer, traceability.

Speaker 2 14:15
That's why it's
very important, because if you implement Equipment as a Service ideally, as a customer, you only pay for the quality fit, manufactured part or for your end result. That's why you need a very, very strong traceability, trackability and trackability down to the parts.

Speaker 2 14:33
So that's what I would say, customer side, so manufacturer side, integration in the complete process along the value chain and on the customer implementation
side I would say the systemic integration is important.

Speaker 2 14:49
What are the factors for a successful EaaS implementation? I would like to illuminate both perspectives if possible. Yes, what I just said, long of the value chain and that it is just integrated into the existing system landscape.

Speaker 1 15:03
Okay. What implementation hurdles exist? You usually have quite a zoo on the client side in

terms of the system landscape. You have everything from Excel to SAP. That makes integration on the customer side difficult.

Speaker 2 15:22
You have the merging of different players, you have technology, machine, insurance, finance, now four examples. You have to bring them together somehow on the manufacturing side.

Speaker 2 15:32
That makes it complicated and then in the long run to understand these risk models. So now if you're going to bring in the risk of a breakdown in your Equipment as a Service offering, you need a sense A.

Speaker 2 15:47
What is the probability of a breakdown and B. When? What is the financial implication of that breakdown? So, at BMW for example, manufacturing plant, BMW puts between 300 and 700 euros per car manufactured, depending on the type on the balance sheet as a provision for equipment breakdown.

Speaker 2 16:07
With the three BMWs, that's 300 euros, with the Seven BMW it's 700 or 800 euros. You have to understand that before you go into risk models. Because if you offer Cooker as a Service or Robotics as a Service, you might not know per se whether your three-series or a seven BMW will be built.

Speaker 1 16:25
So this process understanding at the customer is really important. And how do implementation projects differ among machine builders with a high level of digitization or low?

Speaker 2 17:02
Yes, the process integration becomes significantly easier. So, two moral points. One is if you have a digital PLC and access to the PLC, you have an extreme advantage. But that's extremely difficult because the machine tool -controllers usually don't come from the manufacturer.

Speaker 2 17:24
So Trumpf and many of the CNC manufacturers all use a Siemens PLC. And Siemens kind of charges you per data point that goes through that PLC. That's kind of a conflict that you have there because you just can't pull out that much data at all because you're breaking your commercial model down the back. There are some manufacturers who go so far, but only the big ones can do that, to build their own controllers. So that you have full access to the data. So, there you have a real digitalization break in the data flow, so to speak. The more information you get, the better. On the process side, it really makes an extreme difference, because you then have to completely integrate the spare part into Equipment as a Service. And if that's not digitized, you can't automate it. So, here's an example where you can see that a high level of digitization can make a real difference in the deployment and in the operation.

Speaker 1 18:33
Then exactly the same question, how do implementation projects differ at the machine builder with a high service share versus machine builder with a low service share?

Speaker 2 18:45
Yes, you rather have a big internal hurdle, because you then sacrifice your service revenue, which is significantly higher, to a certain extent in order to get Equipment as a Service into the market. So, we had a manufacturer as a customer at relayer that kind of had 90 percent service. Then you cannibalize to a certain extent. So, you for the implementation it has no difference. But for the appetite to tackle such a topic internally, to sacrifice that margin, it has an extremely big impact. And how do you think the risks can be minimized in implementation projects. Spend a lot of time understanding the end-to-end process of word creation. And digitizing it, going in with more time, so to speak, makes a huge difference.

Speaker 1 19:51
How do you see the role of MVP approaches in EaaS implementation? On which side? Yes, so also like both perspectives again, maybe starting with the vendors. Yes, difficult because the implementation per se is actually not that technologically challenging.

Speaker 2 20:15
What is the purpose of an MVP? A technological feasibility. I don't think technological feasibility is a hurdle yet. I think commercial health is more the issue.

Speaker 2 20:30
So how do you do a go -to -market? Where do you pull your margins out of? Spare parts, spare part management, then the whole issue of consumables, having a better understanding of that is much more important.

Speaker 2 20:44
Actually see no reason for a technological MVP, but invest a lot, a lot in understanding the value chain and how you monetize that. So now at Trumpf, again as an example, we brought Göckner into the Equipment as a Service project because Göckner is the third largest steel trader in the world and 90 percent of the Trumpf customers who then used Equipment as a Service were served with steel and we were then able to offer this quasi order to build or order to produce systems, which would not have been possible if Göckner was not part of the equation.

Speaker 2 21:24
I think that's much more important than technological feasibility. And how do you assess an MVP deployment in the context of an organizational feasibility? Yeah, I wouldn't call that MVP because you have Organization follows Function, so if you have a commercial model that works, you build the old corporate structure that maps that.

Speaker 2 21:47
There I do not understand one reason to make an organizational MVP. I don't do a test organization and say, let's see how to best sell Sales there or how Sales best approaches in the market.

Speaker 2 21:59
So there I would even, that's considered moronic, if I may say so. It makes no sense to test organizational forms. And if you see that in the sense of a digital innovation unit testing appropriate different models for a manufacturer for example, are you going to stick to your

assessment on that?

Speaker 2 22:22
Organizational testing. Right. So, I have now, I have 15 portfolio companies, founded five companies myself. I've never seen anywhere that you test a form of organization or that you run different models in parallel.

Speaker 2 22:41
Does not mean that it does not make sense. It just hasn't made sense to me according to this wisdom until now. Yeah, okay. And then again, concluding on that point, the question is, how have events like the Corona pandemic or the Ukraine war affected the implementation of Equipment as a Service models?

Speaker 2 22:59
Same answer as before. Not at all.

Speaker 2 23:02
Okay. Then, what specific real-world examples of successful Equipment as a Service adoptions on the end customer side are you aware of then? 24/7 Tailor Steel I had mentioned, extremely successful in Holland as one example.

Speaker 1 23:23
Okay. Can you think of any others? Yes, of Switzerland, you could google, because it is unfortunately the name no longer, of Switzerland there is a Trumpf customer, which is on Public Reference, which purchases tooling as a service from Trumpf. Have it unfortunately the name forgotten, we must look, there will not be so many Swiss machine tool builders. Is there one known here from Germany? Heidelberger Druck.

Speaker 2 23:50
Heidelberger Druck, yes. And in the specific case of Heidelberger Druck, what do you think contributed significantly to the success of the project? The fact that it was not a digitization project, but a new, truly established product line with its own Board of Management department.

Speaker 2 24:11
So very, very strongly anchored understanding in the Management Board that flexible service models could be an extremely successful and quasi new sales approach for Heidelberger in a market that is under a lot of pressure.

Speaker 2 24:25
So, that organizational embedding of the importance of this model in the board.

Speaker 1 24:34
Okay, great. Thank you very much. Then I would open up the room for a moment for my colleagues in case you have any additional questions.

Speaker 3 24:45
Yeah, I actually had another quick question. From your perspective or your perspective that I have so, would you say then that the general market is more pushed from vendor -side or

pulled is from the customer side?

Speaker 2 25:04
Yes, is a difficult question, but a good one.
I think it depends on the customer. These small stores, these small ones, I don't think they're educated enough yet to really know what benefits come with it.

Speaker 2 25:19
So from those I don't see a pull-on bigger ones do. So, something like Porsche as an example. Porsche has much of the Leipzig production, they have gone so far, they have made quasi factory service.

Speaker 2 25:33
So also a German success case financed by Munich Re. So, the bigger, and just, sorry for all the anglicisms, but the, the more sophisticated on the finance side, I think, the stronger is the appetite for such models.

Speaker 3 25:48
Yes, absolutely. Can you think of any specific KPIs or incentive models that could significantly promote the success of a project? Yes, uptime and quality have always been the two decisive topics for us.

Speaker 2 26:08
So if you can manage to guarantee the uptime of the machine and at the same time make sure that what comes out of the back of the machine meets the quality standard that the customer is hoping for, then those are the two big levers.

Speaker 3 26:21
Yes, super exciting. Then one last question. Do you happen to have any experience with this, or could you assess to what extent the equipment as a service business model could be interesting for private equity firms, then in terms of value creation and potentially upselling the company later on?

Speaker 2 26:38
Yeah, but there's this one case I had earlier, 20 for 7 Taylor Steel. That's a great example. You see that now in the radiology environment as
well, where the medical equipment costs incredibly much, that there are more and more service models coming in.

Speaker 2 26:54
And that's exciting for private equity from the financing point of view, but at the same time also extremely exciting for rollup models. So, if you now, as I buy radiology practices, and you have 100 of them, it already makes a difference to you whether you dump 100 times 5 million for such a machine or whether you pay quasi once per radiology run.

Speaker 2 27:14
That makes an extreme difference on your equity time.

Speaker 3 27:18
Would you also say that actually this technology partnership in the pharma - MedTech sector

can also be a very promising and successful step.

Speaker 2 27:31
Yes, absolutely. Yes, also in the energy environment, so quasi batteries, wind farms, all that, where you have relatively steady returns, a good understanding of the uptime, downtime risks, output, there such models lend themselves super.

Speaker 3 27:49
Great, great. Yes, thank you very much.

Speaker 2 28:39
Thank you. All the best. Ciao. Bye. Bye.

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Speaker 2 06:12
Yes, then I would be primarily interested to know to what extent machine manufacturers or customers of machine manufacturers are familiar with such concepts as equipment-as-a-service, pay-per-use, etc.?

Speaker 1 06:32
Machine manufacturers and customers of machines and the concept of Equipment as a Service. So, let's start with definitions: What is Equipment as a Service? Is this the topic of entry leasing for hardware or what is it?

Speaker 2 06:45
Yes, that ultimately means that the provider of the machine remains the owner. Is there a Leasing Plus model, Flexible Contracting, renting to the customer accordingly and combining that with, yes...

Speaker 1 07:02
...what Relayr does with the Trumpf? Trumpf is a manufacturer of high-end production machines, they offer this "as a service", so to speak, "machine-as-a-service", not equipment, but machine-as-a-service, including an internal IoT solution for predictive maintenance, for example.

Speaker 1 07:21
So that's 50-50. 50 percent are familiar with it and 50 percent are not in the market. And what are the reasons for the low level of awareness of EaaS? Yes, because German SMEs haven't really dealt with the topic of digitalization in detail yet.

Speaker 1 07:46
And above all, the truth is that many companies still have a very hybrid production fleet: Partly very new production machines and partly really legacy machines, 50 years old, where predictive maintenance is just a foreign word. These are the reasons.

Speaker 2 08:04
I see. Okay cool. And who do you think are the typical customers or providers of such services in mechanical engineering?

Speaker 1 08:14
This is Trumpf, for example, which provides high-end production machines, together with the Relayr in the backpack, an IoT solution. Or we did this with Eaton, formerly Klöckner-Möller, where we also offered machines, i.e. new machines, with an inherent predictive maintenance solution, for example. These are the classic providers. A recurring requirement from customers and suppliers is of course to implement predictive maintenance because there is a difference between seeing a ball bearing that needs to be replaced in advance, which then costs 15 dollars, and having to replace an entire production machine worth 130,000 dollars because it has simply broken down.

Speaker 1 09:08

You can permanently monitor how the components need to be replaced, and if you don't have that, and especially the old machines that are already 20, 30 euros old don't have that, then you can't monitor. This is an issue of cost savings.

Speaker 2 09:23
So, these are customers with less complex or complex machines and very highly digitized, or how would you describe them?

Speaker 1 09:35
Yes, even less. So, at the moment, 80 percent are still genuine legacy production machines, as I said. New production machines are only gradually being purchased, especially when companies set up new production hubs.

Speaker 1 09:51
But Germany still lives very much from an old legacy park. And the production machines there are over 20 years old. And that's the challenge at the moment. You can't make them fit with a retrofit solution.

Speaker 1 10:02
That's totally difficult because... Because there are 150 different types of protocol, especially when it comes to production machines. This means that you have to bring the data that you extract, the predictive maintenance data, to a backend system via a protocol, via a gateway.

Speaker 1 10:22
And there are 150 different types of protocol, from MQTT to UDP and so on, Modbus, etc. And that is simply the technical challenge of bringing this to the market as a retrofit solution. We have noticed this time and time again. Nothing is standardized, it's very diversified.

Speaker 1 10:42
And that's the reason why we don't actually make much headway in the retrofit sector. Not even the other providers.

Speaker 2 10:48
Okay, cool, thanks. Then, how high, or low would you estimate the demand for such solutions from a provider of customer perspective?

Speaker 1 11:00
Yes, I've just said it: the demand is there, but the issue is that the willingness to pay is relatively low, sometimes not there at all. That means you always have to go in with value-based pricing. Basically, you have to explain that if you bring this solution, the predictive maintenance solution, into your production fleet, you will save so many euros. You have a return on investment after X months.

Speaker 1 11:24
Even that, even that leads many companies to say: "Yes, but we have, why should we invest now?" Yes, and then we have to explain again: "There's a digital pact, you'll get subsidy money." We have also set up a team for this, but there is still a certain amount of sleepiness in the market.

Speaker 1 11:41

So, the need is there, the interest is there, but consistent implementation is not yet there. The topic of ESG requirements, namely that you have to reduce CO2 emissions, is only now slowly gaining momentum. This applies to every company, including SMEs. This applies from 25 in the amendment to the law and requires reductions of up to 30 percent. You then have to make CO2 emissions measurable and that includes making your production machinery measurable. And yes, things are only just starting to move.

Speaker 1 12:10 In
other words, I would say that the topic of ESG, i.e. sustainability measurement and requirements, will get things moving from 25 onwards.

Speaker 2 12:18
Okay. And would you now assign these statements to both customers of mechanical engineers and the mechanical engineers themselves? Or would you differentiate between the two?

Speaker 2 12:41
Yes.

Speaker 1 12:42
And there's a bonus-malus system behind it, as you know. In other words, it's not just a requirement that I have to somehow reduce CO2 emissions by 30 percent by 2030, but it's regularly reviewed.

Speaker 1 12:53
So, there are audits. And if you can't prove it, there's a bonus-malus system. So, you have to pay a fine of up to 1 million euros. That can really hurt a small to medium-sized company.

Speaker 1 13:05
That's why we believe that from 25 onwards this will be extremely attractive for both manufacturers and customers of production machines.

Speaker 2 13:17
I understand. And how do you think you would explain this sleepiness in the market? Why is that?

Speaker 1 13:29
Because, on the one hand, customers are very saturated with their existing business, do not fully understand the interrelationships and the importance of further development. In addition, topics such as location decline, relocation, shortage of skilled workers, energy efficiency, which are only now slowly coming up, but these are the three core topics.

Speaker 1 13:58
And that is the first priority for companies. The topic of predictive maintenance and saving costs, saving CO2, that's the fourth wheel on the wagon. I've just mentioned the first three and that's the reason why the entire SME sector is very much concerned with these first three topics.

Speaker 1 14:16
This is an issue of prioritization.

Speaker 2 14:18
Okay, I see, cool. Let's move on to the specific industries and then machines. In your opinion, which industries are explicitly predestined for the adaptation of such machine-as-a-service, equipment-as-a-service, pay-per-user models?

Speaker 1 14:36
I wouldn't limit it to one industry at all. It's cross-vertical. This is interesting for an automotive via utilities, i.e. everywhere where production takes place. Whether onshore, nearshore, or offshore, it's an issue everywhere.

Speaker 1 14:51
Ultimately, equipment-as-a-service is also a cost issue - due to the leasing model behind it, of course. I no longer have to own and buy the production machine, but I buy it as an "as-a-service" model, so to speak.

Speaker 1 15:06
That means I only have OpEX and no more CapEx to invest. So, this is an issue for all industries that exist.

Speaker 2 15:16
Okay, I see. And we had just touched on this a little bit: What types of machinery or equipment in mechanical engineering do you think are best suited to these types of models?

Speaker 1 15:34
Maybe I'm not a machinery expert enough to evaluate an Eaton or a Trumpf or whatever the manufacturers are called. But ultimately, of course, there has to be a certain business need for me to simply say for financial reasons: I'm not buying any more production systems, I'm leasing them as a service model.

Speaker 1 15:57
And I say that this rethink is currently taking place. Ultimately, however, the question is: how much risk are we willing to take? because there's a difference between buying and owning it myself and being able to manage it and relying on service providers.

Speaker 1 16:12
It's always a risk assessment for SMEs, so it's always a trade-off where each company has to decide for itself.

Speaker 2 16:26
From your experience, can you identify any common characteristics of the machines? For example, were they highly mobile machines? Were they machines that performed certain functions?

Speaker 2 16:42
Were they highly complex machines, were they less complex? What are some of the characteristics that you may have encountered?

Speaker 1 16:52
Take BASF as an example: you have virtually everything from a high-end production machine to a simple metal press. So that's a very widespread. What I always say is: the more

complex the production machine is, the more it makes sense to invest in a digital predictive maintenance solution, because again: a high-end machine like this from Eaton cost 130, 150,000 ten years ago - and the trend is rising. Now you're probably looking at over 200,000. When it comes to a simple metal press for 20,000 euros, you have to think about it: Is it worth the investment to lease it as a service or to buy it? The high-end machines, that's the target market for me, that this is really purchased as a service.

Speaker 1 17:45
That would also be my recommendation to the industry, or that is always my recommendation.

Speaker 2 17:52
And you just described the topic of dependencies. How are they dealt with? So, would you say that these are machines that are more critical in the value creation process or less critical?

Speaker 1 18:09
Also, partly again. Like the metal press example. It's not that critical in itself, but it is extremely critical in the automotive industry. If a production plant comes to a standstill, even for just one hour, you immediately have a sales problem, yes, a production problem and therefore also a sales problem.

Speaker 1 18:29
That always depends on what impact it has and how complex the production machine is. And it also depends a little on how expensive the product is. In automotive, I can only say one thing: if the production lines come to a standstill, the alarm goes off immediately.

Speaker 1 18:47
That's a Prio 1 incident and from minute one the sales ticker goes off about who ultimately has to pay for it. In the automotive sector, everything has to happen hand in hand.

Speaker 1 19:02
If I have a problem with my production because I'm missing parts or because I have a technical incident because a production line or a production machine isn't running...or in the network, for example, many are also connected with fiber optics, then you really have an issue there.

Speaker 2 19:20
Yes, okay, I see. And perhaps lastly, what role does the price of the machine play in the adoption of such models?

Speaker 1 19:31
It definitely makes a difference. The high-end machines from Trumpf cost twice as much at 300k upwards. You might consider leasing it because it no longer has CapEx but OpEx.

Speaker 1 19:44
Very simple: metal press for 20k. You're welcome to invest, but with a high-end machine like this, you just have to think about it. It's more likely to be hot, in any case. We still have 8 minutes, then you have to press the tube.

Speaker 2 19:58

What primary obstacles or concerns do you see in the use of such EaaS models? I have now listed macro drivers and then business drivers, don't be alarmed.

Speaker 2 20:13
You are welcome to answer freely.

Speaker 1 20:19
On the provider side, what do you mean by provider side?

Speaker 2 20:24
So basically, if a Trump is offering that now, what primary barriers does the EaaS have to offer?

Speaker 1 20:36
Yes, that's quite simple. He has to go into pre-financing. He first has to produce the machines, which also cost material. And he goes into pre-financing. You always go into pre-financing when leasing because you have to buy the hardware, and it doesn't matter whether it's a production machine or a very expensive device, for example, you have to go into pre-financing first and then get your investment back iteratively, bit by bit, through these leasing models. In other words, and these are the primary obstacles, you first need a high CapEx budget. In other words, an investment budget that you can use gradually because you are going into pre-financing. That is the biggest obstacle. In other words, you need venture capital or something else, you definitely need a partner who can take this risk with you.

Speaker 1 21:26
Because you also have to plan how many lessees will later transfer the pre-financed capital for the production machine back to me.

Speaker 2 21:37
Yeah, I see, okay, very cool. And do you see any macroeconomic obstacles?

Speaker 1 21:47
No, not really. Just what I said about prioritization: The digitalization of production machines and EaaS is more likely to be number 4. Number 3 is relocation, shortage of skilled workers and energy efficiency.

Speaker 1 22:05
Energy efficiency pays off a little when I have predictive maintenance, because I can also make the energy measurable and incorporate thresholds. But the feedback I get from the market on a daily basis is really about these three topics.

Speaker 1 22:20
The average location has simply become too expensive in terms of manpower, tax burden and energy costs. We are at the bottom of the league in Europe when it comes to energy costs.

Speaker 1 22:32
And we are at the bottom of the league in Europe when it comes to employee costs, which is why we are increasingly considering nearshore again: Nearshore? At least nearshore, not offshore. But nearshore from Germany. Going from onshore to nearshore in production.

Speaker 2 22:49
Yes, I see. Okay. And what influence does an event such as the coronavirus pandemic or the war in Ukraine have on these challenges or concerns?

Speaker 1 23:02
Yes, that's also one of the main drivers for the three priorities I just mentioned. Not the shortage of skilled workers, but the energy crisis. When it comes to energy costs, Ukraine is of course one of the main drivers.

Speaker 1 23:18
And the shortage of skilled workers is just a general issue, that was already the case before corona. That was already the case before corona. So, I wouldn't take corona as the main driver for a shortage of skilled workers. But at the end of the day, as I've seen time and again at the VTI, we have a shortage of 5,000 engineers every year.

Speaker 1 23:39 In retro,
Germany has always been very strong in engineering, automotive, retail, white goods, and many other really innovative things over the last few decades. That has really brought us forward.

Speaker 1 23:53
And now we are dependent on migration, on foreign engineers, because we simply no longer have this engineering culture in Germany. The exact reason for this goes very deep.

