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Pivotal or Peripheral: Assessing the Role of Generative Artificial Intelligence in Accelerating Entrepreneurial Success - A Study of enhancing Ideation

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Abstract

This research investigates the extent to which generative artificial intelligence (GAI) accelerates early-stage startups, focusing on the area ‘ideation’. By integrating literature and expert interviews, the study aims to fill the current research gap. This research examines how GAI affects the success of startups, by mitigating common failure factors and capitalizing on success factors. The results show that GAI varies between different kind of tasks and offers practical recommendations and ideas for future research. These insights guide founders in effectively utilizing GAI to navigate the new era of GAI-enhanced entrepreneurship.

Keywords: Generative AI, Startups, Innovation, Entrepreneurship

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1 Abbreviations

AGI – Artificial General Intelligence

AI – Artificial Intelligence

AIGC – Artificial Intelligence Generated Content

API – Application Programming Interface

BRMS – Business Rules Management Systems

CX – Customer Experience

DL – Deep Learning

GAI – Generative Artificial Intelligence

GPT – Generative Pretrained Transformer

HCAI – Human-Centered AI

IDE – Integrated Development Environment

IT – Information Technology

LLM – Large Language Model

LM – Language Modeling

LSTM – Long Short-Term Memory

ML – Machine Learning

MVP – Minimum Viable Product

PFM – Pretrained Foundational Model

RNN – Recurrent Neural Network

SEO – Search Engine Optimization

UI – User Interface

UX – User Experience

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3 Introduction

3.1 Motivation and Research Problem

> "*Generative AI is the most powerful tool for creativity that has ever been created. It has the potential to unleash a new era of human innovation.*" – Elon Musk

In the fast-paced world of startup founding, where speed and innovation are paramount, the emergence of Generative Artificial Intelligence (GAI) is revolutionizing the playing field. The astonishing rate at which GAI applications like ChatGPT have been adopted, reaching one million users in a mere five days, exemplifies the transformative potential these technologies hold for entrepreneurs worldwide (K. Hu 2023). Following this, ChatGPT quickly became recognized as the most rapidly expanding consumer internet application in history, achieving an estimated 100 million monthly users within just two months (K. Hu 2023). In comparison, Facebook reached the 100 million user milestone in about four and a half years following its 2004 launch (CNET 2008), while Instagram surpassed this number in just over two years (Constine 2013). The harsh reality faced by startups, with a failure rate of an optimistic 75% and a loss of USD 322 billion out of USD 429 billion invested in 2015 alone, underscores the urgent need for innovation that could tip the scales towards success (Sutton 2000). In this context of significant financial bleeding, the transformative potential of GAI appears to be a major opportunity, with potential to fully automate human tasks in addition to merely augmenting them. This eventual turnaround occurs in an era of technological renaissance that could redefine the metrics of success in an unpredictable startup landscape. Here, where consistency is rare and traditional business patterns do not always apply, the role of GAI - which is sometimes brushed off as just a statistical parrot - deserves a thorough examination of its ability to change that status quo. This dichotomy plays a crucial role as startups evaluate whether GAI will serve as augmentative tools that amplify human potential, ensuring that human-centricity remains at the forefront in the GAI space, or as independent agents (Raisch

and Krakowski 2020). Despite the growing prominence of GAI in the startup ecosystem, a significant research gap persists in understanding the relationship between leveraging GAI and startup success. This research seeks to bridge this gap by exploring the multifaceted impact of GAI on the entrepreneurial journey, particularly focusing on how its integration may influence startup success and operational efficiency. The aim is to provide a comprehensive analysis that links the theoretical aspects of GAI with its practical applications, thereby illuminating the pathways through which GAI can transform the trajectory of startups. To understand the depth and scope of GAI's impact on early-stage startup success, this research looks at specific use cases, as its utility extends across various domains of startup development, serving as a digital incubator from the development of ideas to the refinement of market strategies. In the use case of ideation, GAI can assist in generating and judging a multitude of ideas. GAI can act as 'sparring partner' and thus accelerates the ideation process of startups. In product development, GAI assists in the rapid construction of Minimum Viable Products (MVPs) enabling a culture of agile development and customer-focused iteration. In the realm of User Interface (UI) and User Experience (UX) design and software engineering, the strategic application of GAI transcends mere automation; it becomes an integral part of the creative process, potentially enhancing user satisfaction and engagement and streamlining development workflows. In the use case of marketing and sales, GAI has the potential to revolutionize these functions by enhancing decision making, personalizing customer interactions, and creating content at scale to drive revenue growth and operational efficiency for startups. The promising potential of GAI goes hand in hand with the awareness that their use in the context of founding a startup must be strategic and well thought through. Understanding its limitations is as crucial as leveraging its strengths. This research will explore how the integration of GAI is influencing early-stage startups, particularly focusing on the question: *To what extent is GAI accelerating the success of early-stage startups?*

The research aims to shed light on the multifaceted impact of GAI on startup success, offering insights into how this technology influences the fundamental processes of startup creation. The anticipated findings will underscore the operational enhancements that GAI brings to startups and provide insights into the evolving nature of startup development in an increasingly GAI-integrated landscape. In the scope of this research, the terms ‘founder’, ‘entrepreneur’, ‘startup’, and ‘startup teams’, including founders and early joiners, are used interchangeably. These terms primarily refer to individuals or teams actively involved in the creation and establishment of early-stage startups. This usage is consistent throughout the research and specifically applies to the context of new business ventures in the process of being developed and launched, with a particular focus on their early stages of development.

3.2 Work Project Structure

The research is systematically segmented into three main stages as outlined in Figure 1.

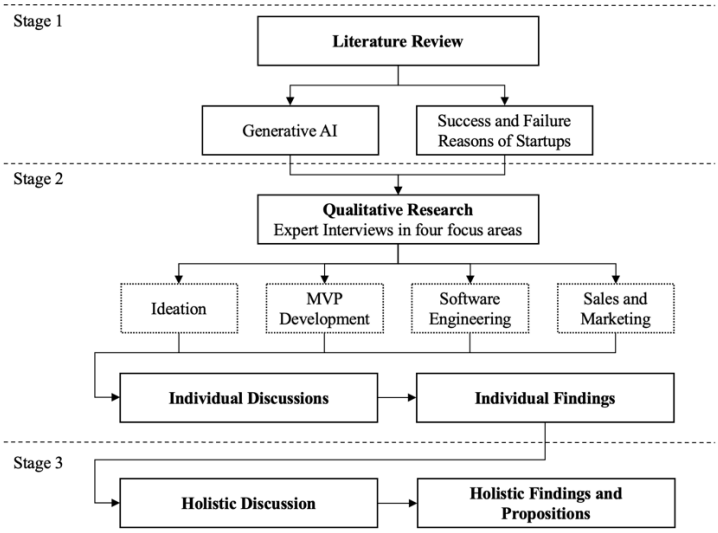

Figure 1: Research Methodology (own illustration)

Stage 1 lays the academic groundwork with a comprehensive literature review based on current literature covering the concepts of GAI and success and failure reasons for startups. This stage is crucial for establishing a foundational understanding of how GAI’s capabilities could potentially align with or diverge from key determinants of startup success. Stage 2 details the

qualitative research conducted through semi-structured interviews and is organized into four use case deep dives: Ideation, MVP development (UI/UX design), software engineering, and marketing and sales. These case studies are selected for their relevance to startup operations, offering practical insights into GAI's application and impact in diverse entrepreneurial contexts. Each use case discusses predominant literature with findings from conducted expert interviews. Stage 3 is devoted to discussing the findings, interpreting their significance in the context of the research questions. This stage synthesizes theoretical knowledge with empirical data to draw conclusions on GAI's role in accelerating or hindering startup success. Finally, this research will provide specific recommendations for startup founders and outline directions for future academic research, aiming to bridge the gap between theoretical understanding and practical application of GAI in the entrepreneurial ecosystem.

4 Generative AI

Technological advancements have persistently reshaped the contours of daily existence. Artificial intelligence (AI) represents one of these pivotal innovations, seamlessly integrating into our lives for many years already, manifesting in smartphones deciphering our verbal commands and sophisticated algorithms curating our digital experiences. Yet, the most profound transformation is on the precipice of being realized through GAI, a frontier that extends beyond mere optimization. McKinsey & Company assessed the impact potential of the GAI developments to generate additional value of multiple trillion dollars across all industries each year (Chui, Hazan, et al. 2023). To be able to understand its impact on entrepreneurial success, the definition and analysis of the technical foundations of GAI must first be assessed.

4.1 Definition of Generative AI

GAI refers to a subset of AI that focuses on generating new data that is similar to the data it has been trained on. Unlike traditional discriminative models that help to analyze and interpret existing data, generative models aim to create new data that is coherent and contextually

relevant (Goodfellow et al. 2014). This unique characteristic makes GAI versatile and applicable in a range of creative and analytical tasks (Bishop, 2006). The technology behind GAI often involves neural networks, which are pre-trained in a process that iteratively refines the generated data until it closely mimics the real data (Goodfellow et al. 2014).GAI excels in various tasks such as image generation, natural language processing, and data augmentation. It can create realistic images, write coherent text, and even compose music. These capabilities extend beyond mere replication. GAI is therefore especially suited for creative and adaptive applications (Radford et al. 2018). GAI is increasingly utilized in many industries with applications ranging from pharmaceutical research to marketing automation and resource optimization, just to name examples (Eapen et al. 2023; Goodfellow et al. 2014; Selenko et al. 2022). It also enriches data analytics for strategic decision making (Enholm et al. 2022). These are just examples and not an exhaustive list of its capabilities (Karras et al. 2018).

4.2 Emergence of Generative AI

Figure 2: Amount of Google search queries containing "AI" (Google Trends 2023)

Although the topic around AI and GAI encountered a big hype in the last year, especially since the release of OpenAI's Chat-GPT in November 2022 (OpenAI 2022), the idea of AI itself is not a new topic at all (see Figure 2: Amount of Google search queries containing "AI" (Google Trends 2023)) and has been omnipresent in our lives for many decades. The field traces back to Alan Turing's ground-breaking work in the 1950s, who introduced the concept now referred to as the 'Turing Test'. Back then, he posed the question *"Can machines think?"*, which represents a test of the thinking ability of machines and essentially states that a machine passes

the Turing Test if it behaves so humanly in a conversation that a real person cannot recognize that it is a machine. For a problem to be solvable by a computer, it must be algorithmically determinable, a condition Alan Turing showed does not apply to all problems (Turing 1950).

In the era of 1970-1990 the paradigm shifted to the development of rule-based systems. A large focus area were ‘expert systems’ with the idea to fit ‘expert knowledge’ into a computer system through decision rules (if x then y), to modify and combine data from an information base. (European Commission. Joint Research Centre. 2020) After the 1990s, the term ‘expert system’ faded, due to the main challenges with ‘expert systems’, that included the process of knowledge acquisition, their constrained capacity for generative reasoning, and their application predominantly within specialized, narrow domains. Today’s Business Rules Management Systems (BRMS) are remnants of this symbolic era, still prevalent in various industries (European Commission. Joint Research Centre. 2020).

The evolution of ‘expert systems’ laid the groundwork for advancements in machine learning (ML) and its subset, deep learning (DL), leading to today’s sophisticated AI capabilities. From the 1990s into the early 2000s, leaps in computational power and data availability fueled these advancements. Contemporary models are now data-driven, capable of learning from datasets - like numerous images of cats - to identify patterns and make predictions without hard-coded rules (Marr and Ward 2019). DL utilizes layered neural networks to process data through increasingly abstract stages imitating how the brain deals with data. While AI has become more efficient, it is important to note that models are originally typically specialized, trained on datasets within specific contexts (European Commission. Joint Research Centre. 2020) These architectures have facilitated numerous advancements across fields like advanced Computer Vision and image classification (Le and Yang 2015), and they underpin the personalized recommender systems that curate content for users on platforms such as YouTube, Instagram, and Google Play, enhancing UX for several years (Cheng et al. 2016).

Recent research has seen a surge in breakthroughs, particularly highlighted by a seminal paper from Google Brain (Vaswani et al. 2017). This work introduced an innovative attention mechanism, which will be elaborated on in Section 4.4, that revolutionized the processing of large data volumes. Such advancements paved the way for the advent of Large Language Models (LLMs) capable of, e.g., basic reading comprehension or answering questions without task-specific training. (OpenAI 2023a).

4.3 User Friendliness of Generative AI Applications

AI has traditionally been a specialized domain, accessible mainly to those with technical expertise and substantial resources (Olson et al. 2017). The complexity of traditional AI models necessitated specialized skills in programming and data science, limiting its reach to a niche audience (Olson et al. 2017; Barros, Prasad, and Śliwa 2023). Historically, the primary users of AI were therefore data scientists, engineers, or large corporations to name examples.

However, the advent of GAI has democratized this technology. GAI platforms are specifically designed to be user-friendly and accessible and are therefore available to a broader range of users, including startups and individual end-users (Olson et al. 2017; Barros, Prasad, and Śliwa 2023). This shift represents a paradigm change in the way we understand and interact with AI technologies. Gartner underlines this reasoning by prospecting that by 2026, 80% of enterprises will have used GAI Application Programming Interfaces (APIs) or GAI-enabled applications in production environments, compared to 5% in 2023 (Howley 2023).

GAI has ushered in a new era of inclusivity. Platforms like Microsoft's Copilot and ChatGPT have simplified the UI, attracting a diverse user base that includes entrepreneurs, educators, and hobbyists (Bilgram and Laarmann 2023). The text-based interface is a significant departure from traditional models that require coding skills. This user-friendly approach has lowered the entry barrier, democratizing access to AI technologies (Chang and Kidman 2023).

GAI platforms offer multiple interfaces tailored for various use cases. For example, GPT-3 can be used for automated customer service, while DALL-E can generate images based on textual descriptions. Their ease of use and ability to generate code and learning resources are particularly impactful in education, too. These models are also opening doors for new pedagogical approaches and are expected to have broader societal implications, including many different business settings (Denny et al. 2023). GAI platforms enable tasks to be completed more efficiently and effectively, impacting end-users in terms of time, cost, and quality.

GAI's accessibility has led to the democratization of knowledge and skills. It empowers individuals and small businesses to innovate in ways that were previously only possible for large corporations with vast resources (Eapen et al. 2023; Olson et al. 2017). The democratization of knowledge, especially through platforms like ChatGPT, has far-reaching implications. It levels the playing field, allowing even individuals with minimal technical skills to access and generate knowledge at a large scale. This has the potential to accelerate innovation and disrupt traditional power dynamics in various industry sectors.

4.4 Deep Dive: Underlying Technology

To understand the implications of using GAI as a startup, it is important to first grasp the foundational technical elements of this technology. As seen in the previous subchapter, machines, unlike humans, cannot inherently comprehend and use human language; they require sophisticated AI algorithms. Language Modeling (LM) is a key approach enabling communication with machines. Traditional LMs like Recurrent Neural Networks (RNNs) and Long Short-Term Memory (LSTM) networks generate words sequentially, predicting each subsequent word based on the preceding sequence. Underlying these LMs are (deep) neural networks, a subset of ML (Zhao et al. 2023).

For problems in which the path from input data to output data is not straight forward, ML allows the machine to find the optimal solution on its own. This process involves creating a model

with certain adjustable parameters. The essence of ML lays in the optimization of these parameters, which is achieved through running computer programs that process and learn from training data or past experiences (Alpaydin 2010).

OpenAI's ChatGPT represents a 'Chat' interface layered on top of a Generative Pretrained Transformer (GPT) model, essentially representing one of the latest developments of an LM (Radford et al. 2018). To understand this, it is necessary to comprehend the concept of Pretrained Foundational Models (PFMs), providing the state-of-the-art backbone for the vast majority the GAI applications to date (Zhou et al. 2023). *(1) Pretrained:* In contrast to many previous efforts of training neural networks on specific tasks, using training data which was previously annotated by humans (e.g. a cat image, where a human classified it as a cat first), pretraining is based on the concept of transfer learning. This is inspired by the human ability to apply previously acquired knowledge to new problems, involving a two-phase framework. In this framework, models first undergo pre-training to learn from one or more source tasks, and then they are fine-tuned, enabling them to effectively tackle new, never before seen tasks with limited data samples (Pan and Yang 2010). In the field of natural language processing, a major advantage of pretraining is that it can use any kind of text, without specific human labels as training material, offering an almost endless amount of training data for this stage. (Zhou et al. 2023) *(2) Transformer:* The 2017 introduction of Transformer architecture by Google Brain researchers (Vaswani et al., 2017) addressed a significant limitation in pre-trained models: their struggle with understanding context and relationships in long sequences of text. Earlier models, such as RNNs or LSTMs, process text in a linear, sequential manner. This approach limited their ability to understand context and effectively generate language, as they primarily focused on the most recent words. In contrast, the Transformer processes entire sequences of text simultaneously, allowing for a more comprehensive understanding of language context. This parallel processing capability allows it to efficiently handle long-range dependencies in texts,

which enabled the development of Language Models with much higher parameters and more context, like GPT-3 (Radford et al. 2018) or BERT with counts of hundreds of billions of parameters. Through that, fine-tuning large pre-trained models with a limited amount of samples already greatly enhances their performance on specific language tasks due to their rich base of linguistic knowledge (Han et al. 2021).

In the process of prompting, a pre-trained language model receives a prompt, such as a task described in natural language, and generates a response based on this prompt alone, with no additional training or updates to its internal settings.

At this juncture in the literature, the term ‘Large Language Models’ has been coined to describe language models whose parameter size surpasses a certain threshold, manifesting unique behaviors that have spurred research into Scaling Laws, Emergent Abilities, and Key Techniques specific to LLMs (Zhao et al. 2023):

How LLMs scale: Research indicates that increasing the size (in terms of the number of parameters) and the computational power used to train LLMs results in improved performance on both general and specific tasks. Additionally, there is a trend suggesting that these models are likely to become even more performant with future increases in size, although no definitive scaling limits have been identified. (Kaplan et al. 2020) However, this ongoing scaling may be subject to practical considerations such as computational costs, data efficiency, and ethical implications.

Emergent abilities of LLMs: Emergent Abilities are characterized in Literature as “the abilities that are not present in small models but arise in large models” (Wei et al. 2022). Such an expansion in size empowers LLMs to undertake and excel in more challenging tasks. A prime example is ‘Chain of thought reasoning,’ a sophisticated process where LLMs deconstruct intricate problems into discernible logical steps, thereby not only solving but also

elucidating multi-step problems (Wei et al. 2022). Alongside, “In-context learning” emerges as another pivotal ability, where LLMs adapt to new tasks by drawing on a few contextual examples provided within the prompt, circumventing the need for extensive retraining (Zhang et al. 2022). These advancements indicate that LLMs, as broadly capable foundational models, are beginning to eclipse traditional models designed for specific tasks, heralding an expansive new era for AI applications (Willemink, Roth, and Sandfort 2022).

Multimodality and Different Foundational Models

Transformer-based models, which rely on extensive datasets and are pre-trained with billions of parameters, have fostered a widespread acceptance of a key concept: one model can be adapted for a multitude of tasks through transfer learning. This approach has led to a significant homogenization of LLMs, heralding the era of ‘foundational models.’ In essence, this means that virtually all cutting-edge GAI applications are built upon fine-tuned versions of a few select models. These foundational models are available in the market and are typically developed by major organizations capable of undertaking the extensive pre-training required (Bommasani et al. 2022).

While these models started to emerge around processing text input to new text output, meaning the area of Natural Language Processing (Devlin et al. 2018; Raffel et al. 2023; OpenAI 2022), the same architecture is now also seen in other use cases like images (Dosovitskiy et al. 2021), Speech (Liu et al. 2019), Code (Zheng et al. 2023) or even Video (Sun et al. 2019). When models can take different types of input and create different types of output (e.g. ‘text & image‘ to ‘video’), these models are called multimodal, and imitate the human way of perceiving and interacting with the world the closest, enabling an even broader range of applications (Xu, Zhu, and Clifton 2023).

Currently, some of the most used, state-of-the-art foundational models include OpenAI's GPT (OpenAI 2023c), Anthropic's Claude (Anthropic 2023) and Google's Gemini (Pichai 2023). As developing or fine-tuning individual models comes at an immense cost (Caroll 2023), these foundational models are typically cloud-hosted by various companies and are accessible either through chat interfaces, such as ChatGPT or Google Bard, or via programming interfaces (APIs). The cost of using these models, particularly for chatbots, varies, ranging from free tiers to premium tiers, which cost around $20 per month in case of a ChatGPT Plus subscription. (OpenAI 2023d; 2023b) Additionally, accessing these models through APIs often incurs charges on a per-request basis, roughly speaking, for the GPT-4 model a request of 750 words would cost around $0.045 (GPTForWork 2023).

4.5 From Augmentation to Automation of Entrepreneurial Activities

In exploring the interaction between GAI and human workers, it is insightful to reference historical impacts of the introduction of new technology into work environments. The research refers to the term of ‘socio-technical systems’ where the tasks of people are shaped through the collaboration and use of machines (Leonardi 2012). Dating back to 1951, this impact is exemplified in a study of coal mines, which illustrated that the introduction of technologies like conveyor belts and hydraulic pickaxes did more than just enhance the efficiency of coal miners; it necessitated a comprehensive reevaluation of team organization, skill sets, and work processes. Miners had to adapt to new roles and collaborate effectively with the mechanized processes, marking a significant shift in the nature of their work (Trist and Bamforth 1951). Drawing parallels to the contemporary context, this historical perspective provides valuable insights for understanding the potential impact of GAI on startup teams. Just as the miners adapted to new technologies, startup teams integrating GAI may face similar challenges and opportunities.

The concept of Human-Centered AI (HCAI) emerged as a response to the burgeoning need for technology that resonates with human values and needs within a business context. Schneiderman's HCAI framework distinguishes between human control and computer automation, clarifying that through effective design, it is possible to attain both high degrees of human control and extensive automation. This theory implies that AI will be designed to be centered around the human decision maker and developed in an ethical manner and with the users' values in mind. For tasks that are complex and not well-understood (e.g. the use of a camera), a combination of high automation and significant human control is needed (Shneiderman 2020).

GAI ought to serve as an enhancer and augmenter of human abilities and awareness. Augmentation, thus, is a mutual evolutionary process where both humans and machines learn from each other, as the GAI is trained on human data, and even in-context data of the user, and the user can use the machine to learn and generate usage from it, while using their expertise to complement and evaluate the machine outputs (Raisch and Krakowski 2020). The concept of AI-Augmentation can be exemplified through an entrepreneur using a generalist tool, like ChatGPT, to enhance its knowledge and ability in a certain domain.

(Semi) autonomous AI-agents also called generative agents represent a natural progression in this AI evolutionary narrative. These agents differ from traditional AI augmentation by operating autonomously towards predefined goals, being capable of autonomous decision making and executing tasks without continual human prompting. They excel in unpredictable environments, using advanced capabilities like web browsing, file management, and device control, transcending the human-dependent model of AI augmentation (Park et al. 2023; Rebelo 2023). Research suggests that even if technologies take over employees' routine tasks, they can enhance cost efficiency and increase employees' commitment, satisfaction, and turnover rates (Malik, Pereira, and Budhwar 2021). In the context of this thesis, if the development of AI is

kept safe and human centered, the entrepreneur will always be in control of the actions taken by AI and can imply its values on it.

With individual AI-agents, the reasoning capabilities are still limited, while the leap from individual AI-agents to multi-agent systems signifies a move towards tackling more complex, multi-dimensional business challenges. In an emerging research field, it is becoming obvious that multi agent systems, namely multiple AI-agents, which can communicate with each other, can tackle more complex real-world problems. In a Stanford research 25 Gve AI-agents were enabled to collaborate in a game-like world interactively, which presented indeed a design, facilitating human like behavior (Park et al. 2023). Building up on that, multiple studies researched how multi-agent systems can tackle real world problems, with the CAMEL framework (Appendix 1), proposing a model of "role playing" in which each agent has a specific role (e.g. Python Programmer) and can collaborate with other AI-agents, which led to substantially better solutions with minimal human intervention. In that example humans set themselves the goal to *"develop a trading bot for the stock market"* (Li et al. 2023).

The final frontier of GAI is the concept of Artificial General Intelligence (AGI) in which the AI is more capable of completing any task than the humans (McLean et al. 2023). It is not yet clear how this form of AI will look like and how it will integrate into our lives. Sam Altman, CEO of OpenAI, said in a recent interview that in order to achieve AGI *"we will need to expand on the GPT [architecture], in pretty important ways, that we are still missing ideas for"* and explained that the road to AGI is still a long one, but seems entirely possible in the near future (Lex Fridman 2023).

4.6 Risks and Challenges of Generative AI Usage

Adopting GAI offers numerous benefits and is a big priority for practitioners, but it also entails significant risks and challenges (Joyce et al. 2023). Such risks can be clustered into three categories: technical risks, legal and compliance risks, and other risks.

Technical risks: Users are worried about the limited traceability and irreproducibility of the outcomes produced by GAI, which could negatively impact their decision-making (de Bellefonds et al. 2023). Furthermore, explainability is an issue, as it is hard for users to understand how output is generated. Lastly, reliability is an issue regarding technical risks, as GAI outputs can differ, even when given the same prompt, making it hard for users to evaluate the accuracy and reliability of outputs (Chui, Roberts, et al. 2023).

Security and compliance risks: According to recent literature, almost 80% of Information Technology (IT) leaders are concerned about an increased security risk when applying GAI (Salesforce 2023b). While GAI may not directly increase the user's security risks, it can aid cybercriminals in enhancing the complexity and speed of cyberattacks (Chui, Roberts, et al. 2023). Intellectual property infringement is another concern when using GAI, as there are no clear guidelines yet on who owns GAI-generated content (Appel, Neelbauer, and Schweidel 2023). Furthermore, data privacy and information security are important when using GAI (de Bellefonds et al. 2023). The increased potential for data breaches and the risk of potential abuse of sensitive data causes hesitation in its use, particularly with sensitive information such as customer data (ibid.). Inaccurate outputs can have severe consequences. Therefore, companies must comply with existing regulations when applying GAI (Baxter and Schlesinger 2023). As GAI is a relatively new domain, there are not many regulations in place, but several significant legislative and regulatory initiatives are either planned or currently underway (Matuso, Frolick, and McGowan 2023). Until such measures are in place, companies need to proactively construct suitable risk and compliance guardrails and speedbumps for GAI, as significant regulatory restrictions are expected to occur in the near future.

Other risks: These risks do not fall into one category but are essential to evaluate before applying GAI. The first risk is generating inaccurate results. GAI-generated hallucinations, which are erroneous or nonsensical responses, are very dangerous when they are not recognized

as such by users, as this can cause a spread of false information (Joyce et al. 2023). Moreover, a common worry is that GAI systems are inclined to mirror algorithmic bias, caused e.g., by incomplete training data, which could result in discriminatory actions (Chui, Roberts, et al. 2023). Another substantial risk for businesses in adopting GAI is implementing and utilizing the technology effectively. According to a study by the Boston Consulting Group (2023), over 80% of business executives identified governance and the absence of a strategic roadmap as their primary obstacles. Additionally, there is a significant talent gap, with more than 70% of respondents expressing reluctance to embrace GAI. Similar concerns have been discovered in a study by Salesforce (2023b), emphasizing a need for more business readiness to implement and utilize GAI effectively. Lastly, the creation and implementation of GAI carry risks in the social and environmental domains, mainly because of the significant carbon emissions linked to the training of complex models. This increases the carbon footprint and prompts questions about the wider ecological effects of developing and deploying GAI (Chui, Roberts, et al. 2023).

Despite many risks and challenges, there are several ways to mitigate and address them, both by users of GAI applications and their creators. Doing so early on is extremely important to navigate the complexities of GAI, ensuring the technology is used responsibly, ethically, and effectively while also being compliant with existing regulations (ibid.).

5 Success and Failure Reasons of Early-Stage Startups

5.1 Definition Startups

Creating a new organization is a complex process that includes various decisions and activities (Korunka et al. 2003). Therefore, it is no surprise that there is no singular definition of a startup, as there are many different views on the term ‘startup’ and what such a company entails. Nevertheless, many definitions show similarities. One prominent definition stems from Steve Blank, who defines a startup as a *“temporary organization in search of a scalable, repeatable, profitable business model.”* He further explains that startups initially consist of ideas only and

do not have customers yet (Blank and Dorf 2020, 20). Another popular definition is by Ries, who says that a startup is a *"human institution designed to create new products and services under conditions of extreme uncertainty"* (Ries 2011, 8). He further elaborates that early-stage startups consist of six key functions: *"vision and concept, product development, marketing and sales, scaling up, partnerships and distribution, and structure and organizational design"* (Ries 2011, 19).

Similar to the absence of a singular definition of a startup, there are also many differences regarding the stages a startup entails. One prominent definition perceives the entrepreneurial process in four stages: startup, transition, scaling, and exit (Picken 2017). In the startup stage, it is all about defining and validating the business concept, the market opportunity, the product, the business model, and the go-to-market strategy. These activities are all defined by a limited commitment and modest economic risk, as the company is just starting out and taking the first steps in each area. In terms of organizational structure, it is still very informal and fluid. In essence, a startup represents the embryonic stage of a business, with a focus on innovation, adaptability, and potential for growth amidst uncertainty. Later on, when an organization leaves the startup stage, the focus shifts towards scaling this structure (ibid.). These activities translate mostly into the four areas portrayed in this thesis: ideation, product building from an UI/UX and an engineering perspective, and marketing and sales.

5.2 Success and Failure Reasons for Startups

While creating a startup oftentimes seems like a promising endeavor, in reality, a vast majority of them fail (Eisenmann 2021; Van De Ven, Hudson, and Schroeder 1984; Thornhill and Amit 2003). Building a new venture from the ground bears certain challenges and risks, explaining the much higher failure rate compared to large corporations (Brush, Greene, and Hart 2001; Freeman and Engel 2007). Interestingly, the amount of startups that are failing seems to remain more or less constant over different periods of time, with research dating back to the 1980s

indicating that only 54% of startups survive past their first eighteen months of existence and recent numbers from a 2021 report showing that two-third of startups fail (Van De Ven, Hudson, and Schroeder 1984; Eisenmann 2021). Such a consistency in numbers raises the question to why startup failure does not seem to have changed over the last three decades. Which strategies can founders employ to minimize these risks and implement measures that contribute to the success of their entrepreneurial endeavors?

Therefore, in the following, the most important success factors and failure reasons of startups will be presented to draw insights into what predicts a startup's performance and which actions founders can take to increase the probability of success of their venture. The results will then create the basis for further analyses to understand how GAI impacts these factors.

Before diving deeper into the potential success factors and reasons for failure, it is important to define failure and success, starting with the failure of a startup. There are as many definitions of startup failures as there are absolute numbers of how many are failing, so having a clear and objective definition is important. Determining a startup failure can entail different perspectives. Per definition, a failure is *"an outcome that falls short of expectations"* (Eisenmann 2021, 24). Another definition defines failure as the *"termination of an initiative that has fallen short of its goals"* (McGrath 1999, 14). Both definitions are heavily subjective, as the goals of each startup might differ and are hard to assess. Therefore, a more nuanced definition is needed. Eisenmann (2021a) introduced a comprehensive definition of startup failure, which entails all scenarios with a negative financial return on investment. This includes companies that have terminated their operations with a loss, those that are still operating but cannot meet the initial investors' expectations, and self-funded entities that cannot recover the initial capital and effort invested. Similarly, most definitions of success also evolve around different tangible measures, return on investment being one of them (Reid and Smith 2000). They range from the sheer survival of the company, over sales or employment growth, to founder satisfaction (Brüderl and

Preisendörfer 1998; Sebora, Lee, and Sukasame 2009; Reid and Smith 2000). Such varying definitions, both for a startup's failure and success, make it hard to interpret the underlying reasons. Therefore, this research aims not to conduct definite success factors to follow or failure reasons to avoid but rather give founders a direction into which areas of their venture are important.