Speaker 1 24:07
But the issue is the education system in Germany, the issue of the incentive system, the generational issue with regard to Generation YZ, you are perhaps still the exception with Generation Z. But Generation Z doesn't necessarily have the will to achieve something, to work their way into technical subjects and to take complex degree courses.

Speaker 1 24:29
I think it's a mix of a lot of things that belong together. Corona is just... it used to be very complicated. Corona has also shown a certain vulnerability in the minds of employees.

Speaker 1 24:53
But this is actually no longer such a big issue with back-to-office, but it has had a deep impact on some people privately.

Speaker 2 25:03
Okay, great. Thank you. Briefly about time management, how long do you have left? Well, I'll give you another five minutes, to 42, perfect, great. Then I would now ask the whole thing from the opposite, from a positive perspective, so to speak.

Speaker 2 25:20
So, what do you think are the positive drivers of such "as-as-service models"? Either from a macroeconomic perspective, but also from a company-specific perspective.

Speaker 1 25:35
Yes, you've done a great job of summarizing it down there under 1 to 4. So environmental requirements, that's what I'm saying, with ESG requirements. That means reducing CO2

emissions. Secondly, of course, the fact that capital is no longer available in this form, i.e. these CapEx. What you need now are these OPEX models.

Speaker 1 25:51
And OPEX is ultimately also the driver for leasing models as far as production machinery is concerned. So, the momentum is really good right now. I also keep hearing from the start-up scene that venture capital is becoming less and less, currently due to the outflow of funds and the fact that the industry is also confronted with a very high inflation rate. We have the second highest in Europe.

Speaker 1 26:15
And that also means that SMEs have less CapEx overall and are turning more to OPEX models. And that's why this is just the right time to offer leasing models in the production machinery market.

Speaker 1 26:28
Definitely.

Speaker 2 26:30
Do you think that corona or events such as the Ukraine war have had a positive influence on the adaptation of EaaS models?

Speaker 1 26:41
Yes, because companies have simply become poorer overall, not just the German state. I recently read through an appeal that industry has lost half a trillion, all-in due to corona, the war and so on.

Speaker 1 26:53
Over half a billion, high inflation rate, stock market value of many companies has halved and above all, Julian, it has also shown how unstable the whole issue is for global supply chain management.

Speaker 1 27:12
If you get individual parts from offshore for your production machines or for your products themselves, microchips for example, or industrial magnesium, which has not been available for years or for a while, then you realize that the struggle and the resources for the production machine or production itself have increased enormously for the companies. Costs have also risen enormously and this in turn puts pressure on the EBIT of SMEs. Therefore, less cash, less budget for innovation. That was also a driver.
Partly due to corona, but also because we had to close down entire plants.
in Taiwan due to high corona quotas. But the war also showed that the battle for resources and supply chain costs have increased massively once again, and that greater independence is now being built up onshore or nearshore. I believe that German industry has relied far too heavily on energy from Russia. It has relied far too heavily on medicines, microchips, industrial magnesium - it all comes from China, including Taiwan, and that can have a huge impact. You can also see what's happening right now with the new battery plants being built for electric cars in Germany. You can see that a certain degree of independence, if not a second assembly line, has to be established, because imagine the worst-case scenario: the Chinese march into Taiwan. Then we'd have a completely different conversation here.

Speaker 1 28:44
Yes, absolutely.

Speaker 2 28:46
And then maybe one last question, because I took a look at the Kärcher case. Maybe you could tell me what were the critical success factors in the implementation of this model?

Speaker 1 29:04
On the one hand, of course, it was necessary to build a completely new device, with the vacuum robots as an example. Because the technical architecture of the old robotic vacuum cleaner didn't even have the option of integrating a frame module.

Speaker 1 29:18
And the second thing, of course, was to outline a common go-to-market. What model are you now using to go to market? Are you doing it as EaaS as well? Kärcher offers exactly that, as EaaS. This automated and autonomous driving vacuum robot.

Speaker 1 29:37
And acceptance, because in many companies the discussion then starts: What about accidents? What about incidence and so on? If nobody is sitting on them anymore, but slowly, due to the pressure, the cost pressure, the budget pressure, the pressure to change, many companies are now prepared to accept these vacuum robots.

Speaker 1 29:56
So, it took a little while, like a wave system. But the momentum speaks for Kärcher, and we are extremely proud that we can be part of this success story with our connectivity and our frame modules.

Speaker 1 30:09
Great. Good, arrives.

Speaker 2 30:11
Thank you very much. If you, I don't know if you've noticed, the Flex Factory must mean something to you, right? Yes, I've heard the name. Exactly, I don't know if you've heard of it, there was a paper published three weeks ago.

Speaker 2 30:24 Did
you happen to notice? Nope. It was also about Production as a Service, and I thought it might be of interest to you. I would send it to you because it's interesting that Flex Factory, as we know, will not be continuing its business operations.

Speaker 2 30:42
But maybe that would be an interesting case, because they've already invested quite a lot in it, put a lot of brainpowers into it, but for some reason it didn't fly. I would just send it to you afterwards.

Speaker 2 30:54
Maybe that's an interesting lead.
for you, then I can give something back to the quick hands as a small thank you. And yes, I would definitely be happy to continue networking with you.

Speaker 2 31:06
Yes, that is the case.

Speaker 1 31:07
I'm also rooting for you for your application to us. And I'm looking forward to the white paper. Take care, thank you. Bye.

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Speaker 2 00:15
Great, wonderful. Okay, let's go in then. I've shared the questions here and would jump straight in there. To what extent are machine manufacturers and customers of machine manufacturers familiar with the Concept Equipment Asset Service?

Speaker 1 00:40
Very rudimentary, I would say so far, by and large, of course, you have to differentiate a little between industries and customer segments and also differentiate a little in the regional track.

Speaker 1 00:51
Basically, most machine manufacturers and customers are familiar with the classic leasing financing options, they are also familiar with the classic rental models, but of course they are more concerned with purely financial needs.

Speaker 1 01:12
When we talk about EaaS we talk about other benefits, like security over total cost of ownership, access to latest technologies, updates etc. more integration into workflows and so on.

Speaker 1 01:29
I would say that knowledge is only just beginning to be built up. Most machine manufacturers who work
with this are taking an entrepreneurial approach. We have a few examples where it is already a bit more widespread. In my opinion, Hilti's fleet management is the most advanced that I have looked at so far, and also the most impressive in terms of how it is implemented holistically.

Speaker 1 01:55
Everyone knows Heidelberg, I'm not sure whether that's even closer to a simple payment model, but basically there's already quite a lot of scaling, beyond that there's a lot of pilot status.

Speaker 2 02:13
And that applies to both machine manufacturers and their customers?

Speaker 1 02:19
Yes, I would basically agree with that, with one exception, where customers usually don't know that there
is equipment behind it. That's the whole issue of cloud services. Of course, it operates the infrastructure from some background.

Speaker 1 02:31
No matter whether it's Azure, AWS, or Google. Of course, more and more people are aware of
this, but it's more SaaS.

Speaker 2 02:43
Okay. And who do you think are the typical customers or providers of equipment as a service in mechanical engineering?

Speaker 1 02:54
Two perspectives in one. So, first of all the customers, the customers, that's sorting itself out a bit in the market according to my level of knowledge or where we're just gaining initial experience.

Speaker 1 03:12
But it is interesting that there are a few patterns across the industry segment and across regions. One of them is that listed and private equity-driven clients actually tend to show a stronger interest in such models.

Speaker 1 03:30
Why is that the case? On the one hand, clearly the classic financial issues. I have OPEX instead of CAPEX and even at higher interest rates it's interesting because I can keep the balance sheet small and then of course I can present my return on invested capital nicely.

Speaker 1 03:46
Second point, these companies are more efficiency-driven. And with EaaS I actually also have efficiency gains, otherwise I could go straight back to classic leasing or classic financing. Beyond that, the traditional family-run companies in Europe are still finding it a bit more difficult, but there are also differences there that would still like to have their assets with them.

Speaker 1 04:16
Ownership instead of renting, quite simply. On the provider side, i.e. the typical providers, you can't really say yet, the distinguishing criterion is the willingness to innovate and the entrepreneurial risk-taking of the management.

Speaker 1 04:39
And there again, I think the exact opposite is the case for the customers, that actually the tendency is to look at Hilti, a family-run company, is pushing ahead or now we at (company anonymized) are a bit slow until we get going, but basically, beyond the practical implementation difficulties with the background of a foundation, we are also predestined to do something like this, why, because we are more independent of banks.

Speaker 1 05:11
We can also say that we'll take something on our own balance sheet if we think it's right and don't always have to discuss it with some short-term investors, which I don't want to talk badly about, that also has many advantages, but that's the tendency we see.

Speaker 1 05:28
Beyond that, typical providers, I'm also saying here rather across industry segments, rather strategic decisions.

Speaker 1 05:46 Of
course, in times when the market in many industries is turning from an upswing to a downturn, I have another criterion that can be decisive, but to be honest I don't see it in any

figures yet.

Speaker 1 06:02
And the more expensive the acquisition, the more attractive equipment as a service is, point 1. And secondly, but that's also a bit counter-intuitive, the more marketable the assets are in the used market, the easier it is, of course, as a highly individualized provider that specializes in highly individualized solutions.

Speaker 2 06:31
Exactly, we'll get to that in a moment. Perhaps another question. Can you think of any other recurring requirements, especially on the customer side, i.e. that Capex to Opex is addressed from the demand
side, can we think of any other requirements from the customer side that keep cropping up there?

Speaker 1 06:52
I don't know whether these are already requirements or rather customer needs that can then be addressed with such models. But there is one critical point that I discuss time and again, which customers are not yet able to translate into requirements.

Speaker 1 07:08
And that is, beyond Capex to Opex, I have the issue, the desire, the increasing desire to always be able to use the latest technology, regardless of whether it's a partner or software. So, I have to have state of the art somewhere, the assets that I use there or the solution that I will purchase, usually a bundle of hardware and software, I would always like to be up to date so that I can take all the productivity gains with me.

Speaker 1 07:34
Point 2, in addition to the topics, is really the issue of security via total cost of ownership over the life cycle. And the third topic, which is partially the case, is of course the increasing focus on their own core business, also partly as a result of the fact that they cannot get skilled workers from non-core business processes.

Speaker 1 08:01 For
example, let's talk about offers relating to metrological support. A company's primary goal is to develop and produce its products to a given quality. But it is not their core competence to carry out metrological applications in order to check the quality.

Speaker 1 08:27
The focus is on the design and production of a product, not on the core competence processes of quality assurance, which is why people are, increasingly, naturally more open or have an increasing need to get specialists here, but they don't get them.

Speaker 1 08:47
The next step would then be a request to the provider. Please provide me with an offer that also takes the application into account. And the third step would then be the provider saying, okay, I've understood, that's why I'm offering it as EaaS and no longer just on a man-day basis somewhere.

Speaker 2 09:05
Yeah, okay, cool, I see, thank you.

Speaker 1 09:08
Another important recurring feature for providers. And that is an analogy to the Software as a Service business, because hardware and software merge so closely in EaaS.

Speaker 1 09:22
Offering these new solutions is increasingly a fixed cost-based business. And so that I can react to higher fixed costs in a predictable way, I actually need recurring revenue models.

Speaker 1 09:38
In my opinion, it's actually more of a compulsion, like in the software industry. Today, no software company in the new market thinks about doing a full license model. It doesn't matter, even if the customer's need might still be articulated.

Speaker 1 09:52
I have already moved to
our TeamViewer, 4, 5 years ago. We didn't say much now, of course they also have customer needs, updates, blah blah blah, but with Kern they said, we have tuned out subscription, under the drawer, under the desk they still had a drawer, with non-standard packages for large customers in Germany, but that was it.

Speaker 1 10:16
And in my opinion, the driver is often underestimated, including in the internal implementation.

Speaker 2 10:26
Very exciting. Exactly, I would continue. You can also answer the next questions a little more succinctly because we still have a few implementation questions later.

Speaker 1 10:36
Okay, need for EaaS solution. Exactly. Very quickly, this is a business issue. In principle, I see an extremely high demand that cannot yet be quantified, but because the field has to be shot entrepreneurially, it will take time to develop. In the long term, it doesn't really make much sense to operate traditional leasing if there is also an as a service offering. However, as the industries are relatively slow to change, it will certainly take another 10 or 15 years.

Speaker 1 11:05
The uncertainty factor is rising interest rates and higher capital costs. Because someone always has the cost of capital. The only question is whether higher interest rates will destroy the game again.

Speaker 1 11:18
But basically, looking at the needs that we had above, high demand and optimistic. Industries and machines, we've already touched on that before. So basically, of course,
it's good if I have systems that can also be used relatively cheaply after a refurbishment in the secondary market. In other words, where I don't have such high customization costs.

Speaker 1 12:12
Although it can also be said elsewhere that the pressure to modularize special machine construction is naturally increasing.

Speaker 2 12:19
Mhm.

Speaker 1 12:19
Very clear topic. What else pushes adaptation? Wherever the machines go into the customer's non-core processes. In other words, a machine that is located directly in production, such as DMG Mori.

Speaker 1 12:45
But it's still a bit more difficult for them because they have to place something like this to keep the service providers out. But this is of course a core competence of most customers who say we are the experts.

Speaker 1 13:03
But if I'm surer
of the quality
now, it's actually easy, it's more likely that the manufacturers are still blocked.

Speaker 2 13:12
Yes, and do you have any specific industries that you think are particularly interesting for equipment as a service?

Speaker 1 13:23
From my experience, I would say that the measurement technology really is. Definitely. If we think
quickly outside the box, even in medical technology there are a few hurdles of a regulatory nature that are more difficult, but the pressure to optimize and consolidate is increasing.

Speaker 1 13:41
So all the medical technology, in my eyes too. A doctor wants to operate. It will take a little longer for public institutions to catch on. Once you understand that, I can imagine that it will become a mandatory requirement for some suppliers. What other
industry will come in? I don't know, otherwise the automotive industry.

Speaker 1 14:18
If we look
at the test load of this world, I will have to think again. With pleasure. So, IT industry, of course, but it's running.

Speaker 2 14:36
By regulations in medical technology, you are referring to tendering regulations, for example.

Speaker 1 14:44
We have different fields. Firstly, the classic procurement system in the public healthcare sector. However, this does not apply to the entire private healthcare sector. And secondly, of

course, high demands on application security.

Speaker 1 15:03
And then you have to say clearly who is responsible for the OPs? I don't know if that has been clearly explained everywhere.

Speaker 1 15:15
And the topic of updates, that's a key promise, the models, is that I can work on the latest technology every time, is not so easy either, because I usually have some kind of auditing processes in the background.

Speaker 1 15:33
This is also difficult for mechanical engineers, who in turn supply medical technology manufacturers. This applies not only to the healthcare sector as a customer, but also to the mechanical engineers who produce instruments, knee joints, auxiliary joints, etc.

Speaker 2 15:52
Okay, exciting. Then we come to the challenge and consider what primary obstacles you see on the provider side when using equipment as a service models.

Speaker 1 16:08
Very, very, very good point. I've just come from the discussion. Internal understanding of new business models. That it really is a business model, not just an alternative financing model.

Speaker 1 16:22
And the understanding that I'm going from box selling to a contract-based business. I always say that we are now playing the new Microsoft Azure. Understanding this is very, very difficult.

Speaker 1 16:38
Point 2 are we even able to deliver the service promises because I'm actually selling a service level agreement, even if I don't call it that yet.

Speaker 2 16:50
Mhm.

Speaker 1 16:51
Point 3, internal processing in the ERP processes, that's a classic. Point 4, sales, must of course be set up completely differently. These are the main points.

Speaker 2 17:02
Okay, exciting.

Speaker 1 17:04
Point 5 is financing the assets. Then you have to switch to managing assets yourself.

Speaker 2 17:11
Yes, and you see, if we now go one level higher on the Macro -level, inhibitors of this model, if you look at it according to the typical somehow market competition, technology, regulation,

demographics.

Speaker 1 17:26
Now let's just go through the points from top to bottom. Brand competition, more of a push factor than an inhibitor. Technological trends too, why?

Speaker 1 17:40
Because I can install more and more updates on the software side without having to replace the hardware asset too quickly, at least on average. Or with firmware upgrades.

Speaker 1 17:56
All the AI applications that everyone is talking about now, there is huge potential behind them with the data that is generated. That is also more of a push factor, why? Because I need models that are always up to date and that I can map.

Speaker 1 18:11
A regulatory environment is time-delaying, but not preventing. Demographic trends have a positive impact because I'm getting fewer and fewer skilled workers. So, on a macro level, it can actually be a showstopper that I'm simply in an environment where rising interest rates will be difficult.

Speaker 1 18:32
And deglobalization, that I'm just not sure in some regions anymore. I would make that point five and six and that could really be a showstopper. At least deglobalization, that I say some regions just don't go with a model like that, too risky for me.

Speaker 1 18:49
If some communist bum thinks I'm going back to ideology. And I'll expropriate a few companies again. And finance rising interest rates when I have the cash to do it.

Speaker 2 19:10
Wouldn't the point about deglobalization also be a driver for the acceptance of equipment-as-a-service models, because then people are more likely to refer to such models from a near-shoring area instead of off-shoring?

Speaker 1 19:28
so to speak, a key point to the market and competition, that then actually more expensive providers somehow source locally again, or what do you mean?

Speaker 2 19:35
Yes, so if I move away
from having things produced in China, so to speak, I'm more likely to fall back on equipment as a service offers from closer to home, which are cheaper, for example.

Speaker 1 19:51
Yes, but it still tends to be riskier. Because the more similar the markets are, the easier it is to manage these portfolios. And at the end of the day, it's like an insurance business. I'm building up a huge portfolio and assets that I can do deals
with myself and that I can transfer back and forth between countries more easily.

Speaker 2 20:12
Okay, I see. And did events such as the coronavirus pandemic or the war in Ukraine? influence these points you just mentioned in any way?

Speaker 1 20:23
Yes, I would say Corona is the driver of the bad news that we are finally making progress with connectivity solutions. Ukraine, I would say not directly an effect. It depends on which economic philosophy you follow now.

Speaker 1 20:46
Ukraine - Inflation driver, I think the money printing has driven inflation.

Speaker 2 21:00
Okay, great. Thank you very much. Yes, then we'll come along to the implementation. Maybe you can give us an insight. How does an Equipment as a Service implementation initially work?

Speaker 1 21:12
Then of course I can only give a subjective picture. But in many companies, and my company is probably an example, it tends to be driven from the bottom up. That means that somewhere in sales regions and in connection with a few people who have discovered the topic somewhere in the head boarder function, there is an alliance that brings
it together and says, okay, we know we can get additional customers with it and start bundling existing products and putting them on the market with a subscription contract.

Speaker 1 21:47
What came out of it was, you have to be super pragmatic, that's point B, I actually have to initially get a basic contract approved that I can offer and then I try out a bit with prices, with flat fee versus per use and so on.

Speaker 1 22:05 There are a
few exceptions, they do it top-down and that's the faster way. I think Hilti has also, I know that I'm not in it enough, but when we exchanged ideas with them, they had started bottom up, but after a certain time there was top-down, the directive, we are now doing Premier Fleet Management and that is of course a massive driver.

Speaker 1 22:24
When I get into scaling, I can't get around this top-down approach. But basically, it's more of a step-by-step approach and I have to be lucky to have
a few entrepreneurial people in the company who are willing to run a few loops.

Speaker 1 22:42
We are also currently discussing internally, in one area colleagues now want to do a market study, so quantifiable. My hypothesis is that it won't fly. I really need, even if a customer theoretically clicks on a question level, can you imagine buying something like that, that doesn't mean anything.

Speaker 1 23:00
In one area where we were successful at (company anonymized), we discussed over 60 contracts with customers. And then at some point we realized that the customers were buying,

they were really signing, and they were also getting what they wanted.

Speaker 2 23:21
Mhm.

Speaker 1 23:23
And there are hurdles internally, especially when it comes to changing the business model, so to speak. I have other KPIs. If I manage my business
according to annual revenue and order intake, it's difficult to incorporate financing on my own assets, transformation in sales and marketing is clear, especially if I want to scale.

Speaker 1 23:50 Are there
differences between mechanical engineers with a high and low level of digitization? Probably yes, because the higher, especially if I have digitized my product range, the easier.

Speaker 1 24:06
Internally, processing is of course nice to have. But I think there's a big misunderstanding here. There are always camps that say I need to have something implemented first. I need a fully functioning Salesforce with the latest solutions so that I can get started.

Speaker 1 24:28
That's not true. I can also push it into old ERP systems. It's just a bit more effort, because that's more of a mental hurdle, so to speak. And digitalization isn't quite as important internally, but the better I'm digitalized internally, the more efficiently I can naturally target it.

Speaker 2 24:43
Mhm.

Speaker 1 24:45
We differ in the implementation projects with the low service share, also a good point. You hear that the service share is, on the one hand, easier to implement the model, because the basic understanding is already there, but the higher the risk, because then I usually still have to take the step towards the service level agreement.

Speaker 1 25:05
And with a low service share, the emphasis on the financial aspect is perhaps even stronger. There are
usually higher opportunities because I can then implement service margins, of course, but it's usually more difficult to sell in the market.

Speaker 1 25:26 A
very specific example. Microscope from (company anonymized), which can actually run continuously for 15 years, you don't get very far with customers with the service promise.

Speaker 1 25:39
While, if I now have an application consulting-intensive other business, where I can also drive regular updates with the software that bring something to the customer, even today, regardless of the offer model, is easier.

Speaker 2 25:59
Exactly, maybe to play it short, we've had events like the corona pandemic, or the Ukraine war have had an impact on such implementations.

Speaker 1 26:11
So again, that has to do with the increasing acceptance of connectivity or remote service solutions. I don't think it's changed that much in terms of simplification, but basically a high, whoever it is, low service share.

Speaker 1 26:26
Rather the industries or the segments with a high service share have united the topic once again.

Speaker 2 26:34
So if you can, could you answer the question, how can risks be minimized in implementation projects?

Speaker 1 26:43
Step -by -step -insert for sure.

Speaker 2 26:45
Mhm.

Speaker 1 26:46
With clear gates, where you then start again in case of doubt, the procedure happens in hypotheses, but in a practical environment. In other words, hypotheses that can be verified immediately with concrete contracts or then looped around again.

Speaker 1 27:03
Otherwise, take underlying assets that can be easily marketed on the secondary market, then I have de facto low risk. The third point is to work with well-drafted contracts that minimize the legal risk.

Speaker 1 27:23
MVP approaches, super important in my eyes. I can take another minute for practical examples. I think Hilti is the best example, simply because they had already penetrated the market very well with fleet management.

Speaker 1 27:45
And now take it to the next level and introduce certain software-as-a-service solutions to the market. You can read all about it on the homepage. Modular approaches. Ingenious. You can see Trumpf, Heidelberger, in the press.

Speaker 1 27:58
I think Trump is quiet, even in the beginning still with the model, with the pay per part. But this is the most holistic approach I've seen so far. Super in that regard. And it's being used as a transformation push to transform the core business, even if you're going to be stuck in traditional box-selling for years or decades to come.

Speaker 1 28:15
Nevertheless, they are transforming the business towards what I see from the outside. If you interpret that correctly. Otherwise, there are many hybrid forms between classic financing and new full-service-as-a-service solutions.

Speaker 1 28:30 I think
Siemens Healthineers has already come a long way. Overall, medical technology, GE Healthcare and so on, there is the managed service, managed technology service, they have been doing that for 10, 15 years.

Speaker 1 28:40
So the path to the pure equipment-as-a-service is not far away. I have to say, I think it's great too. And Rolls Royce, I don't even know to what extent that corresponds with today's equipment-as-a-service.

Speaker 2 29:12
Hm.

Speaker 1 29:28
The companies that are in the shop window, I'll say now, like DMG Mori. The core success factor was that the top management gave their all.

Speaker 1 29:46
And that you could
then continue to work
stringently as an entrepreneur.

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Speaker 1 00:09
I would go straight into the questions. To what extent are machine manufacturers and their customers familiar with the concept of Equipment Asset Service?

Speaker 2 00:25
Depending on the industry, but basically, they are very unfamiliar with it and have a rather conservative attitude towards the topic.

Speaker 2 00:37
It is indeed a very consulting-intensive business model, not a product, a business model that is very consulting-intensive, and it is not standard for someone to be able to dive very deeply into the financial world in order to be able to explain one or two questions or advantages and more of an equipment as a service model.

Speaker 2 01:08
That's why I think it's also an issue why it's often considered or not yet pushed accordingly, because equipment as a service is a team sport, which really demands a lot from the entire organization, and many people don't yet see the benefits of really pushing it accordingly.

Speaker 2 01:32
So, yes, there are reservations from within our own ranks that make it a bit difficult, but customers aren't quite ready yet either. There are customers who are very finance-driven and that doesn't mean that they are big ones. There are also a relatively large number of small or medium-sized companies that have a Finanza who understands relatively quickly what is happening and how it can help.

Speaker 2 02:04
But I keep asking myself how we can get
this across in terms of sales.

Speaker 1 02:14
And that applies to both sides, both the machine manufacturer and their customers.

Speaker 3 02:19
Yes.

Speaker 1 02:20
Okay. And who do you think are the typical current customers and providers of equipment as a service?

Speaker 2 02:31
It always depends on a bit. There is equipment as a service and equipment as a service. There are different models, are we talking about fully amortizing models with full financing, fully amortized with balance sheet neutrality or do we only do partial financing, have it somewhere, have it externally financed, have it not externally financed.

Speaker 2 02:55
So for companies that I also know well from circles, from RWTH, where I know, I'm not saying it's successful, but I am saying sell this. So successfully it makes Heidelberg pressure.

Speaker 2 03:10
They do this relatively well because they manage to combine performance improvements with consumables. So not just classic service and equipment, but they also bundle in consumables.

Speaker 2 03:25
It works very well there. But here too, yes, it's not full financing, but partial financing and we have a very flourishing used machinery market, where we can then let the equipment used by the customer flow away if the customer doesn't take it over. And therefore, there is little risk for the equipment manufacturer. Then I know that DMG Mori will do it. Also, they are still relatively early in the game. Asaf, do I know if you know him too?

Speaker 1 03:56
We have also tried to contact you. Unfortunately, we have not yet received any feedback.

Speaker 2 04:01
So Asaf is also very far ahead, they're doing well, but they're still at a very early stage. Then, of course,
you know the story with Trump.

Speaker 2 04:23
That's also equipment, that's a model, but it doesn't work so well. GEA hopefully has its first projects now; I'm waiting for my former colleagues to launch something soon and I know that they are very active in this area.

Speaker 2 04:39
I know that Winterhalter, the dishwashers also do something, more in the, I'll call it the commodity sector, a standard dishwasher, industrial dishwasher, they do something, but even there, they have no financing, they have no sales with the crate or no equipment sales and what comes in monthly.

Speaker 2 05:06
So equipment as a service, or the business model, is not the same as equipment as a service, because the devil is in the detail. As I say, this is a very commercial issue, tax risk, financing, accounting and so on.

Speaker 2 05:30 There's a
lot that goes into finding a model that suits the company. I know, as I said, Winterhalter, they're still doing a bit. There was another cash register manufacturer in the Stuttgart area that actually did quite well.

Speaker 2 05:44
I know that they do
that, and then things are already getting relatively thin in the German mechanical engineering sector from the companies I know.

Speaker 1 06:26

We've just talked about the distribution of such models. When we look at the customers we sell to, what are the recurring or common features and requirements that we encounter again and again?

Speaker 2 06:44
It has to be cheaper. At the end of the day, it always comes down to this point: equipment as a service must be cheaper for the customer than transactional purchasing.

Speaker 2 07:00
So the question is, how do you manage that? I take the same system, the same processes, the same service, how do you make it cheaper for the customer? That's my experience, at the end of the day it always comes down to the price.

Speaker 2 07:15
And of course you have to try to convince the customer with your service. And that's not just the classic feature selling: higher, faster, further better. Rather, many companies promise to increase performance, optimize output, and reduce costs for the customer.

Speaker 2 07:43
And guarantee it. And if the customer performs above this performance level, both wins. Otherwise, until then, the OEM is also obliged to raise the customer to this performance level.

Speaker 2 07:57
And by increasing performance, the customer ultimately also has significant added value. He produces more efficiently, he produces more, he produces at a lower cost and suddenly it becomes interesting for the customer to make a higher investment.

Speaker 2 08:15
And you have to manage that. It has to be cheaper for the customer. Very few customers are prepared to pay more for the same performance.

Speaker 3 08:32
Mh.

Speaker 2 08:32
Why should I? Why should it, there's no point. The investment will never be refinanced and then nobody will do it.

Speaker 1 08:42
Can you think of any other characteristics, perhaps somehow which industries the customers come from, how big they are, are they listed companies, family-run companies.

Speaker 2 08:55
So I can only take this into account from my history, which customers have we spoken to. And the interesting thing is that the customers came from very different areas, i.e. customers who have a certain affinity for the topic, they came from a wide variety of areas and in different sizes.

Speaker 2 09:17
Then I said that it always depends on whether the person sitting opposite

me understands what I'm saying and is commercially fit. Or not, regardless of whether the company is small or large or in which industry they operate.

Speaker 2 09:34
So we talked to municipal companies, for example. Originally, I just asked myself the question, how can you start with municipal customers? The most conservative thing there is, perhaps the church will have been even worse.

Speaker 2 09:54
But it works, there was interest, customers wanted to know more. I know that talks are still ongoing. So municipal companies work, yes, from cities, capitals to villages.

Speaker 2 10:09
All in. They are interested. Not all of them. There has to be a Finanza sitting opposite who understands the subject matter. You have to be able to explain that to them.

Speaker 2 10:23
Not every salesperson
can do
that either, because it's simply different. Selling is different. Then there's also the printing business. There's the flyer alarm, they're interested.

Speaker 1 11:06
If you've just talked about the local level, what kind of machines would that be, for example?

Speaker 2 11:17
Sewage treatment plants or in the area of farm technologies, we have also spoken to customers with 50 animals up to farms with 20,000 animals. There's no one-size-fits-all solution, it's service that makes sense for customers who are like that.

Speaker 3 11:45
Mhm.

Speaker 2 11:46
It makes sense where it is cheaper for the customer.

Speaker 3 11:50
Mhm.

Speaker 2 11:51
But that is independent of size.

Speaker 3 11:56
Mhm.

Speaker 2 11:56
I haven't recognized any patterns yet because, as I said, we've spoken to a lot of different industries and company sizes. We always come back to the point that we have to manage the customer.

Speaker 2 12:12
We want a higher investment from the customer. It won't necessarily be cheaper for them.

Speaker 3 12:20
Mhm.

Speaker 2 12:21
So you could say, dear customer, normally you buy a system that costs 5 million. You use it for 10 years. And now you can tell me, watch out, you're not paying 5 million over 10 years, 500,000 euros a year.

Speaker 2 12:40
And if you don't want it after 2 years, we'll take it back. Could do more. Would certainly be a great offer for the customer. But the OEM thinks it's kind of stupid. Because then he has to think about the machine somehow.

Speaker 2 12:56
So it has to be attractive for the customer, but also for the OEM's bottom line. It is very difficult to show economic growth and to find this sport. and it is very dependent on which Equipment as a Services model I have developed.

Speaker 2 13:14
This is also done very strongly via specifications, right up to the supervisory board. We want our model to fulfill this and this and this. For everything else, you have free rein.

Speaker 3 13:28
Mhm. Mm.

Speaker 2 13:31
I don't know of any industry or company size where people say they are particularly suitable for service.

Speaker 3 13:40
Yes.

Speaker 1 13:40
Okay. Then, how high, or low would you estimate the demand for EaaS solutions from the respective perspective, i.e. from the manufacturer's perspective as well as the customer's perspective?

Speaker 2 13:58
I don't call it demand; I call it potential.

Speaker 2 14:14
Many companies always believe that equipment as a service is the holy ray of profitability. And they would always like to have that part of the equation. But as I said, this is a company-wide team sport task.

Speaker 2 14:36
And there has to be

some change management and a certain willingness to take risks. People very often shy away from that. Risk is first seen as potential and a classic opportunity risk.

Speaker 2 14:50
You see the risks rather than the risks of not doing it. That's why many companies find it difficult to go in this direction. But basically, I think that the demand from the market will increase.

Speaker 2 15:12
But as I said, there are industries that are already a bit further ahead. I know the printing industry because Heidelberg was
simply extremely early
in printing. And does it very successfully. The printing industry is already relatively advanced and no longer needs a certain moment in the market.

Speaker 2 15:28
Until there is a certain level of awareness. Until there is a certain knowledge of the product. And the product is also perhaps perceived psychologically, a certain maturity.

Speaker 2 15:49
Let's see if it catches on, if it's good. And then suddenly the companies that have a subscription machine from Heidelberg will suddenly be successful. They have increased productivity, more cost-efficient production and so on.

Speaker 2 16:02
And suddenly everyone wants it. Yes, and you have to get to that point. And then markets are also penetrated. But if companies are simply reluctant, you get to that point.

Speaker 2 16:13
Because if companies see the risks of the model rather than the potential that the business model has, you will never get to that point.

Speaker 1 16:26
Yes, I see. And if we now think about the industries again, you've just touched on this, but are there perhaps industries where equipment as a service adoption is more likely to succeed than others?

Speaker 2 16:49
I wouldn't say so, but that may also be because I only know certain parts of the industry. And the branches of industry that I know, I would say no. So, I can't say it works better here.

Speaker 2 17:07
Logically, these are often customers who already produce very efficiently anyway, i.e. the hypothesis is accepted and implemented. Equipment as a Service offers must be financially attractive for the customer.

Speaker 2 17:24
So how do they become financially attractive? By getting
machines more cheaply, but that means that you somehow cut into the OEM margin, they

don't want that, very stupid.

Speaker 2 17:43
Or ideally you earn both. In other words, I have to save the customer so much with my Equipment as a Service offer through additional process optimization that the higher investment is also financed.

Speaker 2 18:01
And beyond that, the customer keeps the gains and that's good. And if I manage to get the customer there, with my solution, with my consulting, digital service, AI system control, whatever, then they will do it.

Speaker 2 18:19
Then it's interesting for the customer, because suddenly he has productivity increases that refinance the entire investment. And then it's also interesting for the OEM. However, if I have an efficient customer, then the potential that I can get up here to refinance the equipment is correspondingly smaller.

Speaker 2 18:37
Then it becomes more difficult. But even then, it's not a blanket statement that large companies are more efficient than small, very small companies that do what they do very successfully. And a customer must have a certain potential to develop in terms of processes and performance.

Speaker 2 18:57
And if that's there, then equipment as a service also makes sense.

Speaker 1 19:00
And are there any industries you can think of now where there is still a lot of potential for efficiency? All of them.

Speaker 3 19:11
Hm?

Speaker 2 19:12
I think they all have enormous potential. Automotive has grown relatively far over the years, over the competition, but basically everyone has.

Speaker 3 19:26
Mhm.

Speaker 2 19:29
I think there are plenty of playgrounds and companies in
many industries where equipment as a service makes sense. There are top performers everywhere with medium and low performers. We are there in all industries and are dividing up the field.

Speaker 2 19:53
There are in every industry, as I said the top performers are out of range so far, but even there, it depends on the model.

If my model says, dear customer, I'll sell it like a car lease works, very blunt car leasing.

Speaker 2 20:13
Why do companies do that? Because I can sell a car for 100 or I can lease it for two years for 25 and then sell it for 80.

Speaker 2 20:34
Then I have 25 plus 80, I have earned 105. Then it makes sense. But if we always have refinancing in mind, I have to refinance the investment for the customer, then there are certain criteria that have to make sense for both the customer and the OEM.

Speaker 1 21:02
Okay, I see. And if we break that down further to machines, what types of machines or equipment do you think are best suited for Equipment as a Service models?

Speaker 2 21:17
Standardized assemblies with large quantities. The issue is always what happens to the system when the Equipment as a Service contract ends.

Speaker 2 21:33
Again, depending on the equipment as a service model, there are different options. Basically, depending on the model, I may find it better if the system stays with my customer.

Speaker 2 21:50
Or I can say, it would actually be cool if I could buy out now, they can resell profitably, would earn from this resale and place a new machine with the customer. I've just dismantled the old machine.

Speaker 2 22:09
Of course, if I'm
very much into customizing, I want the system to stay with the customer and the customer then takes it over. Yes, depending on the equipment-as-a-service model, the customer may or may not have a purchase option.

Speaker 2 22:26
That's the issue, but there, if it's customizing, I want it to stay with the customer if it's a standard business. Then it makes a lot of sense to try and place a new one. With new features, performance improvements, etc. And I can simply buy out the old machine and sell it to my customer in Thailand.

Speaker 2 23:07
That happens quite often, I add them to a used machine market and make money again. If I have a thriving used machine market, I want, in most cases, to be able to buy the machine back and sell it on.

Speaker 2 23:26
If we are
very much in a customizing environment, then of course nobody wants to hold out their fingers and then pull the machine away. One of the GEA segments is breweries.

Speaker 2 23:47
Now we're putting a brewery at the customer's site.
That would never work as equipment as a service. But now we're going into a model, like a printing press from Heidelberger Druck. There are also customizations and adaptations, but there are actually standard machines. You can do a lot with them.

Speaker 3 24:18
Mh.

Speaker 2 24:19
And there are certain models that are in high demand.
And if I only release these certain models and series for Equipment as a Service, I can be sure what I will do with the machine at the end of its service life.

Speaker 2 24:35
And in principle, if I want to flow into a used machine market, then I have to work with standardized machines. If I want the machine to remain with the customer, then we are talking more about customized solutions.

Speaker 2 24:48
The question then is whether equipment as a service makes any sense at all.

Speaker 2 25:06
But as an OEM, I always bear the operator risk and the availability promise. That has a completely different risk.

Speaker 1 25:50 That's
a good point you just raised. I would like to pick up on that. Can you think of any other challenges or obstacles at company level, both on the supplier side and on the customer side?

Speaker 1 26:03
We can start with the provider side, because we've already made the point that the risk is then transferred above all. What else is there? Well, you're welcome to take a look at the points here, if that's the case.

Speaker 2 26:19
So there are three or four things that need to be in place for equipment as a service to be developed successfully in a company. It needs a certain strategic relevance and senior management that also demands the topic, not only from the business development departments, but also from the product managers and divisional teams.

Speaker 2 26:43
Without a strategy behind it and without and not just an expression of interest, but we as a company want this. This is my team and you're all joining in now. And if you don't join in, then I'll help you, I'll motivate you to want it after all.

Speaker 2 27:04
Because, as I said, this is a very intense discussion. What is the best model for an OEM?

Speaker 2 27:24
do I want to have it completely on the balance sheet myself, do I want to sell balance sheets, do I want a third-party financing partner?

Speaker 2 27:37 There are a lot of questions that need to be answered
beforehand. And we haven't even talked about any commercial issues yet. Then there are a lot of financial drivers. That was balance sheet neutrality, full financing, partial financing.

Speaker 2 27:55
But also there the question do I want full financing because I don't have a used machine market where I can drain the machine if I have to take it back? Or do I have a thriving market? In that case, it may be possible to work with partial financing, in which case the customer may not have fully financed equipment for five years, but only three years of the latest machine technology. And until the latest generation arrives, I buy it out, sell it on and put the new one in place.

Speaker 2 28:21
Oh there, financial drivers, full financing, or partial financing, but again triggered by the market environment in which we find ourselves. Then of course there is my favorite topic again, tax accounting.

Speaker 2 28:35
How does that work from a tax perspective? The OEM basically wants to generate more revenue with the machine by bundling in
something that the customer shouldn't see because they shouldn't have price transparency.

Speaker 2 28:51 That's the
goal behind it. But it has tax implications in terms of how certain things are to be accounted for under tax law. And there is a certain amount of leeway.

Speaker 2 29:23
Normally, if the machine is broken, then I do a service for money. It's different with service. The customer doesn't own the machine.

Speaker 2 29:52
And have the risk that the system has to work and provide the right of use to my customer. But I have to make sure that the system works, and not just for 24 months. I have to price that in somehow.

Speaker 2 30:37
And then it's just no longer attractive for the customer or I'm aware of it.
I have ten machines in the field. Nine will be fine, one will break.

Speaker 2 30:51
As a company, am I prepared to take this risk? Strategic question. And then everyone simply has to go along with it.

Speaker 2 31:13
Yes, because it doesn't end with the sale, but an Equipment as a Service project accompanies me as long as the project is running. I have monthly recurring payments, I have a service

demand, I have consumption bookings and so on.

Speaker 2 31:30
That also has to be managed operationally. Yes, it has to be accounted for. Invoicing must be automated. If we also have pay per use, then we still have monthly variable payments.

Speaker 2 31:42
Can an ERP system do that? Yes, what logic does an ERP system have to incorporate? Where does the data come from? It doesn't stop at closing the customer contract. It also has to be accompanied by operational processes.

Speaker 2 31:55
Can sales sell this? How do I want to actively market the topic? And then also the topic, now we've sold it, can we map it at all?

Speaker 3 33:25
Mh.

Speaker 2 33:26
Monthly recurring payments, the entire lease, can we get that into our books? Because if we are only used to carrying out standard, transactional sales and now we suddenly have a finance lease, posting liabilities against each other and so on, so that the balance sheet becomes what we want it to be, does it have to be balance sheet-neutral or not and so on.

Speaker 3 33:51
Mhm.

Speaker 2 33:52
Can the organization, can the accountants in Vietnam do that, that we get equipment as a service booked there?

Speaker 1 33:58
What we also heard, is that what the sales department wants? Is that how they want to sell?

Speaker 2 34:10
Yes, that is an issue. How do I get my sales team to want that too? How do I incentivize my sales team?

Speaker 2 34:22
Yes, all exciting topics, organizational, strategic questions.

Speaker 1 34:28
If we take this to a higher level and look at the market level, what do you see as obstacles or drivers for equipment as a service? So, these typical points, Mark's view of competition, technology trends, regulation, demographic trends.

Speaker 2 34:52
I think there is very little. At most there is a market trend, which is that the competition is offering it, and we want to offer it too. The competition is offering it successfully. That is an

important difference.

Speaker 2 35:11 I don't see any
technological megatrends. Equipment Access Service as the preferred model. Regulatory environment may be. But I don't see it yet, but maybe in 10, 15 years. When it comes to the question of ESG reporting. That can already have an influence

Speaker 2 35:47
But here again, the topic is the regulatory environment. Is certain equipment better suited for equipment as a service?

Speaker 2 35:57
Yes, there will be. Green Finance Act. It is specifically about ensuring that only the most efficient energy and resource-saving projects receive better financing.

Speaker 3 36:14
Yes.

Speaker 2 36:27
Then I might have the opportunity to place low-cost equipment as a service product in a targeted manner via a regulatory environment.

Speaker 2 36:36
In the sense of we want to strengthen sustainability and our own economy here.

Speaker 2 37:58
If the funding is there now in Germany, it is not yet there in France, or in Spain or in Holland. So demographic trends are definitely an issue. I don't see that so much now.

Speaker 2 38:14
But I basically believe that equipment service will primarily become established in industrialized countries, simply because a certain level of plant efficiency is required by operators in order to be competitive.

Speaker 1 38:41
Then I would perhaps ask you just now, what influence did an event like the coronavirus pandemic or the war in Ukraine have? None at all. Okay.