Prioritizing is one of the biggest tasks for early-stage startups, as a lack of resources significantly limits them in certain actions (Eisenmann 2021; Freeman and Engel 2007; Thornhill and Amit 2003). Early-stage startups have difficulties attracting new resources such as financial investments or human capital in the form of employees due to their lack of track record and reputation (Brush, Greene, and Hart 2001). Consequently, this research focuses on universally applicable areas of a startup that are influenceable by founders to make the results as insightful as possible and relevant for different industries and business models. Naturally, other reasons and factors outside the founder's control exist, but they will not be covered in this paper. The analysis will solely focus on the early stage of a company, as success and failure factors change over the lifespan of a company (Cantamessa et al. 2018).

Startup failure reasons are multi-dimensional, hence the various approaches to identify possible reasons. However, there are some similarities across different scholars, dividing the biggest failure reasons of startups into four categories: business model, product, organization, and customer (Duchesneau and Gartner 1990; Fritsch, Brixy, and Falck 2006; Khelil 2016). These categories for startup failure reasons have been first introduced by Cantamessa et al. (2018), the insights of other scholars can also be matched into these categories. These categories also apply to the success factors, as they are very similar to the failure reasons regarding the affected area within the startup. One example is traction: While the lack of traction might be a reason for failure, high traction can be a success factor. Therefore, the two areas cannot be analyzed isolated and must be examined together.

Business model: First, entrepreneurs have to come up with an innovative idea, which already is quite decisive for the performance of the company (Santisteban and Mauricio 2017; Krishna, Agrawal, and Choudhary 2016). According to a literature review on success factors for startups, the idea was always ranked as the most important one (Sevilla-Bernardo, Sanchez-Robles, and Herrador-Alcaide 2022). Several factors constitute a great idea. According to research, it is important that the idea addresses a market demand (CB Insights 2021). Precisely identifying both potential customers and markets can help startup founders to achieve that (Kim, Kim, and Jeon 2018). Furthermore, innovation is a significant component of the startup idea, as, according to (Ries 2011, 28), it *"is at the heart of the company's success".* Besides the idea, there are also other factors in this category founders need to be aware of. One of them is the business model, which, when not properly designed, was found to be a major reason for entrepreneurial failure (Cantamessa et al. 2018; CB Insights 2021). To be successful, founders need to design a business model that is hard to replicate and differentiates itself from competitors. Additionally, revenue models and streams must be carefully designed and, if necessary, continuously evaluated and adapted (Teece 2010). This is of utmost importance, as founders often focus more on the business's product than the commercial development (Cantamessa et al. 2018, 10; CB Insights 2021).

Product: The creation of the actual product is very important (Ries 2011). According to an analysis of over 110 startups that failed, 8% of them failed due to a poor product (CB Insights 2021). Starting up, founders oftentimes have ideas and hypotheses, which they have to validate once they have the first version of their product. Hence, if they cannot turn their ideas into a viable product or their hypotheses do not turn out to be true, startup founders might fail (Rancic Moogk 2012). To avoid this, founders need to design and continuously adapt their product to changing market demands, which is not easy, especially whilst dealing with resource scarcity startups often face (Giardino et al. 2016). For technical products, the technical superiority of

the product and its development time has been proven to be crucial for success. Development times of up to 12 months positively affected the performance of startups, while everything longer than that negatively impacted their performance (Roure and Keeley 1990).

Organization: When it comes to the organization, failure and success reasons are mainly due to two factors: the lack of tangible resources, mostly in the form of money, and intangible resources, mostly in the form of human capital (Cantamessa et al. 2018). While the lack of financial resources is often named as one of the most prominent failure reasons (CB Insights 2021), it will be no further analyzed in the following as it is merely a symptom of other issues of a startup and not a reason in itself (Griffith 2014). Human capital, on the other hand, is a decisive factor for the failure or success of a startup (Eisenhardt and Schoonhoven 1990; Augusto Felício, Couto, and Caiado 2014). Human capital is the economic value attributed to an individual's accumulated experience and skills. In a startup context, human capital represents the collective capabilities and intellectual assets of individuals harnessed to generate economic value for the venture (Unger et al. 2011). The importance of human capital is magnified in the volatile and uncertain landscape of startups, which demands a skilled team but, more importantly, people who are flexible, resilient, and capable of rapid learning (Santisteban and Mauricio 2017). Due to the absence of thought-through processes and structures, the organization emerges based on the decisions the founders and employees are making. Therefore, they are critical to the potential success of a startup. Human capital furthermore, significantly influences a startup's ability to secure funding (Unger et al. 2011). Especially when the final product of a startup has not yet been developed, investors frequently invest in the experience, skills, and visions of the founding team rather than the product itself (Eisenmann 2021). Therefore, experienced founders who possess the needed skills are essential for the success of a startup (Santisteban and Mauricio 2017). In conclusion, human capital has

many effects, as all decisions in the startup are made by the individuals involved. It influences most other reasons for success or failure mentioned in this chapter and is of utmost importance.

Customer: Attracting customers is essential for entrepreneurial success. Research has shown that missing customers resulted in failure for many startups (Cantamessa et al. 2018). Therefore, finding and attracting potential customers is essential (Kim, Kim, and Jeon 2018). A customer base will show the company's traction and validate that customers are willing to buy the product, which is one of the key factors for a startup to avoid failure (Krishna, Agrawal, and Choudhary 2016). This serves as customer feedback for the startup, enabling them to determine whether to persist with the current product or make a strategic shift (Ries 2011).

As the success and failure reasons remain subjective, two clear patterns emerge: the lack of resources and the importance of human capital. Therefore, in the following, the influence of GAI will be analyzed to find out how GAI can support founders to address these two challenges.

6 Setting the Stage: Startup Founding with Generative AI

The newly emerging technology of GAI has shown significant transformation potential in many use cases, especially in the past years. Its many technological capabilities could have the potential to transform the startup landscape. By previously analyzing the technology GAI, as well as typical success and failure reasons, the findings are now extended by examining the influence of GAI on the use cases of a startup. GAI could enable startups to mitigate failure factors or make more effective use of success factors. These deep dives into individual use cases will subsequently help to evaluate the acceleration potential of GAI on startups more precisely and the possibility of using it to make a startup more successful.

Two sources can be used to identify suitable focus areas for analyzing the influence of GAI on startups: The innovation process defined by Rogers offers a suitable structure and divides the innovation process into opportunity identification, idea evaluation and selection, concept and

solution development, and commercialization launch phase (Rogers 1998). Furthermore, McKinsey & Company forecast that 75% of the total annual impact of GAI should take place in the areas of product R&D, software engineering, marketing, and sales (Chui, Hazan, et al. 2023). These areas coincide with those of the innovation process according to Rogers and thus reveal a meaningful area for closer examination. For this reason, the following areas are selected for closer examination, which coincide with the previously mentioned sources: Ideation, MVP development, software development, marketing, and sales.

7 Research Methodology

The goal of this research is to understand how GAI is used by practitioners which either founded a company, or are related to startups, to evaluate the impact on the success of founding a new startup, in order to answer the main research question of this research:

RQ: To what extent is GAI accelerating the success of early-stage startups?

Design and Execution

Semi-structured interviews were used as the primary data collection technique for this research. This approach strikes a balance between maintaining comparability across interviews and allowing flexibility to explore the unique expertise of each participant (Adams 2015).

Number	Description / Background	Number	Description / Background
E1	Venture Building - VP	E10	Entrepreneurship Professor
E2	AI-Consulting - Co-Founder	E11	Tech – Software Engineer
E3	Venture Building - Senior AI-Product Manager	E12	German AI Association – Chairman of the Board
E4	AI-Consulting - EMEA Lead	E13	Tech Startup – Head of Sales
E5	Professor, Founder	E14	LegalTech - Founder
E6	Venture Building - Project Lead	E15	InsureTech - Founder
E7	Entrepreneurship Professor, Banking	E16	Investment, Venture Building – Product Manager
E8	AI-Consulting – Project Lead	E17	AI Research Lab – Co-Founder
E9	Retail and CPG – Founder	E18	Early-Stage Founder, Software Engineer

Figure 3: Overview Research Participants, Expert 1 – 18 (own illustration)

The selection of 18 experts encompassed professionals from various domains, such as founders, individuals in roles related to GAI or startups, and academia (Appendix 3). Detailed information about the individual experts is presented in Figure 3's table. All interviews were conducted virtually online, with one or two researchers attending the meeting, and lasted between 30 minutes and one hour, depending on the expert's availability.

Data Collection

Despite the fourfold approach of diving into four use cases of GAI, the interview questionnaire was developed holistically. This means that each interview is based on the same questionnaire, as the nature of the topic implies that most participants tend to use GAI tools for more than one use case, thus ensuring comparability while getting a comprehensive picture. The questionnaire was structured in a three-step approach (Appendix 4): (1) General understanding of GAI, (2) use case deep dive, (3) a self-assessment by participants regarding their familiarity with GAI. Throughout the questionnaire questions were setup up to be open-ended and allow for in-depth investigation into different topics, depending on expertise of the interviewees (Adams 2015). All virtual interviews were transcribed using an AI based transcription tool Fireflies.ai (2023). Some of the interviews were conducted in German and translated with the help of the online translation platform DeepL (2023).

Data Analysis

The data analysis was fully qualitative, due to the exploratory approach of this research. Prior to initiating the analysis, it was essential to organize the data due to the wide range of topics covered in the interviews. To achieve this, the interview transcripts were segmented and organized into five thematic categories: One for general information about GAI and four others for the in-depth topics. This allowed for an analysis in two different abstraction layers. Each deep dive employs their own analysis, while the following main discussion condenses and supplements the general information.

After deconstructing the transcripts, distinct themes were assigned to individual quotes, building upon aspects of a thematic analysis based on Clarke and Braun (2017) and condensed them into 3-5 main clusters in another iteration. The findings are presented and discussed in the following parts.

Recommendations Generation

The research aims to not only provide an entrepreneurial view on the use cases of GAI, but to also develop a set of propositions on how GAI is reshaping the playing field for the development of successful startups. These suggestions are intended to supplement the thematic analysis and provide startup founders with tangible recommendations as well as a basis for future work.

Cross Validation

After condensing the findings into propositions, a final interview with an industry expert was conducted to revalidate the plausibility of these findings and the generated propositions.

8 Use Case: Ideation

8.1 Introduction

Everything begins with an idea. Even the most innovative breakthroughs by successful companies begin as simple ideas. Ideation is crucial in creating innovative products, services, and technologies, and it is also a vital component of the early stage of any startup (Chulvi et al. 2013). Indeed, ideation can generate new, innovative ideas that can be nurtured into viable businesses. Because startups are often entering emerging sectors that lack products and a clear customer base, ideation is extremely important during the early stages (Brown and Anthony 2011). The ideation stage is critical in determining a startup's initial market position and value propositions. Entrepreneurs often establish new goals as their companies develop. For startups, this means that ideation is an ongoing, iterative process that is particularly important during the early stages when resources are limited, and market uncertainties are high. Gruber et al. (2008)

highlighted the role of ideation for entrepreneurs, arguing that through rigorous ideation processes, startups can identify the niche markets and underserved customer needs that are often overlooked by larger, more established companies. Ideation in startups is a strategic tool that enables them to adapt to changing market conditions and continually refine their products and business models.

Until recently, AI has primarily been regarded as suitable mostly for analytical tasks, and creative tasks were primarily seen as reserved for humans (Huang and Rust 2018; Kakatkar, Bilgram, and Füller 2020; Bilgram and Laarmann 2023; Füller et al. 2022). A study focusing on innovation managers before the launch of GPT-3 in 2022 revealed that idea generation and idea judgment were seen as the least relevant areas for AI applications in the field of innovation (Füller et al. 2022). When Sturm et al. (2021) investigated the influence of AI on ideation processes in 2021, they did not even consider GAI. However, rapid technological advancements in the field of GAI have changed this perception. In fact, it has entirely transformed the landscape of entrepreneurship itself. The wealth of new and rapidly developing opportunities enabled by GAI harbors both opportunities and risks. For startups, this also applies to the process of ideation. Professor of entrepreneurship Yannick Dillen commented on the potential influence of GAI on the ideation process, stating, “Finding a new business idea has never been easier” (Dillen 2023). The use of GAI in ideation has emerged as a central interest of not only practitioners but also researchers (Bouschery, Blazevic, and Piller 2023; Brem 2011; Cremer, Bianzino, and Falk 2023; Kanbach et al. 2023). However, despite the attention being directed toward this highly relevant technological development, there is a clear lack of corresponding research. Indeed, an analysis of sources published up until November 16, 2023, revealed no scientific articles focusing on the influence of GAI on the ideation process of startups. This study, therefore, seeks to generate insights that will be relevant for both academics and practitioners.

8.2 Background and Related Work

The General Concept of Ideation

Ideation involves the formulation of ideas and is concerned with the front end of innovation. Ideation is a widely used term and, therefore, includes a wide range of activities. Ideation involves the creation, communication, evaluation, and selection of new ideas (Dorow et al. 2015; McMullen and Kier 2017; Shah, Smith, and Vargas-Hernandez 2003). Dorrow et al. (2015) defined the term ideation by linking it to idea generation and idea management. Gonul et al. (2019) defined ideation as the development and generation of ideas for innovation with a focus on producing a large number of novel, diverse, and high-quality ideas. Flynn et al. (2003) defined ideation as generating, creating, and deriving ideas for new products, services, and business models. Ideation is a creative and multifaceted process that can be conducted by organizations or individuals (Isaksen 1998). It involves brainstorming, conducting market research, and identifying problem-solution fits. A literature review of ideation-related studies highlighted that it is difficult to define structured ideation processes due to their creative and situation-dependent nature (Cash and Štorga 2015).

The ideation process: The dual-process theory of ideation divides ideation into two phases: idea generation and idea judgment (Gonçalves and Cash 2021). Further research by Kier et al. (2018), which discusses ‘idea generation’ and ‘idea selection,’ confirms this conception of ideation. Idea generation involves the development of ideas, while idea judgment pertains to the evaluation and potential modification or rejection of ideas (Sosa 2019; Kudrowitz and Wallace 2010).

Ideation approaches: Approaches to ideation can be structured, meaning they follow specific frameworks, or unstructured, meaning they employ a more flexible methodology. Structured methods differ between pure ideation frameworks and those incorporating ideation as a component of a broader process. The so-called lean startup methodology is a prominent

framework that incorporates ideation as part of a broader process that focuses on rapid experimentation, customer feedback, and iterative releases to refine business models and products (Ries 2011). Design thinking is a notable pure ideation framework that employs a human-centered innovation approach, focusing on empathy, iterative design, and prototyping to address complex issues (T. Brown 2009; J. Liedtka and Ogilvie 2011). The analysis in this work focuses on an examination of unstructured ideation processes that are not limited to specific methodologies, such as design thinking.

Sources of ideation: Understanding the ideation process in startups includes recognizing the sources of ideas. Kier and McMullen (2018) identified imaginativeness as one source of ideas. Creativity is also essential for ideation and innovation. Creativity is often evaluated in terms of the successful creation of novel products and overall performance (Barron and Harrington 1981). Creative imagination blends imaginativeness with knowledge to produce innovative ideas (LeBoutillier and Marks 2003; Jeanne Liedtka 2015). Contemporary research suggests that creativity is a skill that can be developed and is less linked to IQ than previously thought (Stouffer and Russell 2004). Kier et al. (2018) emphasize that creative problem solvers possess knowledge, experience, motivation, and imagination. Ideas often emerge as creative, goal-oriented responses to problems or opportunities. Market information gathered through research and analysis is another vital source of ideas (Baker and Sinkula 2009). Collaboration enhances ideation through productive interactions between a variety of perspectives and expertise. An immersive approach that engages deeply with customers is being increasingly applied to ideation. Techniques such as ‘day-in-the-life-of’ studies, customer voice research, and customer journey mapping provide detailed insights into customer needs and preferences (Blocker et al. 2011; Cooper and Edgett 2008; Griffin and Hauser 1991). Market experience is crucial for identifying trends and unmet needs and properly identifying problem-solution fits (Cooper and Edgett 2008). Entrepreneurs’ personal experiences and expertise, as well as their ability to

recognize market gaps, all contribute to the process of ideation. Experienced entrepreneurs exhibit higher levels of imagination, which positively influences idea generation. Moreover, an unconscious 'pre-selection' bias during the ideation process was also observed among inexperienced entrepreneurs, whereby entrepreneurs classify ideas as impractical, undesirable, or unrealizable based on their experiences before the ideas can be properly developed (McMullen and Kier 2017). A balanced approach to ideation source selection that considers a broad range of possibilities and involves a thorough vetting of ideas is essential (Björk and Magnusson 2009).