Speaker 2 38:53
It was only sales-related until it became more difficult because you could no longer go to the customer and talk to them. As long as it had no impact on the supply chains and availability of the necessary products, it had no influence whatsoever.

Speaker 3 39:09
Mhm.

Speaker 1 39:11
Okay, exciting. Then I would perhaps just ask briefly about implementation, what do you think are the success factors in the introduction of equipment as a service model?

Speaker 2 39:24
When developing the model, I have to involve
the internal departments such as tax law, accounting and so on at an extremely early stage. But I also have to involve the divisions very strongly when creating the model, involve the sales department and also the counterparts, so to speak.

Speaker 2 39:51
Tax, accounting, the lawyers, the attorneys, also the colleagues, the product owners move into this overall business model.

Speaker 2 40:05
I have to get them involved at an extremely early stage. I have to involve them relatively early on, but also get them involved so that they understand and are involved. That's extremely important and I can't assume that the first project I sell will have the same contractual constellation as the 10th and the 50th. That's a model that a company has to learn and be able to digest and adapt. And it also has to change, and what is best will perhaps be found after a third, fourth, fifth, tenth project, whatever.

Speaker 2 40:49
I have to approach it with this attitude. That's here, I'm reading the MVP application. I have to try out one or two models first. And then, logically, I also have to be in a country where this is then managed from an accounting perspective.

Speaker 2 41:37
And I have to incorporate all that when it's booked later. They also have to know, sorry, the first projects have to be done by hand.

Speaker 2 41:45
Sorry, but the feedback you give is what I can bring to a system. And we collectively don't even know yet what the challenges will be. We can estimate many, but we won't find them all.

Speaker 2 42:00
It must have this MVP insert.

Speaker 3 42:08
Mhm.

Speaker 2 42:09
I first need a certain maturity of such a product, Equipment as a Service, that we can still say, now we feel comfortable with it, now we are scaling out fully.

Speaker 2 42:58
That's why the model also needs a certain amount of time. It needs intensive support, also with the idea that the model will change over time.

Speaker 1 43:21
Okay, great. Yes, thank you very much. They were very interesting insights.

Speaker 2 44:05
Thank you very much. I wish you the same. Until then. Bye.

Interview Transcript Participant 24

Speaker 1 00:13
Perfect. Exactly, then I would simply start the questionnaire straight away. To what extent are machine manufacturers and their customers familiar with the Equipment as a Service concept?

Speaker 2 00:25
My answer is that all the major manufacturers have thought about it, which doesn't mean that they offer it. But all the major manufacturers have at least thought it through.

Speaker 2 00:38
DMG Mori in Engel, Käser, they already offer it today. I think it's probably not yet so common among smaller manufacturers of machines and systems. But it's more my gut feeling because I worked in a slightly different area.

Speaker 2 00:57
And I didn't do that much at the level of machines and systems.

Speaker 1 01:06
Okay, yes, exciting. And who are the typical providers and customers of EaaS offerings?

Speaker 2 01:16
Yes, DMG Mori is one. I think they have an offer for milling machines where you pay per hour, I think per hour of availability. Käser Compressor is also what you know.

Speaker 2 01:33
Then the Heller company with its Heller4Use for machining centers. It's quite well known, they also have quite a nice system, with three different tariff levels, depending on how much flexibility you want.

Speaker 2 01:49
Engel has also been offering this for injection molding machines since last year. And then the SMS Group also has a larger system for steel, powder, and manufacturing. It has also developed such a model with Outokumpu.

Speaker 2 02:11
Exactly, those are the five I know. Munich Re, of course, together with Trumpf for laser cutting machines. That's the sixth example I know. And what typical customers are, yes, I don't know, I know the examples more from quasi research.

Speaker 2 02:34
Who would be a typical customer for something like this? Someone who is not quite sure whether the machine can be fully utilized. If someone knows they can use a machine to its full capacity, then they won't choose a model like this, because it's more expensive for the user of the machine if it's used to capacity.

Speaker 2 02:55
So it's more people who are perhaps smaller companies, medium-sized companies. Or larger

companies that perhaps want to protect their balance sheet a little. But I don't really know any specifics.

Speaker 1 03:13
And on the provider side, what could be recurring features?

Speaker 2 03:27
So I think it can be anyone. It's more a question of why you do it. One reason for such models could be financially driven, that a producer simply could not afford or finance a machine.

Speaker 2 03:45
He either doesn't have the money to buy it, but he can't get it from the bank because he might not be bankable. Then he resorts to a model like this because equipment as a service is actually also a financing service that is offered to you, then you get a machine and only then drive it for the actual use.

Speaker 2 04:06
And don't have to put a lot of capex on the table beforehand. That could be an argument, and it applies more to these smaller companies that are not as financially strong, but also to young companies that have not been around for very long, that do not yet have three or four years of financial statements.

Speaker 2 04:26
So that's one motivation, financially driven, another motivation, and that tends to be with the big players for such a model. It could be that they hope that the asset producer, as we call it, i.e. the machine and system manufacturer, is actually better at operating the system or, above all, maintaining the system, so that they expect additional efficiency and less downtime than if they were to do it themselves.

Speaker 2 04:55
You don't necessarily need an EaaS concept, a maintenance contract would actually suffice. But that could be a way of saying that you put everything in the hands of the manufacturer and then they somehow do a better job than you, for efficiency reasons. Or that he wants to shorten the balance sheet.

Speaker 2 05:21
When you buy a machine, it's on the balance sheet, but it's on the assets side of the balance sheet as an asset. If you were to choose a leasing solution, you would still have a so-called right-of-use asset on the balance sheet, i.e. the fixed leasing payments, which also end up on the balance sheet, so to speak.

Speaker 2 05:48
And that is the advantage of such as a service models, that ideally there are no or few fixed payments. This means that the balance sheet of the user, the producer, is spared. Of course, the balance sheet of the asset producer is also spared, which is a challenge, but it could also be a reason to say that you want to protect the balance sheet.

Speaker 1 06:12
Yes, exciting. Then maybe again, yes, how high, or low would you estimate the demand for

EaaS solutions?

Speaker 2 06:41
I can't formulate a concrete answer to that, to be honest. I see a need, a huge need for such solutions at this small company, also from my time at Flexfactory, they all have the problem that they can't finance it.

Speaker 2 07:00
So you can probably look up the figures, how big are such young, growing companies that have only been on the market for two or three years, and make an estimate of what the potential market for them is?

Speaker 2 07:14
So they are 100 percent interested in such solutions because they naturally need to conserve capital. I can imagine that medium-sized companies are also interested, because they can only grow by building up production infrastructure, and sometimes you want to grow more than you have cash available or financing.

Speaker 2 07:43
I can also imagine them doing that. But there's also often a mindset that they want to own the machinery themselves. And then with the really big ones, I think I see the demand there as more of a niche product.

Speaker 2 07:59
They are such big players; they have their own maintenance teams. They want to have some of this in their own hands. They don't want some external machine manufacturer to have access to the system and the data.

Speaker 2 08:17 I
can imagine that they are still the most difficult to convince and that there is a small market in this group, but it's more of a niche market.

Speaker 1 08:30 Are there
any sectors that are particularly predestined for these models?

Speaker 2 08:43
I don't think so. Basically, it is more important that the machine is a fairly standardized machine, so that the machine and plant manufacturer can quickly dismantle the machine if it is not used at all and sell it elsewhere, so that there is a second market for it. It must not be a specialized machine. But basically, if you look at a laser cutting machine, you can use it in almost any industry. Maybe it's more in the discrete industry than in the continuous industry now because there are more specialized machines.

Speaker 2 09:26
But basically, I don't think there's a restriction on the industry necessarily.

Speaker 1 09:31
But are there perhaps industries or sectors that are further along than others?

Speaker 2 09:46
I don't know.

Speaker 1 10:06
Then I would like to go into the challenges or obstacles of such models, both on the customer and the provider side. Starting with macroeconomic drivers.

Speaker 2 10:35
Yes, another one that comes to mind is the turnaround in interest rates. For investors like Munich Re, that was a motivator to enter this business model, especially in these times of low interest rates. An insurer or even funds like pension funds want to generate a return.

Speaker 2 10:57
So an insurer actually has two revenue streams. One is through the premiums of the insurance contracts. And the other is simply good investment of money.

Speaker 2 11:23
And pension funds too. And they all actually want to take very little risk, but now that bonds have brought virtually no return, they have all gone into alternative investment activities.

Speaker 2 11:44
And that's where Munich Re came from, that they had founded a collaboration with Trumpf and wanted to offer laser cutting machines as a service. So, for Munich Re, it's a kind of investment opportunity to generate a return.

Speaker 2 12:00
Now with the turnaround in interest rates, reinsurers or pension funds, infrastructure funds, they are going back to traditional bonds. And that hasn't helped the whole issue because, in my view, a lot depends on how the investment is financed.

Speaker 2 12:20
And in the end that killed FlexFactory, I would also say, because Munich Re said, well, they don't really want to invest in production anymore.

Speaker 2 12:36
Otherwise, yes, I'm not familiar with the regulatory environment, and I don't have anything specific, the data issue is always one, it's probably everywhere. Everyone probably says to you, how do you make sure that the machine data is stored and secure by the asset producer and the machine manufacturer. Because that's data that belongs to the customer, you can use it to draw conclusions about how well things are going with the customer, is the machine being used to capacity, that's an indicator of how well things is going with the customer.

Speaker 2 13:12
Demographic trends, I don't know if I see a strong connection there. So that's very far-fetched, and saying that society is ageing, more automation, that's why you need more investment, and for that you need alternative financing solutions and Help as a Service solutions, but that's a bit far-fetched.

Speaker 1 13:42
Exciting. Then perhaps once again at company level.

Speaker 2 13:49
Yes, on the subject of financial drivers, I can of course talk a lot about that. This is of course a huge challenge for a company to implement such a model for machine and plant manufacturers, because the cash flow from the sale of the machine changes, so if the machine is sold for one million and the company sells the machine, then it has the one million almost immediately.

Speaker 2 14:16
If you now switch to an as a service model, then you put the machine on the farm and then it produces and then pays with the use. But it takes years until you have amortized the one million and you have to bridge this gap somehow and that's not so easy, but that's why you need a good financing solution.

Speaker 2 14:42
That's why the financial driver is certainly rather negative, it's difficult for a company to map something like this without a partner. The second is, of course, that you have to set up a completely new unit to keep an eye on all the machines that are in the field. A manager then has to make sure that these machines are technically available.

Speaker 2 15:08
That's something that a machine and plant manufacturer might not do or be able to do today. And that requires the development of know-how, then you first have to be able to aggregate data, evaluate data, then you have to define processes for what happens when a machine breaks down. But then you also have to make sure that if the machine is technically available but is not being used to capacity, you have to have contractual arrangements in place to take the machine out of the yard relatively quickly and move it somewhere else. And thinking this through is a challenge for companies and they see the huge complexity involved. It is particularly difficult for smaller, medium-sized machine and plant manufacturers to adapt to this, because it really is a different business model to the one-off sale of plants.

Speaker 1 16:15
Would you say that the corona pandemic or the war in Ukraine had a direct or indirect influence on this?

Speaker 2 16:28
Yes, there are two ways to put it, but I think that one negative is the turnaround in interest rates, which makes it more attractive for investors to invest in traditional products such as bonds. So that is negative.

Speaker 2 16:42
That is the asset producer who is looking for a financing partner to help him bridge this cash gap. In a positive sense, the coronavirus pandemic and the war in Ukraine have led to a renewed demand for more regionalization.

Speaker 2 17:04
If you bring production back to Europe, then you need more automation again, because production in Asia is much cheaper in terms of labor costs. You can't then build the same

processes, e.g. bicycle frame production, in Europe as in Southeast Asia or China, because you have cheaper employees there. You don't have them in Europe, so the bicycle frame would be too expensive. You need highly automated production, which means you face the hurdle of these investments at the beginning.

Speaker 2 17:43
That's a positive effect, it tends to create demand for such models. There was never a lack of demand on the user side at FlexFactory. They all found it super exciting.

Speaker 1 18:02
Would you basically say that EaaS is more of a push or a pull market?

Speaker 2 18:24
I can only estimate with difficulty. I can't say for Equipment as a Service because we simply weren't that active there. With Production as a Service, i.e. at the level of a factory, we didn't even know that yet.

Speaker 2 18:38
That was quite new, so to speak, we're doing it at a factory level. As FlexFactory, we pushed it quite a bit. Although there were also requests from companies from time to time, they were often young companies that didn't have the money and were actually looking for a financing solution.

Speaker 2 18:56
So I think that if you manage to combine such an offer with a very good financing solution, it's more of a pull market, because then all these small companies and young growth companies will come to you very quickly.

Speaker 2 19:10
So let's take a pull market as a hypothesis. If you manage to do that in such a way that the customer doesn't have to make an investment, then you'll get a lot of business from these small companies.

Speaker 1 19:26
Okay, exciting. And maybe to go back specifically to the drivers of these equipment as a service model, what would you say are the drivers on the macroeconomic side.

Speaker 2 19:50
I think we've already mentioned regionalization, so I would definitely put that in there.

Speaker 2 19:58
The topic of demographic trends can be included here, which is also leading to more automation. The topic of sustainability. You can say that such equipment-as-a-service models increase the residual value of the system, which means that such machines and systems remain in circulation for longer, i.e. they are used for longer, are better utilized and thus achieve better raw material efficiency.

Speaker 2 20:28
So you could also say it's a bit more sustainable. More so than if everyone buys their own machine and their own factory. And at company level, I would also say that the driver can be

differentiation from other machine and plant manufacturers, where there is already quite a lot of competition today, including competition from China.

Speaker 2 20:56
And if you focus more on this holistic service offering, it can have a differentiating effect and be an advantage, a positive driver. And if you really do the math end to end, a machine and plant manufacturer can significantly increase its cash in the long term. So, in the example of the machine that is sold once for one million, we have calculated with a few assumptions that you can increase the figure by 50 percent over time through such models, in which he also earns from the financing and links it to other services.

Speaker 2 21:51 In
other words, over the entire lifetime of the machine, it didn't make one million, but 1.5 million, and it also made EBITA. In other words, from a purely financial point of view, it can definitely be worthwhile if you can bridge this cash flow gap.

Speaker 2 22:10
Strategically, this also benefits you, so strategically you naturally have much better access to the customer, because you interact with the customer on an ongoing basis and are directly on site, so you build up a much better long-term customer relationship than if you sell the machine and system once.

Speaker 1 22:36
Exciting. Perhaps the corona pandemic or the Ukraine war have in some way strongly promoted or driven the EaaS models?

Speaker 2 22:59
Exactly, like I said, because of regionalization. Higher automation. Higher investment requirements. Therefore, more as a service model. One negative effect is the turnaround in interest rates. More difficult to find an investor or a financing partner for such models.

Speaker 1 23:22
Exactly. Okay. And then with regard to consulting projects. Are such business model conversions also actively pushed by consultancies?

Speaker 2 23:49
Well, pretty much every consultancy has published a study on the subject. So, I think the consultancies also see that there is potential for such models.

Speaker 2 24:02
But exactly, I have Arthur D. Little published something there. Even Deutsche Bank has published something on asset-as-a-service. Stern Stuart has something out there, McKinsey has something.

Speaker 2 24:19
So actually every consultancy already has something out there on the topic of equipment as a service and also offers advice. We do too, of course, we have written a Production as a Service study.

Speaker 1 24:40
What could be the reason that such projects are actively pushed? Are they particularly attractive in terms of margins or the prospect of follow-up projects?

Speaker 2 24:51
So within consulting, I would say it's a project like any other. In consulting, you always look at what are the future topics that are relevant? How can you help the customer?

Speaker 2 25:02
And equipment as a service has simply been recognized as an attractive topic, that you can help customers with it. And then you try to position it. But that's no better or worse than any other topic.

Speaker 1 25:55
Okay, then in terms of implementation. How are such equipment asset service models initially implemented and what are successful factors for a successful implementation?

Speaker 2 26:17
So for me, the learning from FlexFactory is to realize what are the elements that actually make up equipment as a service? One thing is somehow still quite simple, i.e. what kind of service do I actually want to offer?

Speaker 2 26:35
There is then a maintenance and monitoring service, via the air update services, efficiency optimizations on the machine, you have to contact the machine and system manufacturer, so from their point of view you have to think about what exactly do I want to do and what do I need for it?

Speaker 2 26:57
And then you have to think about how to do it, whether you have to set up an organization for it, a team, a separate unit. That's the second huge issue for me, this cash flow issue.

Speaker 2 27:12
You simply have the problem that every asset that you offer as a machine and plant manufacturer in this model remains on your balance sheet and you had costs for the production of the machine, but you don't get the 1 million sales prices directly. And that can take years to pay off and the more machines you offer in this model, the larger your balance sheet actually becomes. So, it's called balance sheet extension, it inflates and then you have no more cash or can no longer get a loan from banks because they see you have risk on your balance sheet.

Speaker 2 27:57
And that's why you have to think carefully about how you actually want to finance it. And what are the models? If you work together with a financing partner, perhaps you set up a kind of special-cause vehicle, i.e. a project company, something like Munich Re and Trump, which then finances it.

Speaker 2 28:20
That's the biggest challenge for me. And if you don't have a plan for
how you want to finance it and no investor, then you don't really need to start with all the

other things.

Speaker 2 28:32
That would perhaps be the very first thing I would do. Exactly, then okay, degree of digitization. Yes, that's also true. If you think about it, you have to have a machine that is networked, where you can see what the availability is, what are other quality features, what is the run rate or the agility of the machine?

Speaker 2 29:05
You just have to build an IoT platform and then somehow create smart algorithms that evaluate it automatically. But that's honestly all, priority 2 compared to these financing factors.

Speaker 1 32:38
Exactly, and otherwise, when implementing service models, does it make sense to use MVP approaches, i.e. to build a kind of pilot?

Speaker 2 33:01
I think before you build any IoT platforms, I would always do it very pragmatically first with a sensor box and a few Excel files and try it out somewhere to gain experience.

Speaker 1 33:20
And about practical examples, you mentioned a few practical examples in detail, are some of them particularly successful or do you perhaps also have counterexamples that didn't work well.

Speaker 2 33:36
Unfortunately, I don't know. I don't know enough about that.

Speaker 1 33:45
Apart from that, we have a few additional questions, but I would also be interested to know whether you would or could perhaps tell us a bit more about FlexFactory from your side, which might also help us a bit with our research questions.

Speaker 2 34:11
What I learned there. I studied mechanical engineering myself. And we were there with my finance colleagues, who were also very knowledgeable. And what it's all about with such service models is the risk.

Speaker 2 34:24
So who bears the risk in the end. And the new thing about service models is this pay per use. And the new thing is this availability risk or utilization risk.

Speaker 2 34:40
You can also get a machine now and finance it. If you're Porsche, you go to a bank. They'll give you a loan for the machine for a million. The bank knows how to do that, it's nothing new. The bank that's good at assessing the risk, so to speak.

Speaker 2 35:06
So what is the probability that Porsche will go bankrupt and not get my money? That's why a

bank will always ask for annual reports and so on.

Speaker 2 35:16
A bank or especially leasing companies, which are often attached to banks, are also very good at estimating this residual value risk, how much the machine is worth after three years on the secondary market. And that's nothing new.

Speaker 2 35:48 The
third risk and the new one is the utilization risk. And that is a huge challenge, who is actually the best bearer of this utilization risk. And capacity utilization is dependent on technical availability.

Speaker 2 36:05
I think we can still get to grips with that. Machines and system manufacturers can also get a good handle on this via IoT. That can help, productive maintenance and things like that. But I don't think technical availability is the big problem, it's the utilization of the machine with products.

Speaker 2 36:22
And only the customer or the end producer can actually influence that. Because they have a marketing department, a development department. And that determines whether the machine is used to capacity or not.

Speaker 2 36:35
So whether Porsche is in a position to manufacture very good products and also has a market. Porsche can influence that, the bank cannot. That's why the end producer is actually the best owner for this risk, the capacity utilization risk.

Speaker 2 36:51
And whoever it might be is also partly the asset producer. When you say it's a standardized machine. If the Porsche doesn't work on a machine, then I take it off and put it on someone else.

Speaker 2 37:03
I can also imagine that the asset producer can also take a bit of the utilization risk. Because he knows the secondary market extremely well and is an expert in quickly dismantling a machine and setting it up somewhere else.

Speaker 2 37:15
And where I really struggle to see a case is that the investor should take the utilization risk. So, he can take it and of course demand an absolute mark, but why should he take it? He just can't really influence it. And that's been the problem, because flexfactory, especially with factories, where you have completely different risks.

Speaker 2 37:40
And you can't just set up and take down the machine, you can't do that. The machine stands there and can just produce. And we didn't manage to find an investor for it.

Speaker 2 37:55
I think it can work in individual cases, if you have a very renowned producer, like Porsche,

and say, okay, I have a lot of confidence that they will continue to produce in the factory for the next 20 years.

Speaker 2 38:08
That's where it ends up. But these are rather isolated cases. I think if in the masses this model is super, super difficult to realize, especially now with the change in interest rates. That was my take from Flexfactory.

Speaker 2 38:23
Exactly, maybe it will help you.

Speaker 1 38:26
Yes, very exciting.

Interview Transcript Participants 25 & 26

Speaker 1 00:40
Topic Equipment as a Service in the German mechanical and plant engineering industry. And we as a group are interested in what the typical drivers and blockades of Equipment as a Service currently are.

Speaker 1 00:53
And above all, how the corona pandemic has influenced these drivers. And perhaps a short sentence about yourself, one per person. Who are you? Where do you come from? What do you do every day?