The Influence of Generative AI on Ideation in Startups

The following sections of this study will investigate the transformations to the ideation processes at startups brought about by the emergence of GAI.

The idea generation phase: GAI can be instrumental for startups during the idea generation phase of the ideation process. Bouschery et al. (2023) highlight the role of GAI in expanding the scope of problem and solution exploration for startups. That is, GAI's capability to process large corpora and data sets is particularly beneficial for early-stage startups, which are often limited by resource and human information processing constraints. In this context, GAI enables them to capture a broader spectrum of knowledge and innovate more effectively. The power of GAI lies in its ability to merge knowledge from various domains, enabling the generation of ideas that fall beyond an entrepreneur's expertise (Tran and Murphy 2023). Moreover, GAI can foster new idea generation by enhancing interactions between entrepreneurs and customers, as GAI also aids in tasks such as idea generation, text summarization, sentiment analysis, and customer insight generation. It acts as an assistant for teams during ideation processes, streamlining tasks and aiding in the generation of initial ideas, saving both time and costs (Bilgram and Laarmann 2023). In addition, GAI fosters innovation by providing diverse insights and generating a variety of ideas by utilizing both near- and far-field knowledge sources

and cross-domain concept associations, thus enriching the depth, breadth, and creativity of startup ideation (Haefner et al. 2021; Zhu and Luo 2022; L. Chen et al. 2019). GAI allows startups to explore more diverse and innovative ideas, which can be crucial in highly competitive markets (Zhu and Luo 2022). However, although GAI expands the creative horizons of startups, Wahl et al. (2022) have found evidence that GAI can also negatively impact idea feasibility and specificity, and therefore, GAI must be utilized carefully.

The idea judgement phase: GAI can also significantly impact the idea judgment phase at startups. Idea selection is often based on incomplete knowledge and hierarchical opinions (Füller et al. 2022; Hofstetter, Aryobsei, und Herrmann 2018; Lakhani 2016). In early-stage startups, where decisions are often more agile and, due to the scarcity of resources, less backed by research than at larger companies, GAI can provide valuable support in idea evaluation. It can also aid in product idea assessment by contributing to due diligence, competitive analyses, market forecasting, statistics analysis, and financial modeling (Kraemer 2023). GAI is particularly powerful for bringing together many ideas to generate stronger ideas and can, therefore, assist startups with idea refinement. Eapen et al. (2023) have further highlighted GAI's role in supporting brainstorming and divergent thinking for the generation of varied business ideas. It can also analyze customer feedback to identify prevalent industry trends, guiding startups to develop ideas that directly address these challenges and opportunities (Gaper 2023). GAI can help predict business idea success and suggest improvements by simulating potential customer responses and evaluations without the need for real-life customer surveys (Kraemer 2023). This benefits startups particularly during rapid iteration phases, offering time and cost savings.

Influence across ideation phases: GAI models can act as quasi-colleagues within teams, effectively bridging skill gaps and enhancing startup ideation. As Huang and Rust (2018) discuss, GAI replaces jobs at the task level. This suggests that GAI takes over more routine and

data-intensive tasks. Therefore, creative and strategic thinking, as well as collaboration, may become even more critical to the ideation process, which underscores the critical role of human creativity working in conjunction with GAI (Suh et al. 2021; Huang and Rust 2018). As a vital component of the ideation process at startups, creativity is enhanced by GAI, fostering collaboration and reflection (Main et al., 2022). GAI expands creative engagement and supports a more inclusive environment for idea generation (Weisz et al. 2022). It also democratizes access to information and knowledge and can democratize creativity to a certain extent (Chandrasekaran 2023; Kanbach et al. 2023; Thiel 2023). Kanbach et al. (2023) discuss how GAI levels the playing field in competitions over innovation by flattening educational and language disparities, allowing entrepreneurs to partially or even fully overcome their shortcomings related to knowledge and skills. GAI can enable an entrepreneur to ideate irrespective of their regional or social background, enabling amateurs and experts to compete on equal footing to a certain extent (Chandrasekaran 2023; Kanbach et al. 2023; Thiel 2023). Kanbach et al. (2023) also note the capability of GAI to combine factual knowledge with creativity. However, this should be treated with caution, as GAI does not possess adequate expertise in many specialist areas (and perhaps never will), which can lead to faulty conclusions during the ideation process. The democratization of knowledge could lead to a broader range of startups participating in ideation processes, potentially leading to a more diverse set of business ideas (Bilgram and Laarmann 2023). GAI challenges expert bias by offering new solutions and, thus, can aid experienced entrepreneurs in exploring novel ideation paths. During the ideation phase of a startup, applying GAI to structured ideation frameworks, such as the design thinking framework, requires expertise and time. Bilgram et al. (2023) explored the practical applications of GAI to innovation frameworks in the automotive sector; this is relevant to startups, as it demonstrates the versatility of GAI. GAI can be used to conduct PESTEL analyses, engage in design thinking, employ the lean startup method, analyze user journeys,

facilitate persona creation, and create interview guidelines (Basu 2023). GAI enables users to learn or apply methods autonomously, offering startups significant flexibility. Moreover, although GAI outputs can be superficial, this limitation can be partially improved through targeted prompting and follow-up questions to generate the desired output (Bilgram and Laarmann 2023). GAI can significantly boost process automation during ideation at startups by analyzing and synthesizing data-driven insights, which can lead to rapid iteration and reduced time and costs. This indirectly supports the financial health of startups, highlighting the potential impact of GAI on entrepreneurial success (Tran and Murphy 2023). Prompt engineering improves GAI output quality and efficiency (Kraemer 2023). For instance, prompts can request various solutions to a problem based on market realities according to country and user segments by incorporating behavioral and economic data. Prompts can also be refined and integrated with proprietary data. Moreover, the new ability to train a dedicated GPT to perform a specific task could also be a possible approach to further tailoring GAI to specific ideation needs at startups, which could significantly reduce the costs normally associated with customizing AI.

Out-of-the-box ideas: The effectiveness of AI-based idea generation depends on the context and available data (Füller et al. 2022). Concerns have been raised concerning GAI's ability to deliver immediately usable and innovative business ideas, as AI systems are trained on existing historical data which could be outdated or unsuited for producing new and innovative ideas (Thiel 2023). That is, GAI may be limited to producing ideas based on existing solutions (Füller et al. 2022). A study by Girotra et al. (2023) compared ChatGPT-4's ideation of business ideas to that of elite university students. In this study, ChatGPT-4 was found to have produced 35 of the top 40 ideas, indicating that it is proficient in generating feasible ideas that are attractive to consumers. While human ideas were slightly more novel, they did not always translate into

better business ideas, demonstrating ChatGPT-4's effectiveness during the ideation phase of a startup (Girotra et al. 2023).

AI-augmented ideation: The value of GAI in the AI-augmented approach to ideation lies in its ability to enhance creativity through a hybrid approach to humans and GAI. While startups have traditionally depended mainly on human innovation for idea generation and evaluation, advancements in GAI have prompted a reevaluation of human-GAI collaboration for innovation (Bilgram and Laarmann 2023). The concept of hybrid intelligence - which can also be referred to as the AI-augmented approach - represents a synergistic blend of human and GAI capabilities. The AI-augmented approach is an area of scientific research characterized by dynamic interactions where AI and human creativity mutually enhance each other, leading to potentially superior outcomes (Bouschery, Blazevic, and Piller 2023). However, the human capacity of empathy, creativity, and ethical judgment remains vital to the ideation process, and these capabilities remain largely impenetrable to GAI at the moment (Van Der Aalst 2021). According to recent findings, the future of innovation involves leveraging AI to augment human creativity rather than replace it (Bouschery, Blazevic, and Piller 2023). Liikkanen et al. (2019) suggest that GAI supports the AI-augmented ideation process but is unable to create meaningful ideas without human intervention. This approach avoids an over-reliance on GAI that neglects the critical component of human evaluation (Liikkanen 2019). GAI systems, particularly transformer-based language models, act as members of innovation teams, supporting a hybrid intelligence approach (Bouschery, Blazevic, and Piller 2023). Weisz et al. (2022) see GAI as a source of inspiration or a creative partner, enhancing startups' creative capabilities in ideation and leading to more refined products and solutions. GAI's role extends beyond augmenting creativity; that is, it reshapes social dynamics and workflows and fosters innovation and efficiency in the startup ecosystem.

8.3 Qualitative Data Analysis and Discussion

The following section, which is grounded in the preceding literature review and expert interviews, provides a structured analysis of the impact of GAI on ideation at startups according to five clusters.

Cluster A: Idea Generation Acceleration

Experts have widely acknowledged GAI's potential to accelerate the idea generation phase at startups (E1, E3, E4, E5, E6, E7, E8, E14, E16, E18). E1 indicated that entrepreneurs *"can use GAI to generate further ideas or combinations of ideas and then develop them further and can [...] come up with new ideas that you couldn't come up with yourself as quickly."* E13 added that GAI *"provides ideas on what is actually missing."* E8, E5 and E13 mentioned GAI's capability of helping entrepreneurs to obtain a first understanding of certain topics and accelerate the speed of the ideation processes for a startup. This is also supported by findings indicating that GAI-supported idea generation is associated with time and cost savings (Bilgram and Laarmann 2023). E14 added that GAI is *"nice for initial brainstorming and for identifying current megatrends."* Other experts believed that the influence of GAI on idea generation is restricted by certain circumstances. For example, E8 stated that it *"depends at which stage an entrepreneur is [at, and sometimes] responses are too generic."*

Speaking about the democratization process, E4 stated, *"You get a very good view on, for example, taxes [...] with GAI being a very experienced advisor[...] I believe that this threshold has fallen drastically"* (E4). The idea that GAI democratizes access to knowledge and flattens differences in people's skills and creativity levels resonates with findings in the literature (Bilgram and Laarmann 2023; Chandrasekaran 2023; Thiel 2023; Kanbach et al. 2023). Experts see GAI as a tool for market research. Indeed, E14 mentioned its usefulness for *"asking for statistics, but also getting a better understanding [...] of different industries."* E3 regularly uses GAI for *"desk research [...] like automatically creating a report for each idea."* GAI enables

startups to gain *"access to more information and [...] save time researching."* That is, there is no need to try to *"find the right page"* because *"all the information is in one place"* (E18). Experts like E7 perceived less potential for GAI in generating useful ideas because GAI is only good for *"brainstorming and [generating] low-level ideas for [solving] low-level problems."* E16 highlighted the need for ideation experience and added that using GAI *"makes sense for people who already have experience with ideation to evaluate whether [applied] frameworks like lean startup and design thinking [...] correspond to best practices."* Other experts have asserted that GAI is less useful for startups during the ideation process because the outputs are *"not always accurate, especially when you're trying to dive deeper"* (E14). E14 further indicated that *"turning a pain point into a business model is still something GAI cannot help you with, at least for the time being."*

Most experts saw GAI as useful for idea generation, especially for supporting market research, which is also reflected in existing literature. Some experts saw the utility of GAI as limited, and they perceived it to be mostly dependent on humans with ideation expertise, who are critical for the proper use of GAI for idea generation.

Cluster B: Idea Judgment Acceleration

Expert opinions differed regarding the potential for GAI to benefit the idea-judgment phase of ideation at startups. Multiple experts saw potential applications of GAI, particularly for the idea validation process (E6, E5, E8, E14). E6 conducted several *"validation workshops with GAI tools."* E5 saw potential in GAI for *"accelerating the speed and the initial validation of ideas."* GAI assists in idea judgment and can save costs and time while also validating an idea and *"playing the role of a potential customer"* (E5). This is confirmed by theoretical studies that underline the usefulness of GAI for centering customer experiences through simulated customer feedback (Kraemer 2023; Gaper 2023). E5 concluded that GAI has had a significant impact on customer validation, as it is able to condense the time it requires to complete validation

processes from *"a few weeks to a matter of hours."* E8 has used GAI in evaluation processes and highlighted the usefulness of *"having GAI as a partner."* Sceptic experts stated, *"GAI can provide a good first overview, but after that, it's up to the founders to validate"* (E14). E12 stated that it is important not to begin a startup simply for the sake of doing so. Rather, when founding a startup, it is important to *"recognize a real problem that a customer is experiencing and build a corresponding solution."* In this way, the inspiration produced by GAI should not be *"overestimated"* (E12). E14 stated that *"entrepreneurial judgment [...] and turning a megatrend or a pain point into a business model [...] is something which is one of the main challenges of a founder and cannot be replaced by GAI [...] at least for the time being."* E14 underlined this point from a financial perspective, stating that *"entrepreneurial judgment has become an even bigger priority for VCs to check for in founding teams"* (E14). This is also supported by theoretical studies, in which human capabilities such as evaluation, empathy, and ethical judgment are identified to be crucial to the idea judgment phase (Liikkanen 2019; Van Der Aalst 2021).

While many theories consider GAI to be widely useful for idea judgment, there is a lack of consensus among experts. This could be due to the different professional backgrounds or the different underlying use cases which, for example, vary depending on the industry the expert referred to during the interviews.

Cluster C: Generative AI as a Creativity Booster

E6 stated that *"founding startups is a lot about creativity, [...] and GAI [...] can nudge you in new directions - nudge you in directions that you maybe didn't think of before."* E8 added that in terms of creativity, *"I wouldn't say GAI can overtake [human creativity], but it can be a very cool tool for individualization."* Theoretical studies support this sentiment by demonstrating the importance of human creativity during the ideation process (Van Der Aalst 2021). Wahl et al. (2022) found that GAI can negatively impact idea feasibility during ideation. E18 supported

these theoretical claims, warning entrepreneurs to not *"rely on GAI completely"* as it is not only important to be creative but also to come up with ideas that are feasible. In contrast, E3 questioned the importance of GAI-enhanced creativity in the ideation process for startups, especially in the B2B area. E3 focuses during the ideation process *"to find real problems for customers [...] because with creative ideas you get [...] too early in the solution space"* (E3).

Using GAI to accelerate creative processes can be useful for startups. However, care must be taken to guarantee that ideas that emerge from the ideation process are feasible to realize and are focused on tackling problems in the market.

Cluster D: AI-Augmentation for the Ideation Process

Several experts have highlighted the potential for GAI to augment entrepreneurs in the ideation process. E14 mentioned that GAI can take over the role of an industry expert to a certain degree. E9 also commented on the advantages of GAI, stating that those who are not experts *"can get information about a topic that you do not know"* about. According to E3, GAI can fill in gaps in the knowledge and skillsets of entrepreneurs. E5 expressed strong support for using GAI and stated being *"a firm believer [that] augmenting [is] the rule across many different industries."* GAI enables entrepreneurs *"to augment their capabilities and accelerate the speed"* of ideation processes (E5). E1 added to this, stating that he sees GAI as a *"virtual tutor, who can then basically challenge me [...] as a sparring partner."* Nevertheless, E5 added that *"because of the exponential nature that we've been seeing with GAI, no one really knows how this will change in five years' time."* E5 saw GAI *"as a tool to augment human capabilities"* and stated that this *"will be true for the next year or at least in the short term."* This aligns with Bouschery et al. (2023), who see the augmentation of human ingenuity, not its replacement, as the future. Nevertheless, E1 showed that experts see the future differently, as they stated that *"it would be presumptuous to think that we couldn't be replaced."*

For E8, the GAI-augmented approach can compensate for the respective weaknesses of algorithms and humans, stating that combining human innovation with GAI can save time, which can then be spent *"validating what you get back as a response."* E8 continued, stating, *"If you combine the capabilities of humans and GAI, the quality is way better, [...] especially when using GAI as a sparing buddy."* E8 further concluded that GAI *"helps improve the quality of the human and reduces the time a human needs to invest"* in the ideation process. Despite these positive aspects, E8 concluded that *"you always need a human in the loop."* Theory also underscores the critical need to employ human creativity in conjunction with GAI, as well as the growing need for critical thinking in the ideation process (Wahl, Hutter, and Füller 2022; Füller et al. 2022; Huang and Rust 2018). E14 stated that GAI has its limits, especially when answering detailed follow-up questions, as it often produces less desirable output under such conditions. E14 concluded with a boundary condition *"you have to validate and double check the information"* gathered by GAI, especially when researching expert subjects.