Speaker 1 01:08
And then I would go in with the first question.

Speaker 3 01:18
Today, I am responsible for managing international sales financing programs at (company anonymized). Sales financing means promoting the sales of our manufacturer partners in the countries in which (company anonymized) can offer financing solutions, worldwide.

Speaker 3 01:42
I've been working in the financial sector for 30 years, and I studied it all once. Today you would call it a dual study program. Back then, it was called Berufsakademie Baden - Württemberg, business administration - banking. I spent the first 20 years or so at Landesbank Baden-Württemberg and have now been with (company anonymized) for 11 years.

Speaker 2 02:08
I have a somewhat unusual professional background. I am an electrical engineer specializing in information processing. And today I work within (company anonymized) and (company anonymized). I am the Key Account Manager of (company anonymized) for (company anonymized). At the same time, I am responsible for the partnership with (company anonymized), simply because of my professional background.

Speaker 2 02:43
Behind this, of course, are exactly all the topics that you want to address today, namely machine builders and co. And the two main topics that I am doing as a supposed hobby at the moment are precisely the topic of usage-based business models.

Speaker 2 03:00
Which simply comes from the fact that my day-to-day work is about the same, 40 percent I try to be with the customers of our (company anonymized), so on well German industry and field machinery manufacturers and Co.

Speaker 2 03:14
30 percent I talk to my dear colleagues about the question, how does that actually work financially? What do we want to do? What can we do?

Speaker 2 03:24
Is that something for sales financing and? And 30 percent I'm in discussion with engineering

colleagues to ultimately transform exactly what we want to do there to indicate that.

Speaker 1 04:02
Exactly what would be the typical customers and providers of equipment services in mechanical engineering from your point of view?

Speaker 2 04:24
That's where all the misery starts at the moment in mechanical engineering. Perhaps this will also help some people to answer the questions. We need a clear definition of the term to them. What is it? It is simply this.

Speaker 2 04:40
At the end of the day, the question is behind everything that is supposed to happen here. I invested yesterday. At some point, the warranty will expire. Then I may have signed another warranty contract.

Speaker 2 04:54
At some point, there were some problems with the machine. Then I may have commissioned a manufacturer or some service company. And over the lifetime that I have, I have a volatile payment history.

Speaker 2 05:09
The basic idea of all these stories is that I get into a, let's say, predictable payment process, which preferably looks like I have the benefit immediately, for example the machine, the functionality, whatever, and then I pay.

Speaker 2 05:26
The terms that are used, that EaaS is pay per use and so on, whatever, are not protected terms.

Speaker 2 05:39 However,
the word subscription is not a protected term, but it does describe something. The word subscription means that I am subscribing to a cloud solution. A cloud solution can either be a cloud solution provided by a machine manufacturer.

Speaker 2 05:58
We know Netflix as the largest, most widespread cloud solution in the world, yes, I subscribe to it and then I use it. And when we talk about the difficulties and issues afterwards, that's incredibly important, because no financial service provider in the world can finance a subscription model again.

Speaker 2 06:23 In
other words, if I say I'm going to set up a subscription model as a mechanical engineer, then I don't need to talk to financial service providers at all.

Speaker 1 06:35
Okay, super exciting, super important definitions here in advance. Exactly, but then the focus is really on equipment as a service, which is actually the wrong term for subscription.

Speaker 1 06:49
So, if we're really talking about equipment as a service.

Speaker 3 07:11
We have known EaaS in various forms for a relatively long time. We have very homogeneous economic goods here. And I'll give you two examples. Vehicles and IT equipment.

Speaker 3 07:31
Today in the B2B business, someone who buys car fleets for their company, that's almost non-existent. If so, then only for very special reasons in individual cases, but in this area, in the area of mobility, the actual transportation mobility of companies, we have had equipment as a service for decades.

Speaker 3 07:57
Full-service contracts are concluded, and we also work for companies where we have company cars. Service is outsourced from outside.

Speaker 3 08:09
Completely standard. And across the world. The same in the IT sector. No major company today buys computers, printers. I don't even want to talk about copiers. Copiers were actually the ones who started the topic in the 60s of the last millennia.

Speaker 3 09:00
But there are things in everyday use that nobody thinks about anymore. If we now go into the machine sector, then I say EaaS is applicable everywhere. And it's simply a question of time and rethinking.

Speaker 3 09:18
You titled the question with familiarity with the concept. So, there is specifically the capital goods sector. And I will now write that it all relates to somewhat larger assets that are somehow used for technical production applications by end customers.

Speaker 3 09:38
There are considerations, discussions. Everyone talks about it. Everyone has and thank you for your opening words, (name anonymized), with the different definition. Everyone has a different idea behind it. But there is no uniformity.

Speaker 3 09:54
In this respect, I would say that everyone is familiar with concepts. So familiar is much less and conceptually even less. Because that's exactly the point.

Speaker 3 10:11
We'll get to that later. From the manufacturer's point of view, what does that actually mean? It means I have to completely change my going-to-market concept. Today I sell bits and pieces, today I sell boxes, heavy metal.

Speaker 3 10:26 Tomorrow I'm
selling a solution approach. Tomorrow, I sell a service contract. Tomorrow I will sell an availability of applications. And the heavy metal behind it is only an embedded component of

the whole.

Speaker 3 10:43
I'm mixing a bit of German and English now. Sorry for that. That's the topic. Everyone talks about EaaS. Everyone thinks they know it. Fewer people are familiar with it and very few are conceptually familiar with it.

Speaker 3 10:57
On the customer side, of course, everyone dreams of something like this. Because when I invest in the company today. And I'm not talking about IT and cars, which are clear, but really about capital goods, i.e. machinery. Then that's the standard, I either have to buy it or I can finance it. This has become established over the last 100 years. But then I have a fixed cash flow over a manageable period of time.

Speaker 3 11:26
And I only have that heavy metal in my yard. Everything else comes separately. Of course, I dream of having a service with me. Of course, I dream of being able to pay variably, just as I produce.

Speaker 3 11:41
Of course I dream of being all-in in the end. And if I don't produce anything that is my own entrepreneurial risk, then I don't have to pay anything. There are ideas, and of course there are also conditions attached to these ideas, which are certainly indisputable for both sides, both for the manufacturer and for the end customer.

Speaker 3 12:06
For the machine manufacturer, this means that I have to deal with new issues, not to use the bad word risks, that I haven't had before. Because the manufacturer is on the move today, sell and forget.

Speaker 3 12:18
And then I have a 12-month warranty, maybe for a lot of money, I make a service contract out of it, but if you look at it in the light of day, then all incidents arising from regular operation are not covered at all.

Speaker 3 12:32
But I'm not interested in anything else. It's completely different when I do EaaS. It's the same on the customer side, by the way. There's nothing for free in this world, so EaaS doesn't mean it's cheaper for the customer, not at all.

Speaker 3 12:47
It's just shifting on the timeline. The whole thing could even become more expensive. Because the manufacturer and the partners involved pay extra for these special solutions. Extra may also cost extra.

Speaker 3 13:01
Plain vanilla data and plain vanilla costs. But for the end customer, it also means that the end customer must allow more transparency, because EaaS also includes, as we will certainly talk about, certain information that the provider of EaaS or the provider consortium must have

available for EaaS to work at all.

Speaker 3 13:28
Let's just do it very, very flatly using an example, paper use is one type of component of this. If I want to have an omission-based payment, then I have to know the omission.

Speaker 3 13:42
Quite banal. And this is information that today is exclusively with the end customer and the user. And the end customer user must be prepared to disclose information about themselves to the machine manufacturer and the partners involved.

Speaker 3 13:59
And we have, I showed
you the way earlier, many people are talking about EaaS, but there are far fewer people familiar with it and very, very few on the manufacturer side are doing the same for customers.

Speaker 3 14:12
There are a thousand and one ideas from customers, especially when you ask them, what would you like or would you like this or that, yes, few are immediately familiar with it and very, very few deal with it conceptually on the side, which goes hand in hand with a willingness to be more transparent, to open up.

Speaker 3 14:37
So we have to anticipate it, for example, in the past we have always experienced enthusiasm on the end customer side when offering such solutions, but then when it came to what does that mean for me on the customer side, according to the motto we need information from them, then the aversion came immediately, but not, so I don't want to give that out.

Speaker 3 15:00
People are familiar with the concept. You hear about it, you talk about it, not so many people are familiar with it and it's conceptual.

Speaker 2 15:08
If I may add that again at this point, to get a different perspective, because that goes a little bit into the topic, why do you do that at all, what is it anyway?

Speaker 2 15:21
At the moment we have the manufacturers through Covid, because they have addressed this for him, through Covid through supply crises, through non-availability of parts, also through the issue where business will become a completely different one, for example, because the engine is changing.

Speaker 2 15:43
Here's what's happening, the OEMs, the manufacturers are really trying with all their imagination to look for business models and we call it from the bank of bankability, business models where money comes into the till very quickly.

Speaker 2 16:01
So, the customers that they've labeled like this have the exact opposite problem, they're saying I have absolutely no idea what's going to happen here in the future and any business model

that just makes me pay for what I do is fantastic.

Speaker 2 16:23
So, and what (name anonymized) has already indicated, now I have the situation that I am building a model experiment in which I say maximum fund, no risk, because everyone has exactly the same, maximum fund, no risk.

Speaker 2 16:40
So, and someone has to look into your laundry, because someone has to carry it, a machine has to be built, it needs materials, it needs people to do it and it has to be stored and transported.

Speaker 2 16:53
When I come to the customer now, the customer sets up this machine, puts it into operation and runs it for perhaps 15 years, i.e. depreciation period times two, and something happens during these 15 years.

Speaker 2 17:09
And what the normal customer wants most of all is for the 360 to run in three shifts, then he can calculate it best.
And these uncertainties, the worries at the moment are exactly what the colleague is saying, everyone is talking about.

Speaker 2 17:26
Everyone really wants to have it. Everyone finds it attractive. A lot of work is being done on these attractions, everything is being deleted, studies are being written about it. But not a single one of these studies today says how it works, that everyone enjoys it and there is no risk.

Speaker 2 17:48
And that's exactly the oppressive thing that's being thrown into this EaaS at the moment. In the end, EaaS or whatever I call it. I'll leave what my colleague said earlier, I'm no longer getting involved
in sell and forget
as an OEM.

Speaker 2 18:07
But I'm suddenly in a situation where I'm supporting my customer over a long contract period, but over a longer period in the lifecycle of the machine in all phases. And if this model is to work in terms of business management, which is where I support dealers today, for example, then I need to know what happens to the machine during its lifetime.

Speaker 2 18:41
Foresight and reasonable pricing and then I can offer the customer a model where I say, yes, use and have fun. This is exactly the story that partners such as (company anonymized) and all our market competitors have to tell.

Speaker 2 19:00
Today we are all dealing with the question, for example, what is the best control system for a machine? To illustrate

this vividly, yes, the end customer is the fish, the OEM casts the hook, yes, the OEM is the angler, we supply the angler.

Speaker 2 19:22 In other words,
this so-called customer journey, what actually happens to the installed goods? What can happen there? Is it becoming a fundamentally important topic? And then you are right back to the story of how do I actually construct a functional EaaS model?

Speaker 2 19:41
Here comes again what my colleague said earlier, I need data from the machine, I need a basis of trust in the business, I need to get to know the intellectual property that the end customer may demand from the machine, because I have to be able to support you throughout your entire lifetime.

Speaker 2 20:04
So a situation where everything as a service is cheaper than a purchase Well financed with a great service team at the end customer
will never ever work.

Speaker 1 20:18
Yes, super exciting points from both of them. I wanted to take a quick look at the time. You have set one hour. Of course, we've already touched on a lot of topics. Of course, I still have a lot of questions ahead of us.

Speaker 1 20:31
Do you have the hard stop at eleven? Yes. Great, then.

Speaker 2 20:36
a little longer, but we have to...

Speaker 1 20:38
Yes, then I would skip a few questions and really try to stick to the specific topic in the next few questions, because you have now raised many points, Covid, that we will of course be asked again in the further course anyway.

Speaker 1 20:51
Then I would actually look at the characteristics, could you say briefly, providers and customers, and I'd like just two or three characteristics of each. What makes a typical supplier? Is it more of a larger machine manufacturer, are they smaller machine manufacturers, if there are any, and on customers and people, what are the characteristics?

Speaker 2 21:21
The small and medium-sized companies are much more flexible, because, and I already mentioned this earlier when I introduced myself, in the expertise that is necessary for this, if you want to build an EaaS model or whatever you call it, then you deal with technology, with remote data transmission, you deal with contract law, you deal with tax law, you deal with accounting issues, that is, I can only build the whole thing, disciplinary, ready to bring things together.

Speaker 2 22:04
So, and the question of how I solve it technologically so that the machine tells someone something via a cloud, so to speak, is more of a triviality. The brain power lies in the question of what I will offer the customer over the lifetime, how do I price it, what does my model look like, how do I make the model safe, and, at the end of the day, it has to be said quite clearly that the normal OEM has nothing to do with it.

Speaker 2 22:35
I'm approaching a term in which I no longer owe the customer the machine, but what the machine does is a completely different legal situation. And at the end of the day, if it comes to a dispute, I will end up in court.

Speaker 2 22:53
The judge has no idea of what is going on, he will only judge on and from facts, so I have to put a lot of brainpowers into making models audit-proof and legally clean back to the question, the small OEM is much more flexible.

Speaker 2 23:11
He calls his boss, says, come on, look, we've got this, and our tax advisor can add this and blah blah blah, no problem at all. In other words, the models that I support today that are already running, where scaling is taking place, are all smaller OEMs, are all machines that don't go into the core, i.e. that serve secondary processes, so to speak, because customers are still very cautious with core processes, understandably very cautious, and OEMs are even more so because they have to take a lot of risks.

Speaker 2 23:51
So, for example, we have now even developed a roadmap with a community on how an OEM can reasonably approach an everything service model accident free in reasonable steps, so that after a quarter, four, five months at the latest, they have a clean proof-of-concept for it.

Speaker 2 24:13
So, it also includes that is an issue with the driver, it always includes the so-called digital agenda, because I have to do the following, my colleague has already said it so well, heavy metal, I no longer sell heavy metal, yes, I think about what has to go into my model for the operating time, so I also have to have an agenda, what I have in the next five or ten years, because the biggest advantage for the customer of an EaaS model is that he has a machine that has a continuous improvement, that is always evolving with his needs and his possibilities.

Speaker 2 25:08
So, and if I don't have this digital agenda, if I can perhaps mirror it on a digital twin so that I can test again and again whether it all works and whether I'm getting my money's worth, then I'll be shipwrecked.

Speaker 2 25:26
And when I go into some of the big manufacturers, don't laugh, but we see it every day and (name anonymized), you're still reaching in, yes, we see it every day that the sales people, the service people and the developers don't sit at the table with the sales people and they have the say and they have to tell the head of development that this is important for our product and not that you're adding 447 features to it.

Speaker 3 26:09
Add one more thing
to what my colleague said about why I'm convinced that smaller manufacturers tend to have an easier time than larger ones is simply the economies of scale in EaaS, and I'll use the example of my building with an angler, the fish, and the bait.

Speaker 3 26:26
The big manufacturer is more concerned with what the angler likes and what the bait has to look like, what the angler enjoys with it, but with as a service it's actually about what Wild Fish is and of course the interaction between development, sales and service is a very important component I want to answer your question what are the characteristics and requirements or the prerequisites.

Speaker 3 26:52
The prerequisites are that the manufacturer must be able to deliver this comprehensive service part, i.e. he must be able to deal with information and convert it into a service that can be calculated, because I have to say today how much money I will take over a longer period of time for which service if I overbite a piece of metal sale as I have calculated it.

Speaker 3 27:24
Service availability is difficult to calculate in the future. Equally, the question is what happens if I have to intervene. I go back to my IT or car example, if a laptop breaks down, then you have a contract a service contract with your provider that says you have first level support 24 hours a day, 7 days a week by phone that can help you initially.

Speaker 3 27:59
If it doesn't work, you'll have second level support within two hours, a technician standing next to you within four hours and, if in doubt, they'll already have a new laptop with them. Now imagine a machine tool that costs half a million or more and weighs 20 tons if it breaks down, which is always the case.

Speaker 3 28:22
The machine is standing the contract just says the customer pays according to availability and we all know in the manufacturing industry so but on the user side the SuperGau is standstill of the machine standstill of the production, because a machine falls out of the whole system does not work.

Speaker 3 28:40
But I can certainly imagine doing a first level support I can provide remote support that means there are connections if the digital connection exists between a user and the supplier the manufacturer then they can connect that already exists today can look in but if the machine has to be repaired I can't just put a new machine next to it within two hours or even many 20 48 hours that's just not physically possible and that brings the model a bit to the limits of what is feasible because you also have the question of what are features or requirements.

Speaker 3 29:19
The requirements of the customer should be the challenges of the provider the customer says I want to pay according to availability and production, if it does not, then I pay nothing or I have already brought that in and I have already priced that in.

Speaker 3 29:32
I just have to find out where the limit is, how far I can go and which topics are no longer represented and which topics are no longer transferable and you have to agree on that and I have said that again and again, if (name anonymized) will certainly agree that is then again the topic for the larger manufacturer for the quantity manufacturer the large machine builders of this world is rather difficult to get involved in something than for a small one.

Speaker 3 30:22
the scalability, I have to keep my topic going. And if I'm too big, then it won't work. Because there is no one size fits all. In principle, every EaaS case for an end customer has to be considered, designed and subsequently implemented completely individually.

Speaker 3 30:39
I'm often asked and (name anonymized), you're probably asked too, you don't have anything in the drawer. I say yes, there are basic ideas that you naturally have in the drawer, but the actual design is no longer...

Speaker 3 30:51
Oh, one case and then I multiply 5000 cases. Otherwise, I have to look at each case and implement it individually in case of doubt.

Speaker 1 31:01
Yes, great. I would then go straight into the next question, regarding industry and machines. You can actually think of characteristics of machines, such as degree of standardization, degree of mobility, degree of utilization, which are typical for machines that are suitable for a service model.

Speaker 2 31:26
Absolutely. It's relatively simple if you follow up on what (name anonymized) just said. I have to be able to deliver a process, I only deliver the result, no longer the machine.

Speaker 2 31:44
That means I have to be able to take the machine away from the customer if he does what wins, so it has to be fungible. I say it has to fit on the forklift, on the truck, on the crane.

Speaker 2 32:00
It must not be a one-off for the customer, i.e. special machines. highly problematic at this point. The next story is that I have to be able to provide a replacement in the worst-case scenario.

Speaker 2 32:16
In other words, I need machines that don't take several months to set up, but in an emergency, I need to know where I can make this machine available or what I can do to replace significant parts of this machine.

Speaker 2 32:31
Unfortunately, I'm also talking about the forces of nature, which sadly exist. I've seen several machines in floods over the last year. As an EaaS, they're a lot of fun because the customer says it's your problem now and not even a problem.

Speaker 2 32:50
Yes, you mustn't forget that. It's simply what I've already mentioned, machines that accompany a company's core process. Let me take the classic machine tool.

Speaker 2 33:10
I make pistons for the Porsche on this machine tool. So, it's high-end. This means that the question of how I drive the machine tool and how I operate it is the highest intellectual property of the engineers of this company who make it.

Speaker 2 33:30
An EaaS can't do that now, because I have to swap my intellectual property with my partner. I have to share it, because he has to be liable for something. For example, the accuracy of a piston with little effort.

Speaker 2 33:45
He has to be liable for this but has no idea how to do it. So, and these are exactly the things that are completely underestimated today in the design of such topics. It's precisely this issue, what we've said from both sides now, the angler, the fish, the bait and behind the anglers the outfitters, they all have to form a common ecosystem, an ecosystem.

Speaker 2 34:19
And they all have to get involved in the issue of risk and shared revenue. In other words, those who bear the most risk is typically allowed to reap the most profit, because otherwise I can't get this system, this ecosystem of shared risk and shared revenue into balance.

Speaker 5 34:41
Yes.

Speaker 3 34:44
That is an essential criterion, is standardization. You have already mentioned this in your question Implementation. The more it is, the more standardization is required.

Speaker 3 34:56
We should go back to my initial examples, why has this worked for decades with IT equipment or cars, because I can simply replace them. Because yes, they are different, but the basic product is the same.

Speaker 3 35:11
The more individual I am in mechanical engineering, the more difficult EaaS is for exactly the reason that the decision has.

Speaker 2 35:19
So perhaps a concrete example from the automotive industry, which is currently happening in our community. There is a car manufacturer in our community who is currently developing an EaaS model that looks like this.

Speaker 2 35:31
I only buy kilometers and running time. That means my colleague comes to the service in the morning. Yes, he might have an espresso, but no more. Yes, he hands in the key to the

vehicle, gets the key to another vehicle and keeps this vehicle.

Speaker 2 35:54 This means that
he no longer has a claim to a vehicle that is parked in front of the garage yesterday, tomorrow and the day after tomorrow, but only buys kilometers and running time.

Speaker 2 36:09
And the service only lasts one espresso, because after one espresso he drives away with the other bowl.

Speaker 1 36:17
Yes, absolutely. A quick interim question, if we go into specific industries, you've talked a lot about automotive. In other interviews, industries such as MedTech were also mentioned, if you then refer to technology partnerships in hospitals.

Speaker 1 36:31
logically the classic examples, printing presses, Heidelberg.

Speaker 2 36:37
to the others. So just as (name anonymized) said that cars and IT are not a problem, the issue of large equipment, i.e. so-called modernity in the healthcare sector, has been standard for 30 years, because if you see a large blood analysis machine, very much used in Covid right now, the machine only pays for itself in the end via the Reagan's, that puts the machine there, if you have a large MR or CT, that is refinanced exclusively via the DIGs, the billing case portals.