To conclude, theorists and experts see great potential for GAI to augment the ideation process at startups. Experts tend to believe that GAI will augment rather than replace the ideation process. GAI can serve as a 'sparring partner' when exploring expert knowledge; however, information should always be verified, and in most cases, GAI cannot replace experts. However, considering the rapid pace of technological change, this may change in the future.

Cluster E: The Ability of Generative AI to Generate out-of-the-box Ideas

E5 distinguished how GAI operates during the ideation process from human thinking processes, stating that GAI *"uses math models to understand the probability of the following word"* and that, therefore, *"is not the same process as"* trying to *"understand a customer pain in a specific industry and build ideas from there."* E9, being educated in building GAI models, doubted the ability of GAI to build and invent new and out-of-the-box ideas during ideation. Referring to the technical foundations of GAI, he stated, *"it is paradoxically impossible because [...]*

mathematically you cannot train something to get an outlier." He added that GAI is *"always considering what is the most used sentence or most used word. Innovation is exactly the opposite."* E6 added that GAI could potentially even damage a new idea. E6 stated that *"it strongly depends on which kind of startup you are building."* Like E9, E6 saw less potential for GAI usage for out-of-the-box ideas but more potential for normal ideas. Second, E6 stated that GAI often does not have access to the essential novel information that experts have. E6 added that this problem applies especially to *"greenfield startups, but when talking about corporate startups, you can also use your company database and not just public information."* According to E6, *"as soon as there are best practices [for certain ideas], GAI can help you compare your ideas and help you with common mistakes or nudge you in new directions."* E8 expressed a consistent opinion but added that GAI *"can generate new ideas and new understanding and connections […] because it can help [...] detecting patterns that humans can't understand"* and thus lead to new and innovative ideas regarding hybrid work with humans. The experts, therefore, agreed that GAI is not technically capable of generating out-of-the-box ideas. The theoretical studies also cast doubt on this and thus reinforce expert opinions (Thiel 2023; Füller et al. 2022). A study by Girotra (2023) that was based on practical investigations supports this statement. However, it does conclude that the innovativeness displayed by GAI during the ideation process is only slightly inferior to that of humans, underlining the benefits of applying GAI to the ideation process for startups.

GAI is limited to the data it is trained on, and it is designed to output rather average ideas. Therefore, GAI's ability to generate immediately actionable, novel ideas during the ideation process is limited. As the majority of experts propose in the literature, the hybrid model of the ideation process can help startups create new ideas by forming a complementary relationship between humans and GAI.

A holistic view of the analysis reveals both similarities and differences between the theoretical and practical results for each cluster. It can be concluded that when deployed properly, GAI has the potential to accelerate the ideation process at startups, thereby saving costs and time and potentially improving the quality of the ideation process. The AI-augmented approach is seen by experts as a means of effectively utilizing the advantages of humans and GAI in ideation. Existing discrepancies between theoretical findings and expert opinions reflect the topicality of this research area and point to the need for ongoing research to optimize GAI's role in startup ideation.

9 Discussion

Beyond the detailed insights provided by the four in-depth examinations, there emerged key aspects and central points of discussion. This evolution of focus played a significant role in synthesizing the information necessary to address our research question: *To what extent GAI accelerates the success of early-stage startups?* This part first explores the applicability of GAI in startups, then examines the required entrepreneurial skills in a GAI-influenced landscape, and finally assesses how these elements might impact the factors that contribute to the success and failure of startups.

Finding 1: Depending on the task and context, Generative AI can range between being highly useful and harmful.

After synthesizing the findings from the deep dives, the need to examine tasks for their suitability for the use of GAI became apparent: Some are largely automatable and require minimal human intervention, others are suitable for AI-augmented human collaboration, while the remaining tasks fall into the realm of human expertise where GAI cannot help.

Highly automatable tasks: Mostly, routine and pattern-based tasks, showed potential for automation. In software engineering, GAI already excels in automating routine coding tasks,

such as customizing standard code, or generating tests by using tools like GitHub Copilot, or even ChatGPT. This significantly accelerates the development process, especially during the early stages of a startup. Industry experts even forecasted that in the near future no big engineering teams will be needed. Similar to software engineering, in marketing and sales, simple content such as emails or SEO keywords can be already automated. Furthermore, GAI-powered chatbots can partly automate customer interaction by taking care of simple inquiries. In the context of ideation, specific tasks like desk research and building market reports can be automated. Nevertheless, literature as well as experts do not recommend automating ideation as a whole process.

Augmentable tasks: Tasks that exhibit complexity and necessitate a degree of creative or critical thinking yet can benefit significantly from data-driven insights or the efficiency of repetitive processing, presenting a significant opportunity for augmenting human capabilities through GAI. In the realm of MVP development (UI/UX design), GAI shows its strength in creating interactive prototypes, conducting UX analysis, and facilitating user testing with A/B testing. Rapid prototyping and design concept generation, combined with feedback integration, illustrate GAI's ability to enhance the design process, complementing rather than replacing human creative decision making. Nevertheless, the results of this research show that the human touch remains irreplaceable in such use cases, making it necessary to constantly monitor GAI output. In the ideation and MVP development processes, GAI serves as a powerful brainstorming assistant, enhancing creativity and aiding in market trend analysis, allowing startups to quickly iterate and refine their MVPs with innovative design ideas. GAI enables collaborative ideation and can act as a coach or 'sparring partner'. However, an augmented ideation approach is best suited, which is also predicted to be the case in the near future. In marketing and sales content generation is a prime use case for GAI augmentation. Especially

regarding customer-facing and personalized content, both experts and scholars agree that an augmentation approach currently works best, as GAI hallucinates and produces inaccuracies.

Less suitable or unsuitable use cases: Areas requiring deep human creativity, niche knowledge, such as the development of highly innovative concepts or intricate UXs, or emotional intelligence highlight GAI's limitations. In ideation, building out-of-the-box business ideas that require deep expertise or industry knowledge, which is often not accessible for GAI, is still an unsuitable use case for GAI. In MVP development, while GAI assists in initial design concepts, it is limited in proposing radically innovative design solutions or understanding complex user motivations. In software engineering, effectiveness of GAI in more complex and creative coding tasks, like algorithm design or architecture planning, remains limited. Its inability to account for all edge cases or adhere to stringent industry standards necessitates thorough human oversight. In marketing and sales the personal interaction, for example in sales calls was mentioned to not be suitable for GAI, as the human touch was missing. Across these domains, the necessity for human-like creativity and innovation is a consistent theme, emphasizing the need for human insight in areas like hyper-personalization nuanced understanding and genuinely innovative product development.

Nevertheless, despite certain tasks being less suited for GAI, in a startup environment, employing GAI can still offer valuable preliminary insights or approaches to a problem, particularly when specialized expertise or resources in terms of time and money are lacking.

Finding 2: A key element of a founder's skillset is to understand for which use cases Generative AI is suitable, how it can be used and how the result can be evaluated.

The strategic integration of GAI in startups is a nuanced task, requiring founders to not only understand GAI's capabilities but also to skillfully determine its optimal application, which can

decide about boosting or hindering efficiency and innovation. This research highlights the crucial skill shift founders must undergo to effectively leverage GAI.

Understanding where to apply GAI: Founders are tasked with the critical role of identifying which startup functions are amenable to GAI automation or augmentation and ensuring these decisions align with the broader strategic objectives of their venture. Traditionally, entrepreneurs have to take over all possible roles at the very beginning of a company, which recently also includes this increasingly technical assessment, as in most cases there are no additional experts in the team. This requires a keen understanding of both the capabilities of GAI and the unique needs of their business. For instance, in integrating GAI into customer service, founders must consider the impact on customer relationships and brand identity Expert E2 emphasized that, for example, relying too much on GAI in UI design may create something beautiful with many features but not usable or value-adding for a user, as it requires someone to contextualize the UX logic.

Understanding how to use GAI: For founders, discerning the optimal application of GAI is pivotal. It is about more than just automating tasks; it is about enhancing the startup's capabilities in a meaningful way. E15 emphasized this, stating: *"Skillful use of GAI can significantly extend a founder's expertise."* However, this skill development is not without its pitfalls. Among others, E16 used the analogy of a drill: *"Theoretically, anyone with a drill can attach images, and yet one person will take longer than another and it will be the same with GAI tools",* which could possibly even lead to a slowdown of execution (E11). This highlights the importance of founders being able to use the GAI tools most efficiently, in order to unleash the full potential of GAI.

The experts agreed that the GAI landscape is constantly evolving, which also applies to the skills of those who want to use it for their business strategies. Consequently, the understanding

of how to utilize GAI is not static, but needs to be constantly re-evaluated, challenged and trained.

Skill of assessing GAI's outputs: With rising experience and knowledge in a certain domain, more and more tasks can become GAI-suitable, due to the ability of a user to distinguish good from bad results, which becomes increasingly more important with the complexity of tasks (BCG 2023). Besides that, startups must ensure that GAI's integration aligns with the startup's strategic goals and maintains the quality standards that customers expect.

Founders need to know where to apply GAI and how to use it to make sure to create and not destroy value, while knowing what results can be evaluated and what results may indeed turn out to be false. As E13 described it: *"You're not limited by ChatGPT but limited by your own awareness"*, which underlines the importance of understanding and assessing GAI outputs. Startups need to ensure they maintain a balance between leveraging technological efficiency and making use of human creativity and insight when needed.

Finding 3: Generative AI can have a significant impact on the general success and failure factors of startups; both positive and negative.

As already identified, startups often face severe challenges in securing resources, including financial backing and skilled personnel, due to their limited track record and reputation (Brush, Greene, and Hart 2001). In an environment of limited human capital, the factor of enhancing or even extending the human capital, namely the skills and productivity of the team, can be transformative for a startup. The identified use cases showed, that by automating routine tasks, GAI enables startup teams to focus on more strategic activities, fostering innovation and strategic thinking. While augmenting more complex tasks, GAI can significantly increase speed and potentially quality of work. It showed that, for example, engineers in software engineering often engage in multi-role jobs, as the limited workforce does not allow for an expert in every

field, in which case the GAI can act as a great digital tutor enhancing domain expertise (E1). In ideation, GAI enables startups to explore problem and solution spaces and oversee data and patterns that a human alone could not be capable of, and thus accelerates the process significantly (E8; Bilgram and Laarmann 2023).

Several experts fostered the idea, that startups may soon look at certain job positions being replaced by virtual coworkers, with E17 expanding on that idea: *"We see that companies are going to be made up of teams of humans and AI-agents in every function of the company."* When a startup might have the possibility to use an 'AI-agent' instead of hiring an actual person, this might put the limited access to human capital further into perspective.

By potentially increasing skills and productivity and freeing up time for startup teams, this can have a direct impact on the problem of limited financial resources by reducing labor costs (Cantamessa et al. 2018). E4 said: *"As a founder, can I save costs so well that I can perhaps position myself differently, better, right from the start? Yes, I think so",* while E14 explained that GAI enables startups to maximize the efficient use of their initial resources and delay team expansion, thereby saving costs, and expanding their runway in bootstrapping phase giving them more time to secure product market fit. Despite a more efficient use of resources with GAI, fundamental problems related to business opportunity, product, marketing and sales are not automatically solved. Artificially extending the bootstrapping phase with GAI could lead to founders not recognizing such problems early on (Griffith 2014).

The success of startups hinges critically on innovative ideas (Sevilla-Bernardo, Sanchez-Robles, and Herrador-Alcaide 2022). GAI shows potential to help founders find a better business idea through a potentially more time- as well as cost-effective ideation process by improved idea sparring, a boost in creativity, or improved market research, to name examples. However, as discussed in chapter 5.2, founders must also create distinct, hard-to-replicate business models (Teece 2010). This remains a challenge in the era of GAI, as both the literature

and expert opinions have shown, that when GAI, especially when deployed on its own, it is fundamentally limited in its generation of the for a hard-to-replicate business model required ideas beyond their training data. As discussed in chapter 5.2 research has shown that failed startups were often unable to develop a good business idea and product to establish a product-market fit (CB Insights 2021; Cantamessa et al. 2018). GAI could assist here in the creation of a business idea and product with very limited resources and no pre-existing product-market fit. An accelerated ideation process, followed by rapid prototyping for MVP development and accelerated feedback loops enabled by GAI tools shorten the time to market and allow startups to move more quickly. This agility is essential in the fast-paced startup ecosystem, where the ability to quickly respond to market feedback- and changes can result in success or failure. Especially for software products, GAI showed the possibility to decrease the accumulation of technical debt enabled by a high possibility of task standardization and automation, besides augmenting the developers. Additionally, the relationship between quality and cost is a critical consideration. E17 suggested, that even if a startup makes very extensive use of GAI resulting in only partial quality, the cost savings might be even higher, making the product less expensive and attractive to a customer base. However, E6 cautioned against the risk of a market inundated with mediocre GAI-generated products, highlighting the need for a balanced approach.

Finally, GAI also demonstrates great opportunities to streamline marketing and sales efforts, potentially allowing a small startup to reach a much larger customer base with its limited resources. GAI can increase conversion rates through targeted marketing and sales efforts and enhance efficiency and efficacy in both marketing and sales. On the other hand, the results of this research point out that GAI could also be value-destructive when trying to independently manage customer relationships or understand differentiated feedback. Additionally, E12 mentioned, that *"the potential of GAI also extends to improving supply chain operations",* suggesting a far-reaching impact on startups' operational strategies.

To which extent a startup will increase its likelihood to succeed by using GAI, can yet not be said and depends on multiple factors, which deep examination was neither inside the scope of this thesis, nor possible to determine given the actuality of this topic. Nevertheless, the results of this research suggest that this technology will be essential for founders to remain competitive: "*So I believe that the responsible founder has to use these tools. Otherwise, you will be overtaken by the people who use them. For me, that's obvious" (*E4).

10 Entrepreneurial Recommendations and Future Work

The findings of this research offer several propositions, providing actionable recommendations for startup founders and suggesting potential avenues for future research.

10.1 Recommendations for Early-Stage Startups

Identify use cases with highest impact potential: Startups should carefully evaluate which use cases hold the highest potential for impact when applying GAI. This involves identifying tasks that are both time-consuming and repetitive, as optimizing these can significantly enhance the efficiency and performance of the team, which are crucial resources in any startup. Additionally, these use cases need to be assessed considering the startup's specific objectives, strengths, and weaknesses. For instance, if a startup boasts strong engineering skills but lacks in marketing, it could greatly benefit from deploying GAI to support marketing efforts. Conversely, in areas where the startup is already strong, such as engineering, GAI can be used to automate and augment tasks, thereby freeing up valuable time for the team to focus on more complex and innovative work.

Evaluate GAI's suitability and quality: Startups should evaluate the suitability and quality of GAI solutions against their specific business needs. This includes checking the accuracy and relevance of GAI outputs. For instance, in marketing and sales scenarios, such as customer outreach, the use of a GAI sales agent might not be as effective as human interaction and could potentially harm customer relationships, whereas automating software testing in a non-critical

area holds less risk. Therefore, startups need to consider the overall benefits, like time and cost savings, against any shortcomings. If a GAI solution doesn't completely align with all needs but still offers considerable advantages, its implementation should be viewed as a strategic compromise, carefully balancing its benefits against any drawbacks for the business. This evaluation should be a constant process and is especially important for startups in areas, that have a high number of automatable tasks.

Leverage individual entrepreneurial judgement: Startups should prioritize entrepreneurial judgment for strategic decision making and recognize that pursuing unique, unpredictable paths could potentially provide a major competitive advantage. GAI lacks (at the moment) the ability to conceive innovative, unconventional strategies that stem from human creativity and intuition. Relying heavily on GAI, especially in areas requiring creative problem-solving, risks leading to predictable, statistically driven outcomes that don't stand out in the market. Entrepreneurs should leverage their judgment to steer their companies in novel, unexpected directions, capitalizing on GAI's capabilities without sacrificing the distinct, human-led innovation that drives lasting competitive edge.

Develop the skill of using GAI effectively: Entrepreneurs should prioritize developing skills for effectively using GAI models, as proficient use (e.g. through correct prompting) can greatly enhance output quality and efficiency. The more skilled the entrepreneur is in utilizing GAI, the higher the potential for productivity gains, freeing more time for complex and interpersonal business tasks. This skill development is crucial for maximizing the benefits of GAI technology.

Iterate and innovate: Startups should observe the evolving landscape of GAI models. As new and more advanced GAI technologies emerge, entrepreneurs should regularly reassess which tasks can be automated or augmented. The evolving nature of this technology means that what is not automatable today might become so tomorrow, making it essential for startups to be agile and responsive to these changes, in order to stay competitive.

Embrace opportunities of virtual human capital: Startups should embrace a mindset shift, viewing AI-agents not just as chatbots but as ‘virtual coworkers’ capable of offering diverse, on-demand operational support in various use-cases. Autonomous AI-agent capabilities are predicted to drastically improve in the future and be more accessible to startups, as they do not rely on human resources processes for hiring. However, it is important to balance their use with human input to ensure a diverse range of perspectives and to maintain a human touch where it is most valued by customers or clients.

10.2 Academical Recommendations

Startup failure rates: Analysis spanning from the 1980s to 2021 reveals a largely constant failure rate for startups, despite significant technological advancements during this period (CB Insights 2021; Van De Ven, Hudson, and Schroeder 1984). Notably, the advent of the Internet, a key shift noted by researchers, enhanced the pace of development (Baskerville et al. 2003) and changed the skills required for startups to succeed, although without affecting overall success rates. This leads to a potential research hypothesis that might be worth investigating going forward through a long-term study: Despite GAI inducing a significant transformation in the startup landscape, it may not necessarily alter prevailing failure rates among startups.

Cross-industry and business model comparison: Further research is needed to explore how the application of GAI varies across industries and its impact on diverse business models. This should include an analysis of tasks that can be augmented versus those that can be automated, as well as tasks that are not suitable for GAI implementation. Specifically, it is important to investigate whether startups with a higher proportion of GAI-compatible tasks need to apply more GAI to gain a competitive advantage. Additionally, the potential consequences of GAI usage should be examined across various sectors, such as comparing its effects in critical industries like Health Tech with those in non-critical industries.

Human capital shifts in determining startup success: Future research should investigate the evolving balance between human capital and competitive advantage through GAI utilization. This includes investigating whether startups can fully compensate for skill deficits in their human capital using GAI or to what extent it remains relevant. It is crucial to assess the continued importance of entrepreneurial skills and mastery of GAI and how these factors contribute to a startup's success. To what extent will the nuanced judgment and interpersonal skills of experienced founders remain critical to the long-term success? Will we observe a new generation of founders who are more proficient in GAI and therefore be more successful?

Capital intensity in GAI-driven startups: Future research might delve into how the reduced capital intensity, characteristic of GAI-era startups, affects their founding dynamics. This exploration could focus on whether this trend leads to an increase in the number of startups, potentially altering the traditional bootstrapping phase and influencing the duration and outcome of their runway, either by surpassing initial challenges or failing despite extended operational timeframes.

Ethical and regulatory frameworks: Future research could focus on creating ethical standards and guidelines for startups using GAI, emphasizing responsible and transparent use in business operations. Additionally, exploring the necessity and impact of regulatory frameworks for GAI in startups will help balance innovation with legal and ethical concerns, promoting safe and fair technology use. It is also important to investigate how these legal and ethical considerations constrain founders' full utilization of GAI.

11 Conclusion

This research provides a thorough overview of how GAI is influencing the success potential of early-stage startups. Recent advancements have propelled GAI forward, yet it is important to recognize that this technology, while initially impressive, primarily mimics human knowledge and behavior, often at a high level. This becomes evident through our exploration of four key

areas: Ideation, MVP development (UI/UX), software engineering, and marketing and sales, analyzed through 18 expert interviews. The findings of this research can be distilled into three main discussion topics: (1) Task suitability for GAI depends on their characteristics, such as being repetitive or rule-based. Tasks can either be largely automated with minimal human input, augmented by GAI for enhanced speed and quality, or should be left to human judgment. (2) The entrepreneur's skill in utilizing GAI tools is crucial. (3) The impact of GAI on the success or failure of startups is significant.

GAI is especially valuable for startups facing resource constraints and challenges in attracting talent. It can accelerate work processes and improve capital efficiency, serving as a versatile aid in various areas. However, its effectiveness is tied to how well it aligns with a startup's specific needs and goals and the user's ability to validate its outputs. In the startup environment, the assistance provided by GAI, even if imperfect, is often preferable to having no help at all.

This research has formulated actionable recommendations for early-stage entrepreneurs and identified future research directions. Looking ahead, there is a trend toward greater task automation by AI-agents, potentially leading to startups with entirely virtual teams comprising collaborative multi-agent systems. These systems may advance toward a level of Artificial General Intelligence where AI could surpass human capabilities in many areas. Echoing the observation of Kanbach et al. (2023) this research confirms that *"the GenAI"* is indeed *"out of the bottle,"* signifying that entrepreneurship has entered a new era where GAI is a necessity, not just an option, for startup founders. AI-augmented entrepreneurship is now a rapidly evolving reality, reshaping the entire startup landscape.

Expert 14, an award-winning serial entrepreneur and business angel, evaluated the research, emphasizing its relevance in the fast-paced GAI environment: *"This thesis is a vital guide in these times of rapid GAI advancement. Staying updated is almost a full-time job due to the actuality, rapid evolvement and lack of long-term studies on GAI's optimal use. This work*

provides practical insights for startups to strategically implement GAI without being overwhelmed. Particularly useful is the recommendation for founders to enhance their skills in GAI usage to maintain a competitive edge. My own journey with GAI resonates with the importance of skill development. Yet, the thesis rightly advises not to overlook the unique entrepreneurial judgment that distinguishes a startup. As I venture into new projects, this balance between leveraging GAI and relying on personal business acumen is a crucial takeaway. It helps navigate the GAI landscape with confidence, reducing the risk of analysis paralysis and ensuring our ventures stand out."

12 Limitations

This research acknowledges several limitations that should be considered when interpreting its findings. The scope of interview partners was limited, which may impact the breadth of insights and the generalizability of the conclusions. In addition, most of the experts themselves have a background in the GAI field or use it on a regular basis and their opinions may therefore be biased in favor of GAI. Besides focusing on high quality sources, this work used grey literature to incorporate current events and to supplement the scarcity of academic sources. Nevertheless, grey literature could introduce variability in the quality and reliability of information presented, due to the less stringent review processes typical of such literature. The analyzed business models and industry scope are broadly defined, encompassing a diverse array of startups at different stages and financial backing. This holistic approach, while comprehensive in this new research area, may obscure specific insights into how GAI could affect startups success differently based on their unique circumstances. The use cases, which this work touched upon, are most commonly found in digital startups, potentially limiting the applicability of its findings on non-digital sectors. Geographical and industry-specific differences were also left out of the discussion. This omission overlooks the diverse global landscape of technological adoption and the nuances that different regional markets and sectors could bring to the utilization and impact

of GAI. Additionally, the research did not explore the potential implications of stringent GAI regulations, which could significantly alter the trajectory of its adoption and utility in startup environments, especially with more regulations on its way. This research did not discuss data governance and ethics extensively, as the expert interviews did not address this topic in detail. However, in the area of founding a startup, these concerns should be acknowledged, even if they only become more important at later stages of a startup's growth.

While these limitations are noted, this research still offers valuable insights into the current applications and potential of GAI in enhancing the processes and operations within startups, setting a foundation for understanding the broader implications of this emerging technology in a research field that is not yet intensively research backed.

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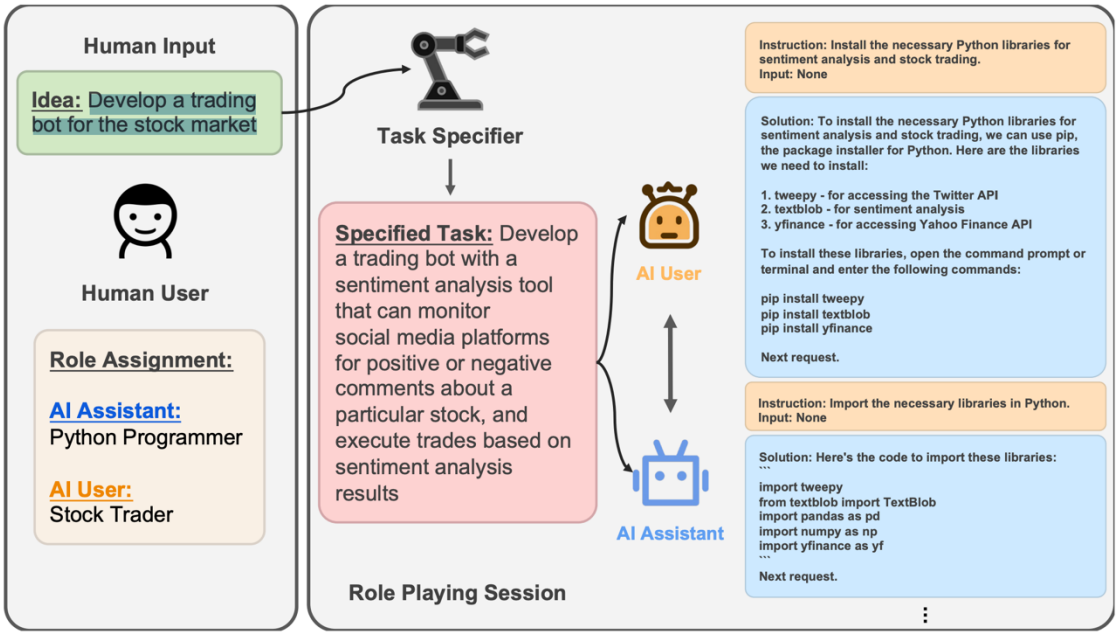
14 Appendix

Appendix 1: CAMEL Framework: Software engineering with minimal human intervention



Appendix 2: CHATDEV: A virtual chat-based software company experiment

Appendix 3: Overview Research Participants

Number	Name	Company	Industry	Position	GAI Expertise
E1	*Anonymous*	*Anonymous*	Venture Building	VP Product, Design & Engineering	Expert
E2	*Anonymous*	*Anonymous*	AI-Consulting	CEO and former Co-Founder (Ex-Google)	Expert
E3	*Anonymous*	*Anonymous*	Venture Building	Senior AI Product Manager	Expert
E4	*Anonymous*	*Anonymous*	AI-Consulting	GenAI Lead for EMEA	Pioneer
E5	*Anonymous*	*Anonymous*	Academia, Tourism	Entrepreneurship Professor, Founder, Investor	Advanced Proficient
E6	*Anonymous*	*Anonymous*	Venture Building	Project Lead	Expert
E7	*Anonymous*	*Anonymous*	Academia, Banking	Entrepreneurship professor, Investor	Advanced Proficient
E8	*Anonymous*	*Anonymous*	AI-Consulting	Machine learning (political institution), Project lead	Expert

E9	*Anonymous*	*Anonymous*	Retail and CPG	CEO and Founder	Expert
E10	*Anonymous*	*Anonymous*	Academia	Former sales and marketing leader and professer	Expert
E11	*Anonymous*	*Anonymous*	Tech	Software Engineer	Advanced Proficient
E12	*Anonymous*	*Anonymous*	Tech	Chairman of the Board, AI Expert, Keynote Speaker	Pioneer
E13	*Anonymous*	*Anonymous*	Tech Startup	Head of Sales in a Startup	Advanced Proficient
E14	*Anonymous*	*Anonymous*	LegalTech	Startup founder	Advanced Proficient
E15	*Anonymous*	*Anonymous*	InsureTech	Startup founder, GenAI Expert	Pioneer
E16	*Anonymous*	*Anonymous*	Investment, Venture Building	Investor, Product Manager	Expert
E17	*Anonymous*	*Anonymous*	AI Research Lab	CEO and Founder	Pioneer
E18	*Anonymous*	*Anonymous*	Media	Early-Stage Founder, Software Engineer	Advanced Proficient

Appendix 4: Semi-Structured Interview Guide

Intro	Thank you for agreeing to participate in this interview. We are interviewing you to better understand the impact of GenAI on founding startups. In our research, we are analyzing GenAI and its capabilities as well as common success factors and common pitfalls for startups. As it is a hot topic at the moment, we now want to complement prior research with specific opinions. The interviews are focused on the influence of GenAI specifically in the areas of ideation, product development (MVP / Design), engineering, customer acquisition, and how GenAI can impact the typical stumbling blocks and success factors in building a startup. *Our research question: "To what extent is GAI accelerating the success of early-stage startups?"* There are no right or wrong answers to any of our questions, we are interested in your own experiences.
Part 1	**General Understanding of GenAI**
1.1	Could you describe how you understand and use GenAI, particularly in relation to its function and impact within the startup ecosystem you work with?
1.2	What are some common challenges or limitations you've observed startups face when implementing GenAI solutions?
Part 2	**Deep Dive into Experiences with GAI Across Startup Domains**
2.1	Please share use cases, where GAI impacted a startup in **finding and refining a (business) idea / business model.** *Dimensions to be addressed: Quality, Time, Cost, Independence, Limitations*
A	(As a founder yourself,) do you notice differences in ideation with vs. without GAI? Can GAI minimize typical errors or problems in the idea-generation, problem-solution process, or idea validation?
B	What specific tasks in ideation have been enhanced by GAI, and where might it not be enough, based on your observations or interactions with startups?

C	Highlights how GAI has influenced the development of a startup's value proposition?
D	Industry-Specific Knowledge/ Democratization of ideation: Is industry-specific knowledge with the search and processing power of information through GAI still essential for developing good business ideas or a problem-solution fit?
E	Human Creativity vs. GAI: Do you think GAI can augment or even replace human creativity in generating business ideas?
2.2	Please share use cases, where GAI impacted a startup in **designing UI/UX** for its products. *Dimensions to be addressed: Quality, Time, Cost, Independence, Limitations*
A	UX Personalization: Can you provide specific examples of how GenAI has enabled more personalized user experience designs based on user data?
B	Prototyping Speed: In what ways has GAI contributed to the speed and efficiency of creating and iterating design prototypes?
C	User Testing Analysis: How does GAI assist in analyzing user testing data to derive actionable insights for design improvements?
D	Accessibility Enhancements: Can you discuss how GAI is being used to improve accessibility features in your designs?
E	Visual Asset Creation: How has GAI impacted the creation of visual assets (like graphics, animations) in your design process?
F	Interactive Elements: In what specific ways has GAI been utilized to enhance interactive elements within your UX designs?
G	Feedback Loop Automation: How does GAI streamline the feedback loop process in design and user experience optimization?
H	Consistency and Branding: Can you elaborate on how GAI aids in maintaining design consistency and adherence to branding guidelines?
I	Predictive UX Changes: How has GAI been instrumental in predicting and implementing proactive changes in UX based on user behavior trends?

2.3	Please share use cases, where GAI impacted a startup in **software engineering.** Dimensions to be addressed: Quality, Time, Cost, Independence, Limitations
A	Planning and Designing: How can GAI help a startup team in understanding requirements, planning software, and designing architecture before coding?
B	Code Augmentation: Can GAI make a junior code more senior, or how do you understand AI augmentation in coding?
C	Virtual Coding Team: There is code generation: Do I still need all the skills in my founding team, or can I have a "virtual coding team" now?
D	Scalability Issues: As your startup scales, how do you anticipate GAI will impact your ability to grow and manage larger teams and more complex projects?
E	AI Dependence: Have you encountered any challenges due to over-reliance on GAI for coding and development tasks?
2.4	Please share use cases, where GenAI impacted a startup in **sales or marketing.** *Dimensions to be addressed: Quality, Time, Cost, Independence, Limitations*
A	Specific Sales Activities: Based on your experience, in which sales activities can GAI be applied? Can you provide specific examples?
B	Limitations: Are there any specific use cases you know that are not able to be solved by GAI?
D	Sales Automation: In what specific areas of sales has GAI allowed you to automate tasks, and how has this impacted your team's productivity?
E	Sales Forecasting: Can you describe specific instances where GAI has improved the accuracy of your sales forecasts?
F	Lead Generation: How has GAI specifically enhanced your process of identifying and qualifying leads?
G	Personalization Strategies: How does GAI enable more targeted and personalized sales approaches for different customer segments?
H	Sales in the future: When you think about the sales function of the future, how do you think GAI will change it?