Speaker 2 37:14
Even if I look inside the building, Everything as A Service has been an issue for a long time. I install a building control system, a building management system, I take measurements beforehand, I take measurements afterwards and I say that because the building management system now reduces the CO2 footprint, I am building a model where I tell the customer that I am increasing their CO2 efficiency from year to year, and I get paid for it.

Speaker 2 37:43
Common practice.
When I look at packaging machines, it's like this, the packaging machine is the core principle, you have to be a bit, a bit tricky, where packaging machines, for example, we have such a beautiful packaging machine in one of our showrooms, it's such a classic for Amazon and Co.

Speaker 2 38:06
Yes, the machine detects what's coming in and only then decides what packaging to put around it so that it can be shipped. Highly flexible machine, it's wonderful to run everything as a service, because in principle it doesn't matter how the packaging machine works.

Speaker 2 38:28
He only wants one thing, the right label has to be on it and there can't be any more packaging around it than is absolutely necessary, because that costs money. So, in such areas as filling, you can do certain things, finishing, i.e. in the post-processing of the metal process, there are things that work well and in principle you can answer the question relatively easily, whenever

the only thing that matters to you as the end customer is that the thing is done.

Speaker 2 39:05
Not how it's done, but that it's done. Then M -Sing as a Service is fantastic.

Speaker 1 39:12
Yes, sure. Great. Then, given the time, I would focus
on the drivers for the acceptance of equipment of the service integration and, given the time, only on the providers, i.e. the OEMs.

Speaker 1 39:25
Happy to talk about macro trends, what are these developments? These are technological megatrends, market and competition, demographic trends that are driving equipment as a service. Then one level deeper. What are the main drivers?

Speaker 1 39:36
That's a marketing component. The financial operationally strategically then Covid and Ukraine, how the this

Speaker 2 39:46
On the provider side, it's a relatively simple matter. There's a nice study about it from the university, there's a nice study about it from Deutsche Bank, and there's a nice study about it from McKinsey.

Speaker 2 39:59
At the end of the day, everyone says, because a company at the end of the day is always valued by the capital side. So, everything is a service, business models promote the resilience of companies. That's clear.

Speaker 2 40:12
Because when I have EaaS contracts with my customer, think about my automotive guy, I bought 48 months and 200 .000 kilometers, those are the two parameters that I purchased.

Speaker 2 40:26
That means I can't change after 14 months or change after 20 months. So, I do, because I also pack everything into the process, in the sense of service citation, that is needed during the service life, for example, as a manufacturer of, let's say, a woodworking machine, I have the saw blades in it and so on and so forth.

Speaker 2 40:51
And so I can tell my investors
, my shareholders, my investors that I have fixed contractual relationships that continuously bring in money. And in the end, that's the core of why you do it at all.

Speaker 2 41:08
Everything else, as a second point alongside the topic of capital, is of course the topic of when I set up a digital agenda, then I suddenly get products through my sales department that would otherwise be bought and ordered on occasion.

Speaker 2 41:25
Of course I get them in with it, because think about the car again, today you might think, do I take the expensive leather seat and do I take the elaborate ventilation technology, but if the manufacturer says you only buy kilometers, a comfort factor, and a running time, it's all in there.

Speaker 2 41:49
That means that everything is also sold to them, so it's great for holding everything as a service model. These are the key points where the manufacturers' eyes light up.

Speaker 1 42:03
To what extent will you say that the coronavirus pandemic or Ukraine has actually had a positive impact on these drivers? Yes. Do you have anything?

Speaker 2 42:13
It's relatively simple Covid and Ukraine. And I'll go one step further now, which we must not forget Israel, US channel and Taiwan issues.

Speaker 5 42:30
Yes.

Speaker 2 42:31
These are topics that show manufacturers at the moment how fragile the world is and with what tiny little events they suddenly find themselves in the problem of sales collapsing completely because perhaps only three screws are missing.

Speaker 2 42:48
So, and that's exactly the problem. If (name anonymized) will be able to tell me better how many tens of thousands of miles are in such a big machine and if only one single part is missing due to these events, for example, before Covid, I myself, although I am an engineer, I was not aware that 85 percent of all wire harnesses are produced in Ukraine.

Speaker 2 43:16
That means that without a wiring harness, no machine, no car, no airplane, nothing works. So, over 90 percent of the small parts that go into our watches, alarm clocks, cameras, wherever, are produced in Taiwan.

Speaker 2 43:33
If some little problem happens, the stupid dam gets stuck in the Suess channel, then they're up a creek. And that's exactly why the problem has now arisen that many OEMs are now asking themselves the question, I have to rethink and reinvent service, I have to rethink and reinvent sales and I also have to find some tools.

Speaker 2 44:02
Topic Resilience of my company, the resilience so that my yellow donors don't quit.

Speaker 1 44:11
Yes, if you were to turn the whole thing around and briefly touch on the customer side, what are the absolute main decision criteria for an equipment of service driver?

Speaker 2 44:23
Convenience, comfort, safety.

Speaker 1 44:26
So probably just a no-wall resolution.

Speaker 2 44:29
So I really, if I were a customer, that's exactly the topic today, why I might even switch to such a car model. Hey, the service costs me three minutes. Drive there once, take another car away.

Speaker 2 44:43
Or if I look at a machine now, the manufacturer is connected to me. The manufacturer knows in advance when a nozzle will wear out. Or I've just been looking at it this week in the tools area, so tools.

Speaker 2 45:00
For example, I can use a tool like this, an expensive tool, an industrial drill, which costs 800, 900 euros per piece. So, I can now drive it to the absolute wear limit of 99%.

Speaker 2 45:18
Before, I was unsure, maybe after 40% I said, okay, I don't know if he's still doing it. Because suddenly the manufacturer and the user form a team where both have an interest.

Speaker 2 45:36
The user has an interest, it should always be running.
And the manufacturer has an interest, it must always be running, because otherwise they would have to pay for service interruptions.

Speaker 1 45:46
Would you say that increased liquidity bottlenecks
due to the Covid pandemic or the Ukraine conflict have also boosted demand for equipment as a service?

Speaker 3 46:00
Not only not, but it’s also service. But it has definitely had a negative impact on the willingness to invest in general. We have seen that, of course. On the one hand because of the availability, but on the other hand also because of the lack of availability, precisely because of the coming economic uncertainties.

Speaker 3 46:18
Or the feeling of economic uncertainty is of course always a brake and that would of course promote it as a service. But I would say that these events that you mentioned tend to increase the risk for the EaaS provider.

Speaker 4 46:39
Yes.

Speaker 3 46:40
Because what the world has said, if the machine is suddenly at the customer's site

due to an Eran flow, but the provider, who has to be available for EaaS, is the one who suffers on the customer side, this naturally promotes willingness, because I make myself independent of it.

Speaker 3 46:56
I say, okay, if a ship gets stuck in the Suess Canal again and I can't get material to work, then I have an accessory requiring paper. I have to expect, possibly, where I have rolled a piece of my entrepreneurial risk on my manufacturers, then I feel better about it.

Speaker 3 47:16
Otherwise, I looked at your two points 5 and 6, that one yes, how does that become negative, the other, how does that become positive? Let's say all aspects have both.

Speaker 3 47:27
Market and competition are both beneficial. In general, I would say that on the mechanical engineering side, market and competition is more conducive to the topic of EaaS, because customers can also compare better in the course of more transparency through the Internet and the manufacturers consider all parts, how they can differentiate themselves from their competitors and win customers for themselves.

Speaker 3 48:00
And then, of course, in addition to the machine itself, these additional services such as a service also come into play. Technology is rather difficult for the manufacturer. Imagine they haven't sold the machines, but they have placed it with the customer and then the development continues and then the customer says, okay, but I want something else, because there are new possibilities that I need to be successful, then they suddenly stand there as the ruler and haven't paid for the old machine yet, but what do they do with it?

Speaker 3 48:29
So the technological development is of course exciting for the end customer of as a service, because that is also a topic that we define, what drives customers to go into such modern, flexible models, just technological development, I am always up to date, I can get new technology and am thus competitive again myself.

Speaker 3 48:51
Difficult at the manufacturer.

Speaker 1 48:52
If I may interject briefly, question on this. The topic of the complete lifecycle and after-market of such machines. When a new machine is on the market, how do OEMs cover it up after the second market of the machine?

Speaker 1 49:06
Or how important is a second market for a machine that is otherwise used in equipment -as -a -service? How often are they resold?

Speaker 3 49:17
Is always important. And as a financial services provider, for example, we always look at partnerships to see what the partner, the manufacturer at the other end, is doing. Does he take

care of the second man of his own essence, yes or no?

Speaker 3 49:32
I maintain that in the long term, the manufacturer who also deals with the second will be more successful than the one who really sells and forgets in the very best sense of the word, namely I sell an Essence up front, and I'm not interested in what happens to it afterwards.

Speaker 3 49:49
Because that also opens the door for competitors and the secondary market naturally also has an economic influence on the primary market. If I can or want to control this, then I not only control what happens on the secondary market, I also control what happens on the primary market.

Speaker 3 50:04
So in, the competition, a second-hand machine comes onto the market and competes with a new machine from the same manufacturer. The manufacturer who manages both is of course better off than someone who only has the new machine and leaves the other to some brought-in machine dealer who couldn't care less what happens to the first machine.

Speaker 2 50:23
I would add to that, (name anonymized), and I may. It is basically the case that the value of secondary market use has become much, much greater due to Covid -Ukraine and co. through the availability of machines that are
really relevant to the business.

Speaker 2 50:41 A
lot of people have written, don't give me a great price for the machine, but who has one at all that's deliverable if I have a problem as a perch. The second story is, I had said this earlier, we have to consider that yes, the ownership is turning around.

Speaker 2 50:58
In an EaaS, if it comes from the manufacturer, not via special purpose vehicles, that variant also exists. If it comes from the manufacturer, the manufacturer is still the legal owner of the machine.

Speaker 2 51:13 In
other words, he's interested in the food being particularly good, particularly valuable, particularly durable, particularly well looked after anyway. And of course, if the whole thing snowballs, he has the chance to say that my customer has an EaaS agreement with me, but is now reaching the quantity limit, for example.

Speaker 2 51:37
The machine is no longer good for the quantity. Then he can easily say, I'll swap the machine, because the billing element is, for example, pieces. This is how the colleague references it in IT.

Speaker 2 51:55
This is also how storage as a service model are structured. Big, big partners in the automotive sector, in the municipal sector, cities, in the software sector, big software houses, they have storage solutions where you no longer look at when the assembly frame needs to be replaced,

but they scale up terabyte by terabyte and the EaaS provider says when the assemblies are needed.

Speaker 2 52:24
And that is of course excellent secondary market goods. And that's also the issue with everything as a service: as a customer, I have no legal claim to a new device. This means that I can also use my own second or third-party devices refurbished.

Speaker 4 52:42
Mhm.

Speaker 2 52:43
Yes, great.

Speaker 3 52:44
Because another good case to mention here in any case, because we are talking about, our first question yes, to what extent is the secondary market, or the consideration of the time market important for as a service models?

Speaker 3 52:59
That's essential for me, why? We have already talked about it earlier, as a service means, in the minimum configuration, I provide service as a manufacturer so that the machine runs, in the maximum configuration, I then have a solution approach, which exists in the area of packaging, which exists in the area of printing and the like, where a machine manufacturer not only supplies the machine, but also the service for it, but also, in case of doubt, consumables, consumables, such as ink and paper in the printing industry, as in the packaging industry the packaging material, etc.

Speaker 3 53:38
And if I keep my machines completely under my control, if I allow my machines to be freely tradable on the time market, then sooner or later I will also lose the service and consumables component, because what will competitors do?

Speaker 3 53:58
Competitors will try to bring in service and consumables themselves, and you can do that best when you have access to the machines, to the used market, to disassemble and analyze them.

Speaker 3 54:13
And then to ask, ok, can I, for example, although I am not the manufacturer of this machine, perhaps make a service offer that I calculate separately, therefore cheaper, much cheaper than the original manufacturer, or even more exciting, that's already there, I provide consumables for certain machines, for certain applications, but which also run on the machine.

Speaker 3 54:38
And the manufacturer of the machine is well advised to limit this as far as possible, to avoid it completely, as we can't, but to limit it, make sure that competitors are also aware of this, quite clearly, but what we see as experience, what the manufacturers who deal with something like this, i.e. concrete, that they have the service offer or even offer
consumables, that they are always equally keen to control the secondary market for their machines in order to have an influence on keeping the competition for additional seating

performance in check.

Speaker 1 55:16
Great, given the time, I would then move on to the last part and that would actually be the concrete implementation of equipment as a service model. What are the absolutely critical success factors for you and how do you assess the role of MVP and to what extent does the degree of digitization and the free service share at the OEM play a role in a successful implementation?

Speaker 3 55:46
Please tell me briefly what I mean by the abbreviation MVP.

Speaker 1 55:50
This is a minimum viable product.

Speaker 2 56:03
I'll answer them in numbers, very briefly. So, the first story is, as with the advertising, you could also get someone who knows how to do it.

Speaker 2 56:17
That's the first crucial question. And it could also be that the person is taking money that you've already invested, because usually the OEM doesn't have anyone who knows how to do it. So, the second story is, that's like fake mails and co.

Speaker 2 56:35
That means, for example, that it is very, very good and helpful to join communities, i.e. ecosystems, for example our Digital Industries World is one of these, where people with like-minded problems meet.

Speaker 2 56:52
Because then it won't be so expensive because you don't try it all out yourself. Then the MVP process or the MVP topic is certainly infinitely important in the proof of concept. I shouldn't be arguing with my IT service provider about the integration of billing into my ERP system and with my lawyers about the interpretation of specific contractual issues.

Speaker 2 57:15
Because then I won't finish, they won't finish. This means that it makes sense for me to not tackle the critical points at the beginning, and I can get this out extremely well via a community.

Speaker 2 57:34
But the first story is, I need a digital agenda, because I sell lifetime and no longer one-time. So, then I really have to create service sales in my company and the company, they have to form a team.

Speaker 2 57:53
So, and then we have defined a sequence of steps that works. First, set up the customer journey and the business model. Second step, set up the contract and refinancing model.

Speaker 2 58:06 The
third step, from a technological point of view, is what I need as interventions in the machine, cloud, and pro. And the fourth step in the go-to-market is the step where I move from collecting to billing, i.e. where I bring this process to life.

Speaker 2 58:23
And if you follow this process sequence, this sequence of steps cleanly and then keep the proof of concept simple, perhaps it is easier to read the relevant billing parameters from a cloud application from the standard dashboard and transfer them to the Excel spreadsheet than to immediately create the problem that you might tell your banker on site, you have to connect to the cloud and get the data for your financing from the data cloud, because then you suddenly find yourself in the banking regulator's office, where you then have to present the whole thing to the banking supervisory authority without having somehow infected yourself, because it is so-called outsourcing.

Speaker 2 59:09
So I can make an EaaS so horrible, so insanely complicated
by making
a few mistakes that I can't get it to fly and I'm going to be hell bent on telling them the examples that didn't work because that wouldn't be fair, but there are companies that have started three times and still haven't finished and where every time I come back to it I say, hey, start a little simpler and offering EaaS in Mexico or offering it in Nigeria is not a good plan either.

Speaker 2 59:50
And if in the end it's the right of exploitation and the tax law or the issue that I can't
even charge VAT in the country or the more complex I make it, the more certain I can be that I won't get it done.

Speaker 1 01:00:05
Okay, exciting. The last final question would be, if you had any contact with this, to what extent would you assess when private equity companies or you can be interesting for private equity companies to buy up companies and restructure them with the help of an equipment as a service model, because perhaps this has increased the evaluation.

Speaker 2 01:00:32
I like to push you in the whole thing. There are four models of how to build refinancing. If you see the pictures, when I talk about 1, 2, 3 and 4, you'll see what those are. 1 means I refinance the OEM. 2, I make the payment jump between the bank and the customer volatile. 3, the manufacturer sets up its own finance subsidiary. The fourth method is exactly what you are talking about.

Speaker 2 01:01:03
I have a private equity company that feeds a special purpose vehicle (SPV).

Speaker 2 01:01:13
A letterbox company, this letterbox company ultimately takes over the entire management and co. And that's precisely why this model has been so much in the press, in the social media, may I say at this point, because that was the model that Trumpf set up with Munich

Re, with Relayer and with Hartford’s Teamboiler and with High Consulting.

Speaker 2 01:01:42
But if you only lost the amount of partners, then it becomes very complex, it has become so. (name anonymized) knows even better than I do, including the managing director of the bank, Trumpf Bank, and we also know how many times this model has been sold despite this effort.

Speaker 2 01:02:02
And in this respect, private equity has three ambitions. One is that it wants an investment property with a good return. The second ambition of a private equity company is that it wants data. To use this data, for example in the case of Munich Re as the world's largest reinsurer.

Speaker 2 01:02:32
About case data, about replacing post-analytics with real-time analytics, so to speak. And the third playing field is, of course, if data is tomorrow's commodity that can be used to make money, then there is also the question of the commercialization of data.

Speaker 2 01:02:50
These are usually the three reasons for equity partners.

Speaker 2 01:03:00
But it's simply that this model, I have one, or I deal with it differently, if I set up a model where I say someone wants risk, then I'm looking for a head, someone who takes the risk.

Speaker 2 01:03:33
There I take a special purpose vehicle, an SPV, founding GmbH, 25,000 euros, justifiable. So, then I'm the one with equity capital, because I can't get it funded
with capital. So, then this company is the center of risk.

Speaker 2 01:04:03
They're the ones who, in an emergency, if something goes wrong, because we're talking about contract periods, starting from maybe one year to ten or 15 years. So, if I commit to the EaaS for ten years, then I also have to know that I'm in a position to pay them and I have to train them. That's why you think I want this issue with the digital twin.

Speaker 2 01:04:51
I have a lot to do with OEMs, where I tell them, no, guys, the digital twin, you don't have to start with the new machine, you have to bring your old machines into digital twin. Why is that?

Speaker 2 01:05:07
Because all the people who can operate the old machine, who once designed it, who know how to create spare parts, they all go into the hand. And the young people, they have so much to do with the new machines, you can't put them on the old machines, which means that if your developer doesn't stay with you via a digital twin for the old machine, then you can't even provide more service for the machine in three years.

Speaker 2 01:05:40
That also shows, if you think, if you look at this little document, which we have now reissued for the SPS. Of these four models, and we have this in the community, there are now 20 banks

and four insurance companies.

Speaker 2 01:05:58
We really looked at things worldwide, found hundreds of ideas and models, and in the end we said. We then said that there are four ways to build it.

Speaker 5 01:06:15
Yes.

Speaker 2 01:06:15
So, I support the OEM financially. Everything remains as it is. So, the classic machine sales and financing, but I make the payment stream of the financing volatile.

Speaker 2 01:06:34
The third variant, I have a financial subsidiary as a captive, which can be consolidated into the parent company.

Speaker 4 01:06:48
Mhm.

Speaker 2 01:06:49
And the fourth one for me is the free float model. Exactly, I build a special purpose vehicle, I feed it with equity capital and then behave like the captive model. The models can slide into each other, so you can also develop them and then we're back to the MVP.

Speaker 2 01:07:09
I say to people today, please start with model 1. And in model 1, the refinancing part with all the regulators from the financial sector, including tax, is separate from the operational part of the usage-based model.

Speaker 2 01:07:27
Because the moment I match the contracts with each other, I don't have to tell you that I don't have a contract with all of them, but each one with each one. And then I'm at 2 to the power of M. And I've had appointments, 4 hours, I was on the verge of suicide, yes, with 3 lawyers and they also said, great, but today's appointment.

Speaker 2 01:07:54
That's just the way it is, you really shouldn't ignore the disputability of such contracts. Because in the end, one of these things goes wrong. And the customer or the manufacturer drags the other party to court.

Speaker 2 01:08:12
Judge, well educated, no idea about this topic. And then he wants to have
a juice plant, then he only judges on juice layers. And when I say as an OEM, well, I can't say for sure whether he really needed 60 hours or 85 hours.

Speaker 2 01:08:31
Says the judge, oh, you can't say it exactly. Or the topic, for example, I no longer use the word Capex -Opex -shift at all, why? I'm not a licensed auditor, I didn't study or learn tax law and

I'm duly licensed by the tax authorities as a tax consultant.

Speaker 2 01:08:58
The statement Capex -Opex, where is it? In the end, only a licensed auditor or tax advisor can do it. And I won't do shit to get involved in my client's accounting problems, I'll tell him where to ask.

Speaker 2 01:09:16
I also ask him, for example, about topics such as IFRS 16. But I ask him to do the audit with his auditor. That means I will never do it the way some FinTech's do it.

Speaker 2 01:09:32
Austrian partners are very popular. Write in there, Capex -Opex -Shift, what do you mean? If the financial audit says after three years that the thing should be allocated to fixed assets.

Speaker 2 01:09:48
What does the customer do with you then? In the worst case, they will have to reopen their annual report for three years. And they won't be happy to do that, and they won't do it without taking you to court.

Speaker 2 01:10:04
Because that's some important money. Yeah, sure. So, and these are things that everyone was talking about at the moment. I wouldn't get me wrong on the subscription issue, please. That's the only report now that really says exactly what it does is used anyway.

Speaker 2 01:10:22
And then perhaps your question doesn't even assess that.
There is also the following, for example. Many companies now have international steak and shareholders.

Speaker 2 01:10:35
And then a problem arises, namely if I don't understand the language in Germany, what I'm doing. Because as a development engineer, for example, I'm suddenly dealing with EaaS.