Part 3	Reflection on Experiences and Future Outlook
A	What other high impact use cases do you see, that we might have missed?
B	From your perspective, how is GAI shifting the competitive dynamics for startups?
C	What guidance would you offer startups looking to integrate GAI into their operations?
D	What are your predictions for the role of GAI in the evolution of startups, and what emerging trends might influence this trajectory?
E	What ethical considerations or potential pitfalls should startups be mindful of when adopting GAI, based on your experience in the field?

Transcripts Experts 1-18

Name	**Expert 1 (E1)**
Categorization	Expert
Description	Expert 1 is an experienced entrepreneur and AI expert, deeply involved in the startup ecosystem and now working in venture building. With a background in UI/UX design and a strong focus on innovative AI applications, he has been instrumental in developing and advising numerous startups. His expertise lies in leveraging GAI for MVP development, particularly in improving UI/UX design processes. David's insights into the evolving role of AI in startup development and its impact on product design make him a valuable asset in the tech industry.

DISCLAIMER: Translated transcript – Original language: German

Interviewer

That's why we have based our research question, I'll try to put it a bit in German, on how GenAI changes the abilities of founders with success or failure factors in founding a startup? In the questions I'm about to ask you, of course, there are no wrong or right answers. I try to formulate them as neutrally as possible. Generally, maybe again for you, we want to investigate different dimensions, both the temporal dimension, resources like costs, but also things like quality of course at the end of the day. So maybe just to start off with. Could you describe in a few sentences how you understand and use GenAI so far, especially in terms of its functions and impacts within a startup ecosystem? You have experience as a founder.

Expert 1

Yes, here in the Bridge-Maker context, when it comes to venturing and the processes involved, we've been using GenAI since January this year to support processes that are internal, our own processes, things we do. And in the startup environment or where I still participate in individual startups as a business angel and also get involved in product and tech roles, there I bring it with me, how they use it there and how it changes the processes. So all internal for our own processes, for our own use of artificial intelligence or generative artificial intelligence, and not as technology to make products out of it to sell. So I see myself there as a user or my teams or people as users of this technology. Perfect.

Interviewer

That's great for the further questions that will come now. If it's okay with you, I would like to divide it so that we look at all four areas, so once ideation, once MVP, or the product development side, then separately from that the coding side, so engineering, and lastly marketing and sales. Then I will ask a few questions for each of the individual areas. Perfect. Okay, then let's start with ideation or conceptualization. Could you name use cases where Gen AI has supported or can support a startup in finding or validating an idea or a business model?

Expert 1

Yes, actually also in the application, just in idea generation, that you let yourself generate further ideas through the use of GenAI, especially GPTs, or also combinations of ideas that you have, and then, depending on the quality level, continue to work on them. But what comes out nowadays is very helpful, that you don't overlook anything and partly really come up with new ideas that you wouldn't get so quickly yourself. This sitting in a room, workshop, collecting

ideas, the frameworks that exist for it, I think you can cover very well today with GenAI-GPTs. It works very well, a huge time gain. Hmm.

Interviewer

What specific tasks in the whole process, would you say, have been especially improved by GenAI, so you've already mentioned the time component, and where might it also still not be enough, based on your current experiences?

Expert 1

So for idea generation, the level of creativity is already great. Can always add something on top. There is no right or wrong there. Either many new creative ideas come out or not. And we can also go to the absurd. That works. Whole area of image generation, the standard programs, the standard trained ones like DALL-I, up to Mid-Journey work to a certain extent, but are also quickly recognizable as generated. If you really want to generate targeted images, then you have to switch to something like Stable Diffusion, which you install locally and possibly even go into training yourself, and then you can really generate very targeted images, control it, and then a graphic designer can say, this is what I want, that works. So it also works, but not out of the box and own experience, you sit on it for a month to have your own models generate the images I want, that it really then becomes an acceleration and added value. And these are then but a basis. Then an expert, a graphic designer, a designer must still approach. So they are then not yet finished. Okay.

Interviewer

If I now look at it, so to speak, from the perspective of a founder or from the perspective of a startup that is just starting out, would you say that Gen AI can minimize typical mistakes in this process, i.e., idea generation, problem-solving process or validation, and if so, how?

Expert 1

Yes, I can just prime in GPT or say, take the role of a sparring partner and also give very targeted templates, frameworks in there and let myself be challenged, that I am basically in coaching. Can pitch my own startup idea. Opposite this virtual tutor, and he can then basically challenge, point out things to me, and I can engage in dialogue. And if I'm really tough on it, I go into such a Socratic dialogue, which never stops, and I am always further questioned, why, why, why. Yes, that helps. Definitely. And just as well I can also prepare for pitches, can say I will pitch in front of and can then specify it in the GPT, say, this is the and that person with the and that role, the and that expertise. Please take this role and start challenging me.

Expert 1

That also works very well. So training for pitches, also great. Very good example. Thank you.

Interviewer

Maybe one last question about the ideation part. I always find this a very good question. You just mentioned it lightly. How do you see the relationship human creativity versus Gen AI? Do you believe that Gen AI only complements human creativity in developing business models, or do you think we are eventually at the point where it can be replaced?

Expert 1

It would be presumptuous to think that we could not be replaced. It's just a matter of time. Yes, it will happen. Yes. Interesting, interesting.

Interviewer

Cool, then let's move on to the next topic, namely design and product development, everything around the topic of MVP, UI, UX. Do you know of use cases in this area where GenAI is used in a startup or in the founding, in the design of UI, UX to support?

Expert 1

No tools yet where I would really say they bring speed or at a level that I can replace a human component. So yes, various tools constantly in testing, but in UI, UX it's mostly frameworks or templates. That are used and then adjusted a bit to the inputs I make. But in many cases, you can't really talk about Gen AI, otherwise it's a small algorithm that adjusts a few templates. So I'm on the knowledge or I don't know any tool yet where I would say, this is really a significant progress or helps me. So for small things like logo development, yes, that works to a certain extent. But really building a complete UI for a product, not yet.

Interviewer

If we now assume a digital product, whether it's an app or a platform, and look at the dimension or challenge of personalization, would you say that Gen AI can help personalize a design, i.e., create a personalized user interface?

Expert 1

Certainly a product that would still need to be built, but would of course be super interesting, not even statically in advance, but that an AI would be able to make a permanent adjustment of

the UI or UX for individual users. That you say, we have a framework here, I go in, the system learns and over time each user has an individualized interface. That would be nice, yes. Could be built. Definitely.

Interviewer In terms of MVP development or prototyping, especially with regard to speed, have you already had experiences in how far Gen AI can contribute to the speed and efficiency in creating and iterating design prototypes? No. Haven't found anything yet.

Expert 1

So clearly, in tools like Adobe Photoshop or Firefly I can get a little help in small steps, but basically a whole... Prototype or a visual prototype is created, not yet. No.

Interviewer

So, if I understand you correctly, you see it, so to speak, in different steps and at the first step, in the visualization of a prototype, you see Gen AI as a supporting tool, let's say, in the application for initial visualization, but not yet for the whole process. Not yet.

Expert 1

So we're definitely moving towards that, but I don't know any tools yet that we can use for that. Correct. Okay. Topic feedback loops.

Interviewer So, when developing an MVP or a prototype, user feedback is incredibly important. Do you think GenAI can help streamline the feedback loop process, or make it more efficient in terms of design or user experience?

Expert 1

Yes, definitely I can create personas that I manually create, digitally through a Gen-AI and also depends on the form of interaction. In text form it already works. Can I then say, dear Gen-AI, take on this persona role and give me feedback on the following. In text form, it works. Quite new in Chat GPT-4, if I can upload a picture, we are also already trying. Also works. That I say, you are the following persona, look at this, challenge it works. Yes. So, standard feedback on a persona level works very well. Surprisingly well, yes. Interesting.

Interviewer Would you otherwise have, perhaps from your side, an input or an addition to the topic of MVP development with the help of Gen AI? What are your thoughts on it?

Expert 1

What we actually exploit or use, what we are actually already using, is the prioritization, that when we have a backlog of ideas for the MVP that are supposed to go in there, it's actually, if you're a very senior product manager, you can prioritize it very well based on your experience, what should go in there or not. If you're not senior enough yet, GAI is actually a very good help in the support, in the prioritization. Yes, feature prioritization.

Interviewer

Okay, so would you now relate feature prioritization to design features or idea generation? Completely everything.

Expert 1

Really from design over product to business ideas. Everywhere. Okay. Interesting.

Interviewer

Then let's move on to the next topic, namely coding and engineering, as we like to call it. Again, taking into account quality, time, costs, or certain dependencies that may arise or perhaps be resolved. Topic virtual coding team. Do you still need all the skills of a founding team in terms of coding or engineering, or do you think a virtual coding team with the help of GenAI can replace that? Replace I don't know, but supports very well already.

Expert 1

Practical experience actually in system architectures. If I am able to draw up a system architecture, I can really make it available in visual form, also like the OpenAI Chat GPT-4 and can get feedback on it. That works very well, that you don't forget certain things, overlook them or also get a challenging there, critical questions to, works great. If I have no idea about system architecture and say, please, build me one, it is very generic. So not replace yet, but a very good addition in the area of QAV, system architecture, for coding itself programming, yes, of course. So who doesn't use AI today, no assistants, or co-pilots, as it's always called in that context, should actually do it. Yes, so it's actually unthinkable without it.

Interviewer

Do you think we are already at a point where someone with zero experience in coding, let's say I stand up and say I want to program a product, or an interface, a page, just with the help of GenAI, would that be sufficient to eventually present a successful product, or would you say it's just a part of the whole?

Expert 1

On a proof-of-concept level, it has actually been tried out. A small task with teenagers, which was to take news from the Twitter feed and have them all run on a website as a sort of wall, being displayed and updated, and building up nicely, and you can zoom in a bit. Yes, also here again with JetGBT, to get it done completely in one day without having written a single line of code before. Yes. You mustn't give up, even if it doesn't work. Debugging, you have to understand the concepts a bit, but you can have them explained, that works. Is it a completely finished product with which I can already make money? No, it's not. So, getting a prototype-level idea up and running, to test it, if it's not too complex, that's already possible, yes. But that means, if I understood you correctly, you also said it's good to understand the process or the individual steps.

Interviewer

So, if you have a little understanding of what you're actually doing and what it tells you now? It makes sense if you know how to use GenAI, for example TechDuty as an assistant, to have the individual steps explained to you, to challenge them, right? Exactly.

Expert 1

So, especially in programming, you can go very deep into the technicalities and have code explained to you, show alternative solutions. Debugging works great. auton Definitely, yes.

Interviewer

And if we look at the whole thing from a cost perspective, startups always struggle with the fact that the budget is limited. Now in venture building, we have the resources of the corporate, but even there, resources are not released without limit, so to speak. Do you think Gen AI or the

development of Gen AI has a certain influence on how faster, better, cheaper software or a platform can be engineered? Yes, definitely.

Expert 1

So, even the individual developer, right down to the bottom, gets much faster. Up to, as a founding team, whom do I need, what are the right steps, what does a roadmap look like, does this or that task in software development actually take three weeks or three months. I would have had to ask an expert for that before, who might be available to me cheaply in some context. If I don't have them, I have to buy them in. They are then quite expensive. Yes, it is a huge cost saving and then indirectly also a time saving and thus again a budget saving. And the current costs that we have to pay for it are ridiculously cheap. So, anyone who operates in this field, currently, I think, 20 euros that you pay for a private account. It doesn't get any cheaper than that. So, I have already done more in a day. Yes, definitely.

Interviewer

Would you also say that there are other major challenges, maybe in terms of a certain dependency on GenAIl in the area of coding or engineering in development?

Expert 1

Yes, I suspect it's an unqualified statement, but some areas in development, that they are completely or that they are handed over to GenAI, that you say, certain concepts I don't have to dive into so deeply or how do I approach something in a structured way, that I hand it over. Of course, there will always be experts who are much better, who you also need for certain tasks. But I believe many tasks in the programming environment can be well implemented with GenAI at least as a co-pilot. And as a developer, I don't have to dive so deeply into things or concepts.

That's maybe comparable. In the 80s, 90s, we had to learn machine code to get any line of text on the screen at all, to move registers in memory back and forth. As a programmer today, I don't have to do that at all. I have several abstraction layers over it and maybe still operate object-oriented. And even this layer, I can take it away, so that as a non-computer scientist I can program. Yes, of course. I believe that will not take much longer. Then I can formulate in colloquial language what I simply or what I want. And if it's not too complex, I will then get it as software. So, can I as a non-programmer develop software? Yes, we are already there. It's starting. Yes. Can it become a dependency? Yes. Yes.

Interviewer

Do you see this as a risk, or rather only advantages or predominantly advantages?

Expert 1

If there's no one left in the world who bothers to dive in and program and work so deeply, then we have a problem. But I don't think that will ever happen. Risk. I think the opportunities are much greater than any dependencies or risks. Risks I would rather see in the area of control. So, if you don't manage to create secured frameworks or rules, then a calorie can of course get into areas or areas where it gets a bit more critical. Or where you say, so, oi, we should at least set up a rulebook.

Interviewer

So, that would actually be a topic for a step before the actual application, right? So, that the framework conditions are already created before the user starts in the application, right? Exactly.

Expert 1

So, I start with little things, that if I use AI in my processes, I have to document it somewhere or also communicate it. And if I offer a service and there's AI involved somewhere, then especially so. And if there's still a human-in-the-loop somewhere, to record that and say, it's not completely controlled by AI. Just documenting and making transparent is already the first step. Very, very exciting.

Interviewer

Let's move on to the last part of the process, everything that has to do with sales and marketing activities or also customer acquisition. What would you say, in which sales activities or sales activities can Gen AI be used from your experience? Do you have specific examples of how you or how you use it?

Expert 1

Everything in the area of text generation, marketing texts, so at the end of the chain, works wonderfully. So, I would be surprised if someone doesn't use it today. So, up to strategies, what is my marketing strategy, in which steps do I want to roll out something, Gen AI can also help me a lot. And on the technical side, what we try are such scrapers, to gather things, data, to put them together nicely. For that, I don't need a developer anymore. I can actually do it in dialogue with the Gen AI myself, through the connection or modules.

Interviewer

That would have been my next question. So, to combine data from different interfaces and then process it with Chat-GPT, so to speak. So, exactly.

Expert 1

Data acquisition and data harmonization can now also be done without a developer, yes. Topic of lead generation.

Interviewer

How would you say GenAI has specifically improved the process in identifying or qualifying leads?

Expert 1

In principle, data analysis, so that if leads come in, in whatever form, the information can be evaluated. I don't have to do that manually anymore, I can use a Gen AI for that.

Interviewer

That actually ties into the next question a bit, about personalization strategies. Marketing is all about personalization. How would you say Gen AI enables more targeted or personalized sales approaches for different customer segments, for example?

Expert 1

In principle, the entire manual work can be replaced by AI. When I say, this is my target group, this is what I want to sell and generate marketing material, addresses, email addresses, chat addresses on LinkedIn or similar for me, I can have it all generated. I don't have to do it as a human anymore.

Interviewer

How would you see the whole thing in the area of sales automation? So, can Gen AI help me automate my sales process from A to Z? And if so, what would that look like, for example?

Expert 1

I can't give a qualified answer there. Do you have an assessment or an idea? So, of course, it depends extremely on what kind of sales process it is, whether I have physical goods somewhere or something digital. But that's just an assumption. You can certainly automate individual steps and everything that has to do with automation can then be individualized by a Gen AI. So. That would be my approach.

Interviewer

If we now consider Gen AI as an individual part of the company, do you think we are already at a point where Gen AI can be used in a sales environment all on its own, so to speak, with little or no control, or would you again be on the topic you mentioned before, under certain conditions?