Speaker 2 01:10:47
Where I need business law, tax law, accounting, legal and text topics. And now the whole thing is also being translated into English. And then I'm suddenly in an area where I suddenly find myself in a situation where every country in the world has a banking regulator.

Speaker 2 01:11:10
Every country in the world. It has slightly different regulations from the other country. In Poland, for example, I can easily say that I'm backing the whole thing with a loan. In Germany, if you back something with a loan, you need an official banking license.

Speaker 2 01:11:33
In Spain, for example, I can say that I simply pass on service money. If I'm in Germany, yes, then the so-called pass-through law applies. That is the collection law. As a financial service provider, you have to apply for this, and it costs money if you don't have it.

Speaker 2 01:11:56
You'll notice when I get deeper into it now, so the MVP is a really important topic.

Speaker 2 01:12:07
The more flowery I make the bouquet right from the start, the more I will break my wings, because they reach the limits relatively quickly, that they no longer have a handle on it. And the big companies are unfortunately even more problematic.

Speaker 2 01:12:27
In small companies, they present this to the management every four weeks. And the board are the decision-makers, and they give it the thumbs up or thumbs down. If they work in large hierarchies, international corporations, owners are based in China, yes, American sales markets have to be served, then they have the problem that no meeting at all says to them bindingly, we won't do this now or we'll do that or I suddenly need money, he then says okay, then we'll put 50 on it.

Speaker 2 01:13:11
A really, really optimized EaaS will only work in the end. So, let me say, when I have the concept, when I have the first ten customers up and running, then the following will happen.

Speaker 2 01:13:29
I create demand-oriented invoices. That means, based on an event, I also need the link to IT. So, here too, the question is of course, do I have to link this to my bank IT, then I'm in regulatory affairs or do I do it on my own?

Speaker 2 01:13:49
Yes, only if you think about it today, yes, you have, if you have IT expenses, then you can say three thirds. One third is the programming, two thirds is the testing. In
other words, if someone tells you today, well, I'll do it for 5, 6000 euros, then unfortunately you can spend three times as much, because you also have to test it.

Speaker 2 01:14:21
And then suddenly it's like this, I know a lot of companies at the moment that unfortunately always go to the CFO and say, I need a bit more budget. Because that's also the fatal thing about IT issues when the IT solution doesn't work.

Speaker 2 01:14:40
Everything you've invested, everything, short.

Speaker 1 01:14:46
Absolutely, no, exciting, yes, super exciting topics also diverse, spontaneously I have now covered in large part or actually everything, I would actually still maybe, if you have the minute, super interested, two things once, are there really concrete KPIs or incentives that they have experienced in projects that improve such a project success in a certain amount of satisfaction comes to mind.

Speaker 2 01:15:22
the question now is which, who they, so what has happened in terms of sales, for example at the manufacturer, if I build up user-based models, then I also have to look at how an

insurance company, for example, pays its life insurance agents.

Speaker 2 01:15:43
That's a good concrete example, because I'm interested in my customer operating this usage-based business model for as long as possible with as much usage as possible. That makes me rich.

Speaker 2 01:16:01
So I have to build up my incentives in such a way that my sales staff or my market dealers are also happy. And if, for example, I know some companies that have done this very successfully, where the sales representatives even say that if I sell an EaaS pay-per-use product to my customer today, I get a basic contract and, for example, a holding fee per year for ten years, where he keeps it.

Speaker 2 01:16:33
Then of course I can also say that today as an older person.
Well, I'll take out a big policy now and it'll put more money in the till over the next ten years. Super. Really great. With the KPIs between machine and billing.

Speaker 2 01:16:56
So the issue of collecting data for billing. That's exactly the problem. I can only use KPIs that are secure in the legal sense of auditing. For example, I have to be able to prove in a court of law that the machine has produced and used this data.

Speaker 2 01:17:23 In
other words, the more complex I make it, the more I have to invest in tamper-proofing the machine itself. So, shadow memory, writing or, or, or that in the worst case I can tell a customer that you have manipulated the data path, but I have read out the machine and I can tell the lawyer, the judge, that this is exactly what happened.

Speaker 2 01:17:50
Yes, so of course these are controversial factors that will come up at some point, because we don't have to fool ourselves. We're really talking about your customer and manufacturer. A customer who is doing badly economically.

Speaker 2 01:18:05
How much does he want to pay the manufacturer? So, he will do everything he can to tell the manufacturer that he doesn't want to pay you so much when things get really bad. On the other hand, of course, he wants to make as many products as possible so that money comes back into the till.

Speaker 2 01:18:27
Could lead to a big conflict, I can already see the first ones happening. So, with KPIs like that, yes, I have to. What else do we have down there? Ecosystems, exception.

Speaker 1 01:18:42
Exactly, it's about the extent to which there is already a matching platform between financiers or financial institutions and OEMs. There are of course many financiers, but are there already such matching platforms or would it make sense?

Speaker 2 01:18:58
There are a few start-ups among the

Speaker 2 01:19:05
Findustry, Links4 and so on are all ones that at the end of the day want to match the banker with the manufacturer. Findustry, for example, is one that only matches. The Links4 also has the equity model above its form.

Speaker 2 01:19:28
I'm no longer a great friend of them from a completely different background. I know them all personally, including the management in all of them. I've been doing this for seven years now. When I ask myself the question, who should actually get value from such an Everything service, then my first egoism as (company anonymized) is my OEM.

Speaker 2 01:19:57
Because he buys my goods. In other words, just like (name anonymized) said, I'm responsible for financing sales so that they make more sales. In other words, my first great love is the OEM.

Speaker 2 01:20:15
And the second great love belongs to the happy end customer. And the legal issues surrounding data protection, data billing and data security have made it very clear that the manufacturer needs unrestricted data availability and usage rights so that it can provide the end customer with the best possible benefits over the term of the contract.

Speaker 2 01:20:49
So, and all platform ideas are based on that. There's one person who builds the machine, there's another who uses the machine, there's another who finances the thing. And the platform lives from the fact that it monetizes micro-processes.

Speaker 2 01:21:12
So transaction fees, or I used to learn from my dad, highwayman fees. So, and this platform is going to live off of highwayman fees. That is, it will try to give the financial services provider what they need, give the OEM what they need, but what the OEM would like to have, it will cost money.

Speaker 2 01:21:36
And then perhaps I can also develop statistical data from the model, which I can then sell for advertising, for example, as is the case with Google. I mean, think about it in an everything service via a platform, because it's me as a platform operator when the saw blade is worn out.

Speaker 2 01:22:02
And anyone in the world who wants to sell saw blades can buy data from me and I say exactly, you have eight days left, then you need the four new blades. That's brilliant.

Speaker 4 01:22:16
Yes.

Speaker 2 01:22:17
But not for the OEM and not really for the customer either. And that's why, for me, only

models 1 and 3 are actually the deer wall.

Speaker 5 01:22:30
Yes.

Speaker 2 01:22:31
Because the OEM needs it to shape its future. And the customer is looking for reliability and convenience. The customer is looking for a machine that grows with his needs, grows with his requirements and that he pays for.

Speaker 1 01:22:55
Yes absolutely, great. Yes, great. So, from my side, those would actually be the questions.

Interview Transcript Participant 27

Industry sector:
Agricultural Machinery

Geographic scope of operations:
Latin-America
Europe Middle East
Africa
Asia/Pacific
North America

Your functional area:
Operations

To what extent are you involved in equipment procurement and respective management decisions?
Level of involvement
Somewhat involved.

To what extent are you involved in product sales and respective management decisions?
Level of involvement
Not involved at all

To what extent are you involved in service sales and respective management decisions?
Level of involvement
Not involved at all

Selling methodology: How do you typically sell your equipment/machines? (Select all that apply)
Pure product purchase

Purchasing Methodology: How do you typically acquire equipment/machines? (Select all that apply)
Pure product purchase
Product purchase with simple service components
Product purchase with significant service components
Leasing

Awareness of EaaS: Are you familiar with the concept of Equipment-as-a-Service?
EaaS familiarity
Moderately familiar

Adoption of EaaS: Is your company currently leveraging an Equipment-as-a-Service business model for its own operations?
Yes, we are currently using an EaaS business model.

Role Definition: How would you consider your company in questions of machinery and equipment?

As a customer of machinery equipment

Macro level drivers: To what extent did the following specific market-, technology-, regulatory or societal drivers influence your companies' interest in EaaS (such as pay-per-use, subscriptions, rental/leasing, etc.)? (Select all that apply)
VUCA (volatile, uncertain, complex, and ambiguous) environment medium influence
Cost pressure/need for economical resource conservation Strong influence.
Competition on an increasingly global scale Strong influence
Increasingly affordable and accessible data capturing and analysis through Internet of things (IoT) applications Strong influence
International financial reporting standard on leasing (IFRS16) terminating traditional off-balance sheet leasing solutions Weak influence
Need for ecological resource conservation/ meeting of ESG standards Strong influence
General minds shift away from ownership Medium influence
Others No influence

Macro level inhibitors: To what extent did the following market-, technology-, regulatory, or societal inhibitors prevent the adoption of EaaS in your company? (Select all that apply)
VUCA environment negatively influencing risk appetite Strong influence
Risk associated with cybersecurity Medium influence
Differing levels of technological integration across firm's Strong influence
Preference for CapEx Medium influence
Legal complexity Medium influence
Others No influence

Firm level drivers: To what extent did the following financial drivers influence the demand for EaaS in your company (such as pay-per-use, subscriptions, rental/leasing, etc.)? (EaaS client perspective)
Stabilized cash flows (shift from Capex to OpEx) Weak influence
Optimized capital costs through off- balance sheet solutions Strong influence
Increased planning security for financing capital goods Strong influence
No substantial upfront investments for equipment needed Very strong influence
Aligns cost to output/value received from equipment Strong influence
Others No influence

Firm level drivers: To what extent did the following strategic drivers influence the demand for EaaS in your company? (EaaS client perspective)
Leaves focus on core capabilities/competences Medium influence
Transfers risk towards EaaS provider Strong influence
Flexibility to quickly adjust output type/volume to changing demand Strong influence
Faster time- to-market Medium influence
Others No influence

Firm level drivers: To what extent did the following operational drivers influence the demand for EaaS in your company? (EaaS client perspective) *
Variabilization of demand through flexible usage agreements Strong influence
Secure equipment uptime and availability Very strong influence
Improve overall equipment effectiveness (OEE) Strong influence

Achieve efficiency gains (e.g., energy savings) Strong influence
Flexibility in adjusting equipment/machine portfolio Strong influence
Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Very strong influence
Minimizing unnecessary maintenance visits due to IoT capabilities Medium influence
Easier access to advanced manufacturing technology Very strong influence
Others No influence

Firm level inhibitors: To what extent did the following financial inhibitors restrain the demand for EaaS in your company? (EaaS client perspective)
EaaS leads to higher equipment life cycle costs in the long term Strong influence
Price of EaaS solutions is perceived as too high Strong influence
Preference for CapEx Medium influence
Others No influence

Firm level inhibitors: To what extent did the following organizational inhibitors restrain the demand for EaaS in your company? (EaaS client perspective)
Preference for equipment ownership deeply rooted in operations Strong influence
Resistance towards change in general Strong influence
Perceived loss of control over operations Medium influence
Lack of understanding about EaaS Weak influence
Others No influence

External shocks: To what extent has COVID-19 affected the willingness of your company to invest resources in EaaS solutions (such as pay-per-use, subscriptions, rental/leasing, etc.)?
Willingness to invest
Remained

External shocks: To what extent has the Ukraine war affected the willingness of your company to invest resources in EaaS solutions?
Willingness to invest
Remained

External shocks: To what extent has COVID-19 affected your company's future benefit expectancy towards EaaS solutions?
Benefit expectancy
Remained

External shocks: To what extent has the Ukraine war affected your company's future benefit expectancy towards EaaS solutions?
Benefit expectancy
Remained

Please indicate to what extend COVID-19 increased the impact of the following drivers on the adoption of EaaS in your company (EaaS client perspective)
Stabilized cash flows (shift from Capex to OpEx) Remained
Optimized capital costs through off-balance sheet solutions Remained
Increased planning security for financing capital goods Remained
No substantial upfront investments for equipment needed Somewhat increased

Aligns cost to output/value received from equipment Remained
Leaves focus on core capabilities/competencies Remained
Transfers risk towards EaaS provider Somewhat increased
Flexibility to quickly adjust output type/volume to changing demand Remained
Faster time-to-market Remained
Variabilization of demand through flexible usage agreements Remained
Secure equipment uptime and availability Somewhat increased
Improve overall equipment effectiveness (OEE) Somewhat increased
Achieve efficiency gains (e.g., energy savings) Remained
Flexibility in adjusting equipment/machine portfolio Remained
Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Somewhat increased
Minimizing unnecessary maintenance visits due to IoT capabilities Remained
Easier access to advanced manufacturing technology Remained

Please indicate to what extend Ukraine war increased the impact of the following drivers on the adoption of EaaS in your company (EaaS client perspective)
Stabilized cash flows (shift from Capex to OpEx) Remained
Optimized capital costs through off-balance sheet solutions Remained
Increased planning security for financing capital goods Remained
No substantial upfront investments for equipment needed Somewhat increased
Aligns cost to output/value received from equipment Remained
Leaves focus on core capabilities/competencies Remained
Transfers risk towards EaaS provider Somewhat increased
Flexibility to quickly adjust output type/volume to changing demand Remained
Faster time-to-market Remained
Variabilization of demand through flexible usage agreements Remained
Secure equipment uptime and availability Somewhat increased
Improve overall equipment effectiveness (OEE) Somewhat increased
Achieve efficiency gains (e.g., energy savings) Remained
Flexibility in adjusting equipment/machine portfolio Remained
Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Somewhat increased
Minimizing unnecessary maintenance visits due to IoT capabilities Remained
Easier access to advanced manufacturing technology Remained

Please indicate to what extend COVID-19 increased the impact of the following inhibitors on the adoption of EaaS in your company (EaaS client perspective)
EaaS leads to higher equipment life cycle costs in the long term Somewhat increased
Price of EaaS solutions is perceived as too high Somewhat increased
Preference for CapEx Remained
Preference for equipment ownership deeply rooted in operations Remained
Resistance towards change in general Somewhat increased
Perceived loss of control over operations Remained
Lack of understanding about EaaS Somewhat increased

Please indicate to what extend Ukraine war increased the impact of the following inhibitors on the adoption of EaaS in your company (EaaS client perspective)

EaaS leads to higher equipment life cycle costs in the long term	Somewhat increased
Price of EaaS solutions is perceived as too high	Somewhat increased
Preference for CapEx	Remained
Preference for equipment ownership deeply rooted in operations	Remained
Resistance towards change in general	Somewhat increased
Perceived loss of control over operations	Remained
Lack of understanding about EaaS	Somewhat increased

Interview Transcript Participant 28

Industry sector:
Automotive Manufacturing Equipment

Geographic scope of operations:
Europe

Your functional area:
Operations

To what extent are you involved in equipment procurement and respective management decisions?
Fully involved

To what extent are you involved in product sales and respective management decisions?
Not involved at all

To what extent are you involved in service sales and respective management decisions?
Not involved at all

Selling methodology: How do you typically sell your equipment/machines? (Select all that apply)
We don't sell equipment/machines.

Purchasing Methodology: How do you typically acquire equipment/machines? (Select all that apply)
Pure product purchase
Product purchase with simple service components
Product purchase with significant service components
Leasing
Renting
Custom Manufacturing Equipment-as-a-service
Pure product purchase
Product purchase with simple service components
Product purchase with significant service components
Renting
Custom Manufacturing

Awareness of EaaS: Are you familiar with the concept of Equipment-as-a-Service?
Somewhat familiar

Adoption of EaaS: Is your company currently leveraging an Equipment-as-a-Service business model for its own operations?
No, and not assessing the potentials benefits of EaaS

Role Definition: How would you consider your company in questions of machinery and equipment?
As a customer of machinery equipment

Macro level drivers: To what extent did the following specific market-, technology-, regulatory or societal drivers influence your companies' interest in EaaS (such as pay-per-use, subscriptions, rental/leasing, etc.)? (Select all that apply)

VUCA (volatile, uncertain, complex, and ambiguous) environment Medium influence
Cost pressure/need for economical resource conservation Very strong influence
Competition on an increasingly global scale Weak influence
Increasingly affordable and accessible data capturing and analysis through Internet of things (IoT) applications Weak influence
International financial reporting standard on leasing (IFRS16) terminating traditional off-balance sheet leasing solutions Weak influence
Need for ecological resource conservation/ meeting of ESG standards No influence
General mind shift away from ownership Weak influence
Others No influence

Macro level inhibitors: To what extent did the following market-, technology-, regulatory, or societal inhibitors prevent the adoption of EaaS in your company? (Select all that apply)

VUCA environment negatively influencing risk appetite Weak influence
Risk associated with cybersecurity Strong influence
Differing levels of technological integration across firms Weak influence
Preference for CapEx Strong influence
Legal complexity Medium influence

Firm level drivers: To what extent did the following financial drivers influence the demand for EaaS in your company (such as pay-per-use, subscriptions, rental/leasing, etc.)? (EaaS client perspective)

Stabilized cash flows (shift from Capex to OpEx) Medium influence
Optimized capital costs through off- balance sheet solutions Strong influence
Increased planning security for financing capital goods Weak influence
No substantial upfront investments for equipment needed Medium influence
Aligns cost to output/value received from equipment No influence
Others No influence

Firm level drivers: To what extent did the following strategic drivers influence the demand for EaaS in your company? (EaaS client perspective)

Leaves focus on core capabilities/competences Medium influence
Transfers risk towards EaaS provider Medium influence
Flexibility to quickly adjust output type/volume to changing demand Very strong influence
Faster time- to-market Strong influence
Others No influence

Firm level drivers: To what extent did the following operational drivers influence the demand for EaaS in your company? (EaaS client perspective) *

Variabilization of demand through flexible usage agreements Very strong influence
Secure equipment uptime and availability Medium influence
Improve overall equipment effectiveness (OEE) Weak influence
Achieve efficiency gains (e.g., energy savings) Medium influence
Flexibility in adjusting equipment/machine portfolio Strong influence

Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Strong influence
Minimizing unnecessary maintenance visits due to IoT capabilities Weak influence
Easier access to advanced manufacturing technology Strong influence
Others No influence

Firm level inhibitors: To what extent did the following financial inhibitors restrain the demand for EaaS in your company? (EaaS client perspective)
EaaS leads to higher equipment life cycle costs in the long term Strong influence
Price of EaaS solutions is perceived as too high Medium influence
Preference for CapEx Very strong influence
Others No influence

Firm level inhibitors: To what extent did the following organizational inhibitors restrain the demand for EaaS in your company? (EaaS client perspective)
Preference for equipment ownership deeply rooted in operations Medium influence
Resistance towards change in generalStrong influence
Perceived loss of control over operations Medium influence
Lack of understanding about EaaS Strong influence
Others Very strong influence - Request for individual solutions

External shocks: To what extent has COVID-19 affected the willingness of your company to invest resources in EaaS solutions (such as pay-per-use, subscriptions, rental/leasing, etc.)?
Willingness to invest
Remained

External shocks: To what extent has the Ukraine war affected the willingness of your company to invest resources in EaaS solutions?
Willingness to invest
Remained

External shocks: To what extent has COVID-19 affected your company's future benefit expectancy towards EaaS solutions?
Benefit expectancy
Somewhat increased

External shocks: To what extent has the Ukraine war affected your company's future benefit expectancy towards EaaS solutions?
Benefit expectancy
Remained

Please indicate to what extend COVID-19 increased the impact of the following drivers on the adoption of EaaS in your company (EaaS client perspective)
Stabilized cash flows (shift from Capex to OpEx) Remained
Optimized capital costs through off-balance sheet solutions Remained
Increased planning security for financing capital goods Remained
No substantial upfront investments for equipment needed Somewhat increased
Aligns cost to output/value received from equipment Remained
Leaves focus on core capabilities/competencies Remained

Transfers risk towards EaaS provider Somewhat increased
Flexibility to quickly adjust output type/volume to changing demand Increased
Faster time-to-market Remained
Variabilization of demand through flexible usage agreements Somewhat increased
Secure equipment uptime and availability Somewhat increased
Improve overall equipment effectiveness (OEE) Remained
Achieve efficiency gains (e.g., energy savings) Remained
Flexibility in adjusting equipment/machine portfolio Remained
Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Remained
Minimizing unnecessary maintenance visits due to IoT capabilities Remained
Easier access to advanced manufacturing technology Remained

Please indicate to what extend Ukraine war increased the impact of the following drivers on the adoption of EaaS in your company (EaaS client perspective)
Stabilized cash flows (shift from Capex to OpEx) Remained
Optimized capital costs through off-balance sheet solutions Remained
Increased planning security for financing capital goods Remained
No substantial upfront investments for equipment needed Somewhat increased
Aligns cost to output/value received from equipment Somewhat increased
Leaves focus on core capabilities/competencies Remained
Transfers risk towards EaaS provider Remained
Flexibility to quickly adjust output type/volume to changing demand Somewhat increased
Faster time-to-market Remained
Variabilization of demand through flexible usage agreements Somewhat increased
Secure equipment uptime and availability Remained
Improve overall equipment effectiveness (OEE) Remained
Achieve efficiency gains (e.g., energy savings) Remained
Flexibility in adjusting equipment/machine portfolio Remained
Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Remained
Minimizing unnecessary maintenance visits due to IoT capabilities Remained
Easier access to advanced manufacturing technology Remained

Please indicate to what extend COVID-19 increased the impact of the following inhibitors on the adoption of EaaS in your company (EaaS client perspective)
EaaS leads to higher equipment life cycle costs in the long term Remained
Price of EaaS solutions is perceived as too high Remained
Preference for CapEx Remained
Preference for equipment ownership deeply rooted in operations Remained
Resistance towards change in general Somewhat declined
Perceived loss of control over operations Remained
Lack of understanding about EaaS Remained

Please indicate to what extend Ukraine war increased the impact of the following inhibitors on the adoption of EaaS in your company (EaaS client perspective)
EaaS leads to higher equipment life cycle costs in the long term Remained
Price of EaaS solutions is perceived as too high Remained
Preference for CapEx Remained

Preference for equipment ownership deeply rooted in operations	Remained
Resistance towards change in general	Remained
Perceived loss of control over operations	Remained
Lack of understanding about EaaS	Remained

Interview Transcript Participant 29

Industry sector:
Automotive Manufacturing Equipment
Plastic and Rubber Processing Machinery

Geographic scope of operations:
Europe

Your functional area:
Procurement

To what extent are you involved in equipment procurement and respective management decisions?
Somewhat involved

To what extent are you involved in product sales and respective management decisions?
Not involved at all

To what extent are you involved in service sales and respective management decisions?
Not involved at all

Selling methodology: How do you typically sell your equipment/machines? (Select all that apply)
We don't sell equipment/machines.

Purchasing Methodology: How do you typically acquire equipment/machines? (Select all that apply)
Product purchase with simple service components

EaaS familiarity
Not familiar at all

Adoption of EaaS: Is your company currently leveraging an Equipment-as-a-Service business model for its own operations?
No, and not assessing the potentials benefits of EaaS

Role Definition: How would you consider your company in questions of machinery and equipment?
As a customer of machinery equipment

Macro level drivers: To what extent did the following specific market-, technology-, regulatory or societal drivers influence your companies' interest in EaaS (such as pay-per-use, subscriptions, rental/leasing, etc.)? (Select all that apply)
VUCA (volatile, uncertain, complex, and ambiguous) environment No influence
Cost pressure/need for economical resource conservation Very strong influence
Competition on an increasingly global scale Very strong influence
Increasingly affordable and accessible data capturing and analysis through Internet of things (IoT) applications Weak influence

International financial reporting standard on leasing (IFRS16) terminating traditional off-balance sheet leasing solutions Weak influence
Need for ecological resource conservation/ meeting of ESG standards Strong influence
General mind shift away from ownership Medium influence
Others No influence

Macro level inhibitors: To what extent did the following market-, technology-, regulatory, or societal inhibitors prevent the adoption of EaaS in your company? (Select all that apply)
VUCA environment negatively influencing risk appetite Weak influence
Risk associated with cybersecurity Very strong influence
Differing levels of technological integration across firms Medium influence
Preference for CapEx Strong influence
Legal complexity Very strong influence
Others No influence

Firm level drivers: To what extent did the following financial drivers influence the demand for EaaS in your company (such as pay-per-use, subscriptions, rental/leasing, etc.)? (EaaS client perspective)
Stabilized cash flows (shift from Capex to OpEx) Very strong influence
Optimized capital costs through off- balance sheet solutions Strong influence
Increased planning security for financing capital goods Strong influence
No substantial upfront investments for equipment needed Medium influence
Aligns cost to output/value received from equipment Strong influence
Others No influence

Firm level drivers: To what extent did the following strategic drivers influence the demand for EaaS in your company? (EaaS client perspective)
Leaves focus on core capabilities/competences Medium influence
Transfers risk towards EaaS provider Medium influence
Flexibility to quickly adjust output type/volume to changing demand Strong influence
Faster time- to-market Very strong influence
Others No influence

Firm level drivers: To what extent did the following operational drivers influence the demand for EaaS in your company? (EaaS client perspective) *
Variabilization of demand through flexible usage agreements Very strong influence
Secure equipment uptime and availability Very strong influence
Improve overall equipment effectiveness (OEE) Very strong influence
Achieve efficiency gains (e.g., energy savings) Very strong influence
Flexibility in adjusting equipment/machine portfolio Very strong influence
Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Very strong influence
Minimizing unnecessary maintenance visits due to IoT capabilities Very strong influence
Easier access to advanced manufacturing technology Strong influence
Others No influence

Firm level inhibitors: To what extent did the following financial inhibitors restrain the demand for EaaS in your company? (EaaS client perspective)
EaaS leads to higher equipment life cycle costs in the long term Medium influence

Price of EaaS solutions is perceived as too high Strong influence
Preference for CapEx Strong influence
Others No influence

Firm level inhibitors: To what extent did the following organizational inhibitors restrain the demand for EaaS in your company? (EaaS client perspective)
Preference for equipment ownership deeply rooted in operations Medium influence
Resistance towards change in generalMedium influence
Perceived loss of control over operations Medium influence
Lack of understanding about EaaS Medium influence
Others No influence

External shocks: To what extent has COVID-19 affected the willingness of your company to invest resources in EaaS solutions (such as pay-per-use, subscriptions, rental/leasing, etc.)?
Willingness to invest
Somewhat increased

External shocks: To what extent has the Ukraine war affected the willingness of your company to invest resources in EaaS solutions?
Willingness to invest
Somewhat increased

External shocks: To what extent has COVID-19 affected your company's future benefit expectancy towards EaaS solutions?
Benefit expectancy
Somewhat increased

External shocks: To what extent has the Ukraine war affected your company's future benefit expectancy towards EaaS solutions?
Benefit expectancy
Somewhat increased

Please indicate to what extend COVID-19 increased the impact of the following drivers on the adoption of EaaS in your company (EaaS client perspective)
Stabilized cash flows (shift from Capex to OpEx) Somewhat increased
Optimized capital costs through off-balance sheet solutions Somewhat increased
Increased planning security for financing capital goods Somewhat increased
No substantial upfront investments for equipment needed Remained
Aligns cost to output/value received from equipment Remained
Leaves focus on core capabilities/competencies Somewhat increased
Transfers risk towards EaaS provider Somewhat increased
Flexibility to quickly adjust output type/volume to changing demand Increased
Faster time-to-market Increased
Variabilization of demand through flexible usage agreements Somewhat increased
Secure equipment uptime and availability Increased
Improve overall equipment effectiveness (OEE) Somewhat increased
Achieve efficiency gains (e.g., energy savings) Increased
Flexibility in adjusting equipment/machine portfolioIncreased

Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Somewhat increased
Minimizing unnecessary maintenance visits due to IoT capabilities Increased
Easier access to advanced manufacturing technology Somewhat increased

Please indicate to what extend Ukraine war increased the impact of the following drivers on the adoption of EaaS in your company (EaaS client perspective)
Stabilized cash flows (shift from Capex to OpEx) Increased
Optimized capital costs through off-balance sheet solutions Somewhat increased
Increased planning security for financing capital goods Somewhat increased
No substantial upfront investments for equipment needed Remained
Aligns cost to output/value received from equipment Somewhat increased
Leaves focus on core capabilities/competencies Transfers risk towards EaaS provider Somewhat increased
Flexibility to quickly adjust output type/volume to changing demand Somewhat increased
Faster time-to-market Increased
Variabilization of demand through flexible usage agreements Increased
Secure equipment uptime and availability Increased
Improve overall equipment effectiveness (OEE) Increased
Achieve efficiency gains (e.g., energy savings) Increased
Flexibility in adjusting equipment/machine portfolio Somewhat increased
Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Somewhat increased
Minimizing unnecessary maintenance visits due to IoT capabilities Remained
Easier access to advanced manufacturing technology Somewhat increased

Please indicate to what extend COVID-19 increased the impact of the following inhibitors on the adoption of EaaS in your company (EaaS client perspective)
EaaS leads to higher equipment life cycle costs in the long term Somewhat increased
Price of EaaS solutions is perceived as too high Somewhat increased
Preference for CapEx Somewhat increased
Preference for equipment ownership deeply rooted in operations Somewhat increased
Resistance towards change in general Somewhat increased
Perceived loss of control over operations Somewhat increased
Lack of understanding about EaaS Somewhat increased

Please indicate to what extend Ukraine war increased the impact of the following inhibitors on the adoption of EaaS in your company (EaaS client perspective)
EaaS leads to higher equipment life cycle costs in the long term Somewhat increased
Price of EaaS solutions is perceived as too high Somewhat increased
Preference for CapEx Somewhat increased
Preference for equipment ownership deeply rooted in operations Somewhat increased
Resistance towards change in general Somewhat increased
Perceived loss of control over operations Somewhat increased
Lack of understanding about EaaS Somewhat increased

Interview Transcript Participant 30

Industry sector:
Agricultural Machinery
Industrial Machinery
Energy Equipment
Environmental and Waste Management Equipment

Geographic scope of operations:
Latin-America
Europe
Middle East
Africa
Asia/Pacific
North America

Your functional area:
Innovation

To what extent are you involved in equipment procurement and respective management decisions?
Not involved at all

To what extent are you involved in product sales and respective management decisions?
Fully involved

To what extent are you involved in service sales and respective management decisions?
Somewhat involved

Selling methodology: How do you typically sell your equipment/machines? (Select all that apply)
Pure product purchase
Product purchase with simple service components
Leasing
Custom Manufacturing

Purchasing Methodology: How do you typically acquire equipment/machines? (Select all that apply)
Pure product purchase
Product purchase with simple service components
Custom Manufacturing

Awareness of EaaS: Are you familiar with the concept of Equipment-as-a-Service?
Somewhat familiar

Adoption of EaaS: Is your company currently leveraging an Equipment-as-a-Service business model for its own operations?
No, but assessing the potentials benefits of EaaS

Role Definition: How would you consider your company in questions of machinery and equipment?
Both as a provider and customer of machinery equipment

Macro level drivers: To what extent did the following specific market-, technology-, regulatory or societal drivers influence your companies' interest in EaaS (such as pay-per-use, subscriptions, rental/leasing, etc.)? (Select all that apply)
VUCA (volatile, uncertain, complex, and ambiguous) environment Weak influence
Cost pressure/need for economical resource conservation Strong influence
Competition on an increasingly global scale Medium influence
Increasingly affordable and accessible data capturing and analysis through Internet of things (IoT) applications Weak influence
International financial reporting standard on leasing (IFRS16) terminating traditional off-balance sheet leasing solutions Weak influence
Need for ecological resource conservation/ meeting of ESG standards Medium influence
General mind shift away from ownership Weak influence
Others No influence

Macro level inhibitors: To what extent did the following market-, technology-, regulatory, or societal inhibitors prevent the adoption of EaaS in your company? (Select all that apply)
VUCA environment negatively influencing risk appetite Weak influence
Risk associated with cybersecurity Medium influence
Differing levels of technological integration across firms Medium influence
Preference for CapEx Medium influence
Legal complexity Weak influence
Others No influence

Firm level drivers: To what extent did the following marketing drivers influence the adoption of EaaS in your company (such as pay-per-use, subscriptions, rental/leasing, etc.)? (EaaS provider perspective - please rate)
Improve and deepen customer relationships & dependency Strong influence
Achieve recurring sales by intensifying contact opportunities Medium influence
Differing levels of technological integration across firms Medium influence
Positively influence purchasing decisions by involving service components Strong influence
Others No influence

Firm level drivers: To what extent did the following financial drivers influence the adoption of EaaS in your company? (EaaS provider perspective - please rate)
Achieve higher profit margins Medium influence
Stabilize income flows Strong influence
Increase or at least maintain revenues Strong influence
Others Strong influence - Stabilize spare part revenue

Firm level drivers: To what extent did the following operational drivers influence the adoption of EaaS in your company? (EaaS provider perspective - please rate)
Optimization of equipment utilization Strong influence
Cost optimization for planned work Medium influence
Others No influence

Firm level drivers: To what extent did the following strategic drivers influence the adoption of EaaS in your company? (EaaS provider perspective - please rate)
Differentiation from competition by offering services Strong influence
Defend from competition based in either lower price and/or lower cost economies Strong influence
Promote use of innovative products and technologies Strong influence
Reduce sales sensitivity to economic seasonality Medium influence
Cost optimization for planned maintenance work Medium influence
Others No influence

Firm level inhibitors: To what extent did the following product- and service-related inhibitors prevent the adoption of EaaS in your company? (EaaS provider perspective - please rate)
High individualization of tangible products & services Medium influence
High immobility of tangible products Weak influence
High production and delivery costs Weak influence
Services are considered out of scope Weak influence
Others No influence

Firm level inhibitors: To what extent did the following strategic inhibitors prevent the adoption of EaaS in your company? (EaaS provider perspective - please rate)
Risk adversity among management Medium influence
Limited experience with strategic partnerships Strong influence
Misaligned sales incentives and training Strong influence
Low willingness to compete outside the usual domain through service expansion Strong influence
Others No influence

Firm level inhibitors: To what extent did the following organizational inhibitors prevent the adoption of EaaS in your company? (EaaS provider perspective - please rate)
Lack of collaboration across relevant business units and/or functions Strong influence
Resistance against transformation from leadership Strong influence
Lack of required competences Weak influence
Resistance against transformation on employee side Strong influence
Others No influence

Firm level inhibitors: To what extent did the following operational inhibitors prevent the adoption of EaaS in your company? (EaaS provider perspective - please rate)
Controlling all input factors through industrial internet of things (IIoT) means is not always possible Strong influence
Customers are not willing to share operational data Strong influence
Customers are not willing to provide a measure of operational control over their equipment Medium influence
Others No influence

Firm level drivers: To what extent did the following financial drivers influence the demand for EaaS in your company (such as pay-per-use, subscriptions, rental/leasing, etc.)? (EaaS client perspective)
Stabilized cash flows (shift from Capex to OpEx) Weak influence

Optimized capital costs through off- balance sheet solutions Weak influence
Increased planning security for financing capital goods Medium influence
No substantial upfront investments for equipment needed Medium influence
Aligns cost to output/value received from equipment Weak influence
Others No influence

Firm level drivers: To what extent did the following strategic drivers influence the demand for EaaS in your company? (EaaS client perspective)
Leaves focus on core capabilities/competences Weak influence
Transfers risk towards EaaS provider Weak influence
Flexibility to quickly adjust output type/volume to changing demand Weak influence
Faster time- to-market Medium influence
Others No influence

Firm level drivers: To what extent did the following operational drivers influence the demand for EaaS in your company? (EaaS client perspective) *
Variabilization of demand through flexible usage agreements Weak influence
Secure equipment uptime and availability Weak influence
Improve overall equipment effectiveness (OEE) Medium influence
Achieve efficiency gains (e.g., energy savings) Medium influence
Flexibility in adjusting equipment/machine portfolio Strong influence
Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Strong influence
Minimizing unnecessary maintenance visits due to IoT capabilities Medium influence
Easier access to advanced manufacturing technology Strong influence
Others No influence

Firm level inhibitors: To what extent did the following financial inhibitors restrain the demand for EaaS in your company? (EaaS client perspective)
EaaS leads to higher equipment life cycle costs in the long term Strong influence
Price of EaaS solutions is perceived as too high Medium influence
Preference for CapEx Strong influence
Others No influence

Firm level inhibitors: To what extent did the following organizational inhibitors restrain the demand for EaaS in your company? (EaaS client perspective)
Preference for equipment ownership deeply rooted in operations Strong influence
Resistance towards change in general Medium influence
Perceived loss of control over operations Strong influence
Lack of understanding about EaaS Medium influence
Others No influence

External shocks: To what extent has COVID-19 affected the willingness of your company to invest resources in EaaS solutions (such as pay-per-use, subscriptions, rental/leasing, etc.)?
Willingness to invest
Somewhat increased

External shocks: To what extent has COVID-19 affected your company's future benefit expectancy towards EaaS solutions?

Benefit expectancy
Remained

External shocks: To what extent has the Ukraine war affected your company's future benefit expectancy towards EaaS solutions? (EaaS provider perspective)
Benefit expectancy
Remained

Please indicate to what extend COVID-19 increased the impact of the following drivers on the adoption of EaaS in your company (EaaS providers perspective)
Improve and deepen customer relationships & dependency Remained
Achieve recurring sales by intensifying contact opportunities Remained
Differing levels of technological integration across firms Remained
Positively influence purchasing decisions by involving service components Remained
Achieve higher profit margins Remained
Stabilize income flows Somewhat increased
Increase or at least maintain revenues Remained
Optimization of equipment utilization Remained
Cost optimization for planned work Remained
Differentiation from competition by offering services Remained
Defend from competition based in either lower price and/or lower cost economies Remained
Promote use of innovative products and technologies Remained
Reduce sales sensitivity to economic seasonality Remained
Cost optimization for planned maintenance work Remained

Please indicate to what extend Ukraine war increased the impact of the following drivers on the adoption of EaaS in your company (EaaS providers perspective)
Improve and deepen customer relationships & dependency Remained
Achieve recurring sales by intensifying contact opportunities Somewhat increased
Differing levels of technological integration across firms Remained
Positively influence purchasing decisions by involving service components Somewhat increased
Achieve higher profit margins Somewhat increased
Stabilize income flows Somewhat increased
Increase or at least maintain revenues Somewhat increased
Optimization of equipment utilization Remained
Cost optimization for planned work Remained
Differentiation from competition by offering services Remained
Defend from competition based in either lower price and/or lower cost economies Remained
Promote use of innovative products and technologies Remained
Reduce sales sensitivity to economic seasonality Remained
Cost optimization for planned maintenance work Remained

Please indicate to what extend COVID-19 increased the impact of the following inhibitors on the adoption of EaaS in your company (EaaS providers perspective)
High individualization of tangible products & services Remained
High immobility of tangible products Remained
High production and delivery costs Remained
Services are considered out of scope Remained
Risk adversity among management Remained

Limited experience with strategic partnerships Remained
Misaligned sales incentives and training Remained
Low willingness to compete outside the usual domain through service expansion Remained
Lack of collaboration across relevant business units and/or functions Somewhat declined
Resistance against transformation from leadership Remained
Lack of required competencies Somewhat increased
Resistance against transformation on employee side Remained
Controlling all input factors through industrial internet of things (IIoT) means is not always possible Remained
Customers are not willing to share operational data Remained
Customers are not willing to provide a measure of operational control over their equipment Remained

Please indicate to what extend Ukraine war increased the impact of the following inhibitors on the adoption of EaaS in your company (EaaS providers perspective)
High individualization of tangible products & services Remained
High immobility of tangible products Remained
High production and delivery costs Increased
Services are considered out of scope Somewhat increased
Risk adversity among management Increased
Limited experience with strategic partnerships Remained
Misaligned sales incentives and training Somewhat increased
Low willingness to compete outside the usual domain through service expansion Remained
Lack of collaboration across relevant business units and/or functions Remained
Resistance against transformation from leadership Remained
Lack of required competencies Remained
Resistance against transformation on employee side Remained
Controlling all input factors through industrial internet of things (IIoT) means is not always possible Remained
Customers are not willing to share operational data Somewhat increased
Customers are not willing to provide a measure of operational control over their equipment Somewhat increased

Please indicate to what extend COVID-19 increased the impact of the following drivers on the adoption of EaaS in your company (EaaS client perspective)
Stabilized cash flows (shift from Capex to OpEx) Remained
Optimized capital costs through off-balance sheet solutions Remained
Increased planning security for financing capital goods Remained
No substantial upfront investments for equipment needed Remained
Aligns cost to output/value received from equipment Remained
Leaves focus on core capabilities/competencies Remained
Transfers risk towards EaaS provider Remained
Flexibility to quickly adjust output type/volume to changing demand Remained
Faster time-to-market Remained
Variabilization of demand through flexible usage agreements Remained
Secure equipment uptime and availability Somewhat increased
Improve overall equipment effectiveness (OEE) Remained
Achieve efficiency gains (e.g., energy savings) Remained
Flexibility in adjusting equipment/machine portfolio Remained

Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Remained
Minimizing unnecessary maintenance visits due to IoT capabilities Remained
Easier access to advanced manufacturing technology Remained

Please indicate to what extend Ukraine war increased the impact of the following drivers on the adoption of EaaS in your company (EaaS client perspective)
Stabilized cash flows (shift from Capex to OpEx) Somewhat increased
Optimized capital costs through off-balance sheet solutions Somewhat increased
Increased planning security for financing capital goods Somewhat increased
No substantial upfront investments for equipment needed Somewhat increased
Aligns cost to output/value received from equipment Remained
Leaves focus on core capabilities/competencies Somewhat declined
Transfers risk towards EaaS provider Remained
Flexibility to quickly adjust output type/volume to changing demand Somewhat increased
Faster time-to-market Remained
Variabilization of demand through flexible usage agreements Remained
Secure equipment uptime and availability Remained
Improve overall equipment effectiveness (OEE) Remained
Achieve efficiency gains (e.g., energy savings) Remained
Flexibility in adjusting equipment/machine portfolio Remained
Responsibility for maintenance, service, repairs, and replacement remains with EaaS provider Somewhat increased
Minimizing unnecessary maintenance visits due to IoT capabilities Remained
Easier access to advanced manufacturing technology Remained

Please indicate to what extend COVID-19 increased the impact of the following inhibitors on the adoption of EaaS in your company (EaaS client perspective)
EaaS leads to higher equipment life cycle costs in the long term Remained
Price of EaaS solutions is perceived as too high Remained
Preference for CapEx Remained
Preference for equipment ownership deeply rooted in operations Remained
Resistance towards change in general Remained
Perceived loss of control over operations Remained
Lack of understanding about EaaS Remained

Please indicate to what extend Ukraine war increased the impact of the following inhibitors on the adoption of EaaS in your company (EaaS client perspective)
EaaS leads to higher equipment life cycle costs in the long term Somewhat increased
Price of EaaS solutions is perceived as too high Somewhat increased
Preference for CapEx Remained
Preference for equipment ownership deeply rooted in operations Somewhat increased
Resistance towards change in general Increased
Perceived loss of control over operations Somewhat increased
Lack of understanding about EaaS Somewhat increased