Expert 1

So, I would try to build in control mechanisms, but also automated ones, so that there's always a moderation layer over it, but that works rule-based, completely automated, and then it again depends on the product. If I want to sell a merchandise product, a textile or something, then, no matter what, I would probably let it run. So, at least with such a moderation layer. And if it's some kind of medical product or something very high-priced or so, I would at least still have the moderation layer manually. Human-in-the-loop, who looks over it again and says, everything can be prepared, but there is still human control. I would weigh that product-

dependent, but there are definitely use cases where I would say, completely automated and Gen AI produced and controlled. I don't have to look over it at all if I go for mass production. Okay.

Interviewer

Thank you very much for your assessment of all the areas and for answering all the questions. In the end, we would now like to address two more topics. A little bit the question, do you see any other important use cases that we have overlooked now, or what would you say, where should we look again very carefully in our research or also in our master thesis?

Expert 1

An experience or a thesis that I had, which is now increasingly being confirmed, is essentially a learning effect and this scissor effect, which we also have in other areas of society. There's such a large area that uses GenAI to make work easier. To let things be done that I then don't have to do myself and thereby gained a little time and can do other things. So. Fits and very specifically, like a teenager is in high school and says, oh, I have to write an essay. Okay, the AI does it. Great, thanks. Hands it in. Works, checks it again. Everything's fine, has gained time and can play an online game again. And there are others who say, no, no, I do the tasks manually. Let me be tutored.

Expert 1

And then I have the task finished and now I hand it in. And to GenAI. And says, hey, you are the teacher, challenge it, give me feedback. And says, the system here and here, that's still inconclusive. Then, thanks, goes in, reaches his limit. And says, then maybe has fun learning, gets better and better. And says, not enough for me, explain it to me. Don't give me the solution, but lead me to the solution. Those who then become smarter and smarter in their field of

expertise. Build new expertise and maybe even become better than the teaching body and enjoy it. So far, I have only met these two areas. The people who use it as a product, consume it, is okay.

Expert 1

And the people who use it for themselves, this upskilling, I'm getting better and better, I can suddenly learn things that were previously denied to me. And that becomes more and more clear, goes further and further apart. I believe it will be the same in the professional world. There are people who rationalize themselves away and those who get better and better. Sure, they use it for automation, but reach new expertise very quickly in areas that were previously closed to them. Very interesting view of the topic.

Interviewer

That actually fits very well with the next question actually because I think you can relate it to that quite well. What advice would you give to a startup that wants to integrate Gen AI into their business or into their processes?

Expert 1

So, the first use case should always be to get coaching. So, what you would otherwise have to put together laboriously, or so, hey, maybe I have a chance to catch someone at Y-Combinator who gives me half an hour and feedback. So, that already works very well when you say, so, hey, you are now, want to use Gen AI someone from Y-Combinator, their terminology, their framework, their approach, and take apart my pitch deck. So, that works. Therefore, definitely use tutoring, coaching, challenging. And the more specific I am, the better it works. So that would be the crucial part.

Interviewer

So, you see it more as, so to speak, in terms of the application by startups, not in terms of, it now replaces, I don't know, a whole team in the various areas, but rather as support, as a co-pilot, as an assistant. But it still makes the classic functioning team necessary.

Expert 1

Yes, indeed, as an assumption. We are probably going to reach a point sooner where individual roles can be completely replaced. Which roles can we replace already? I believe, the coach, the supervisor, the mentor. That already works very well.

Interviewer

If we look a few years into the future, perhaps it's not even years, but rather months, what would be your forecast for the role of GenAI in startup founding, in the founding process, and what new trends do you see increasingly influencing the development?

Expert 1

Of course, there is Gen AI or AI in general as a product, with which new products can be built, something previously only tech-heavy startups could do. So, there will probably be many new ideas based on this. And as an application, as a tool... Yes, expensive expert knowledge is becoming cheaper. So, one result of this could also be that we have a lot of rubbish. That is, many startups, ideas, small one-man startups, to put it bluntly, without intellectual creation. For example, we have new AI tools every day, many of which are just a small layer on top, where one might say, okay, that's not so interesting.

Expert 1

And this will of course take on another dimension, that many more small ideas, which actually have little justification, get a very nice package, making people think, wow, a super great pitch deck, great graphics, the slogans fit, the business case looks great, but basically, it's all completely generated. It will become more difficult to differentiate and recognize good ideas because there will be a flood of nice-looking, seemingly relevant startups, or at least pitch decks, happening already. In my role as a Business Angel, I get, in the past, one could always immediately see from the pitch deck, like, okay, or there is a great idea in it, but it's not well designed, but now they are all like created by professionals, the storyline fits, and they should all be top opportunities. And then at some point you realize, I think, that it's more or less generated. So, the selection... Yes, the selection becomes more difficult because it's much easier to get nice-looking pitch decks or pitches. Like before, I needed an incubator to help me with that. The tutor who rounds out my pitch deck, who asks the right questions, I can do all of that completely automated. So, to a certain extent, I can get by without intellectual creation. On the other hand, it becomes more difficult to find the pearls.

Interviewer

If I translate that now for our topic, we are looking at how far Gen AI can influence the success of startups. You would say, if I understood you correctly, yes, it helps in the whole process, but the problem-solution-fit relevance remains unavoidable, that one challenges it, that one somehow finds the right approach. In the end, to be really successful and relevant.

Expert 1

Yes, I believe, to a certain extent, one can get by completely with GenAI more than before. It will also keep getting better, I believe. But the last step to success, I suspect, will still be for a

while that one needs a creativity that cannot be completely generated by the statistical parrot. But maybe there will come a point when even that is possible. That there will be a startup that is completely conceived and implemented by an AI, where the human component actually plays no role. It will certainly come, I can imagine. But I don't know when.

Interviewer

I am very curious to see if we will experience this, and if so, in what time frame. Last question to conclude. We would also like to have a self-assessment at the end, regarding Gen-AI usage or experience. So, we have divided the expertise or possible expertise into four categories, and I would ask you to say at the end, which category you would place yourself in. I will read out what we have. Beginner for Gen AI, so you have basic knowledge, theoretical understanding, but no practical application experience. Advanced user, you have practical Gen AI application experience, understanding of possible business case applications, but sometimes need support in application. Then, third category, expert.

Interviewer

You have comprehensive Gen-AI experience, which also includes the implementation of business solutions and possibly advising and training others. And as the highest possible category, the pioneer. You are a pioneer in Gen-AI applications and have already changed or created business models with it, possibly even setting industry standards with your work. So, to summarize. Beginner, Advanced, Expert, or Pioneer?

Expert 1

I allow myself to classify myself as an expert. With great certainty, that fits. Pioneer, we will see what we manage to do in the next six months. Yes, interesting.

Interviewer

I would have thought that you would classify yourself as a pioneer, but I understand that one might be a bit more reserved. But it certainly fits as well. Thank you very much for your time. It has helped a lot to get a better understanding of the different areas. You experience me very reserved. I naturally try to leave you the space to answer, since I have to hold back a bit, as everything is transcribed and would otherwise flow into the evaluation if I express my opinion here. But yes, it was super interesting, super helpful. If you think of any aspect afterwards that we should definitely address, then I am grateful for any input. And otherwise, I will of course gladly send you a digital version as soon as we are finished with the evaluation and the conclusion of the work. Very gladly. That is a super kind offer. We will gladly do that.

Name	**Expert 2 (E2)**
Categorization	Expert
Description	Expert 2 is a seasoned UI/UX designer and AI automation specialist. Beginning his career as a freelancer at a young age, he later interned at Google and founded a UI/UX agency that evolved into a successful startup. Currently, he leads an AI automation agency, focusing on enhancing business growth strategies through AI. With extensive experience in MVP development and a keen insight into the interplay of AI and design, Bjion offers valuable perspectives on the future of UI/UX in the AI era.

Interviewer

Like some kind of no, but currently I'm living in Paris. I'm working here as a founders associate

for a small startup, but I'm still also doing writing my master's thesis and that's where you come into play. So thank you so much for taking the time today to have a quick chat with me, maybe one small introduction about myself as I already wrote you that I'm writing this thesis about the topic of gen AI and possible effects or leveraging possibilities, especially for startup founders, and I think you are one of those. And I'm specifically focusing on the effects that Jenna AI might have on the MVP development process and specifically UIUX. So maybe you can first give me a brief introduction about yourself and where AI came into your life or what your position is currently.

Expert 2

Yeah, so I started designing when I was probably 1415 and after that I was freelancing right through from 1415 to 20. Then I interned at Google. Then I left Google. No, sorry, I came back to university, finished off university and went back to Google. Then thereafter I created a UIUX agency and then ran that for two years. That pivoted into a startup and then ran that up until May last year. So you're in luck. I've been through quite a few MVPs and design stuff and yeah, so now what I'm doing is an AI automation agency. So what we basically do is we go into companies and we look at what their top performing growth strategy is and then we see how AI can replace it. So say for example, you were to say to me, or for the startup that you're working for, the way that you get your customers is by writing really hyper personalized emails. What I would then do for you is I'd say, okay, you're doing 100 a week. Well how about we do 1000 a day and I build the system to actually send 1000 a day. Then it's a case where I would actually show you how to get hyper personalized data on who you're reaching out to at scale. And then we would go to the creative. So for example, I could say to you record one video, let's say it's a demo video saying this is what we do as a startup. Nice to meet you. I can personalize the first 3 seconds of that video so it says hi fabi or hi beyond or Hi John or and so you can

basically send a thousand emails with a thousand different videos, all hyper personalized to each individual. And so that's what we do in a nutshell. Despite my background, we're not actually like I would call it a design or AI design company. We just build systems that increase output or efficiency or save you loads of time. So that's basically what we do in a nutshell.

Interviewer

So if I understood you correctly, you would say that Genai could speed up the process of MVP designs. For example, for early stage startups or for people that are about to launch a startup. Right. So you can help them enhance the process of building MVP in the first place.

Expert 2

Yeah, personally I wouldn't because we're focusing on B, two B sales teams. However, it's a case where yeah, I could if I wanted to. So the design space has changed a lot over the last nine months as a result of AI, both from the design perspective and the development perspective. So creating design mockups now is so much easier. So much easier. The biggest issue when you're designing something for a client or even for yourself is getting is a space between actualization and the brief, if that makes sense. I might say that I want XYZ, but in order to get it to something which is actually visible before this time last year would take you a minimum of, I would say 5 hours or so and that would get you one draft. Now what you're able to do using mid journey and mid journey is probably the best one for it is to generate a draft within seconds.

Expert 2

However, that's not the full story because the issue with Gen AI is that it creates something which is beautiful but it doesn't create something which is actually usable. And someone outside of design would make that confusion because they see all the nuts and bolts of what would

make up something which would work, but it doesn't actually work. I'll give you an example, right? So it might have all the toggles and buttons one page, for example. However, in reality, if you were to use that app, you would just get confused. It would be so difficult to use, it would be rendered impossible. And so what AI is very good at is copying stuff which is good looking. And so, as I say, this is why designers haven't been replaced yet is because you still need someone to make up the logic of the user experience.

Interviewer

Point of and make it like human. Right?

Expert 2

Exactly. However, AI still solves a massive problem. This has come from designer because what used to happen is it used to take me 5 hours or so to show or to go onto Pinterest to get all these design ideas and then show a client and then keep going back and forth until were both aligned on whether this is what they want. However, now I can get there a lot quicker. And so, technically, the process has drastically improved. But is it the all in one solution? It should be no. However do I think that will change within six months? Yeah, I think within six months, you will be able to type in, create me a recipe app, and the whole thing will be done for you in a few seconds. And I think sorry if you know any designers or you thinking of going into design, but I think it's a scary world for UIUX designers, and I think you're going to get what you got with Copywriters, where copywriters swore blind that they would never be replaced. And the issue is, 95% of them are replaced, and the 5% who aren't replaced are the top five in the first place that are top five of their field. And most of what they do is actually not related to copy at all. It's actually related to their understanding of psychology and how to pull the strings of the human psychology and say, okay, so this is your pain point, because you're the head of

sales at a real estate company, you're going to go to a conference, and you don't want to be the one left out the AI conversation because it's a hyper competitive environment. Oh, so that's something that we could actually put in copy. The stylistic thing to actually put that in copy or the thought to actually write that out has got nothing to do with how it is manifested. Do you get what I mean? As in how you actually write it out. It all came from the fact that you understand how people's brains work, which, to be honest, AI is going to get to a point where it can replace that.

Interviewer

But I think, like, we're not there yet.

Expert 2

No, we're not there yet. And I think I also think there's a lot of politics which is involved as well. And what I mean by that is no matter how good AI gets a company at the size of Deloitte, Coca Cola, Pepsi, can you imagine a world where they're going to do a 300 million advertising campaign and they're just going to say, okay, look, let's just use Chat GBT. It just doesn't happen and it won't happen. And that's why these copywriters will still get paid. Even if they were just to turn up and say, hey, I'm the guy, leave the room after they've done the workshop and use Chat GBT. I just feel like there's a lot of politics and human habits that have to change before AI will ever fully take over.

Interviewer

Yeah, that's actually a super interesting consideration. So trying to break it down to what you said at the beginning. So from a time perspective and a cost perspective, would you say that in the first place, for startup founders, it can increase the process or improve the process in terms

of potential time saving. Potential cost saving. But in the next stage you would say there's still this humankind component needed to really success with an MVP, right? In terms of UI? UX.

Expert 2

Yeah, absolutely. So you're basically saying, do I think that there needs to be the two.

Interviewer

To like actually I'm trying to understand the different dimensions that can be taken into consideration when talking about Gen AI effects for startup founders. So I'm trying to understand if there's a potential advantage in terms of cost saving, time saving, but of course, what else is there? Does it also improve the quality of an MVP? You just said yes in a certain way, but it's not guaranteed that is actually needed or everything that AI creates as an output is what the customer wants.

Expert 2

If I understood you right, yeah. The good thing, when you increase the speed and you lower the cost, you're able to iterate a lot quicker. And that is one of the most important things to creating a good MVP or product. Back when I was running my startup, for the first three months or so, we kind of built, not blind because we did actually have a user group that we kept going back and forward to. But what we did was we started off with that user group, then built for like a month or two, then came back to them and the feedback loop was too wide. Then we changed our process to doing it on a weekly basis. So okay, let's build this, let's test that little change and then we kept going back and forward. Now, because Gen AI allows you to not only make it a cheaper and quicker loop, you're able to get those iterations a lot faster.

Expert 2

Because think about it, previous to Gen AI, if I wanted to make those changes, especially as a startup, you have to pay a designer, you have to pay a developer to make any of those changes and that can be three to 400. Well I mean more than that, sometimes maybe even the thousands and that eats away your budget. But you're telling me now that with Genai can make that with a fraction of the cost. It's a case where that has a direct relationship with the quality of it because the more you work out the weeds of your design is, the better it gets. And the thing is, as a designer, watching any user testing video or watching user testing, you pull your hair out because you're just like, how the hell does this person not understand exactly what I just designed? And the thing is you don't know those things until you put it in front of someone. So the ability to put it in front of someone for a fraction of the cost and quickly make those changes, yeah, it really changes the game.

Interviewer

And do you think looking at the other side, like the big corporates as you just mentioned, Coca Cola, Pepsi, for example, do you think that new startups will have now an advantage in terms of leveling the playing field? Because previously also you just said it like you have to pay a lot of designers, spend thousands of dollars into design stuff. Do you think there's a chance for startup founders to get into the market quicker and compete with corporates, with their MVPs?

Expert 2

Yeah, I do and then I don't. So I do because I do think that speed to market is a massive advantage. And I think you've seen that already with all the AI startups that have popped up over the last nine months. However, and this is a big however because look, most people think that the success of a product is based around how good the actual product is when it's not. The reason why I say that is Coca Cola have so much distribution that there's no product you could

ever build that would be able to, like there's no good tasting cola that would ever be tasty enough to dethrone. Them overnight or even in five to ten years because they have so much marketing budget that they would just wipe the floor with you. And I think it's an interesting topic because if you think about Gmail, for example, how many startups, AI startups did you see where there were like AI email assistants and all this kind of stuff?

Expert 2

Then they all died overnight because Gmail basically said, okay, now we're going to integrate AI into Gmail and the same thing is going to happen with Google Docs all it takes.

Interviewer

So for you, the trust component and the credibility of the big corporates is still way more bigger than those of the newly founded startups, right? So if I come into the market and saying I'm the best person that is out there creating AI assistance. You would say once the bigger corporates are taking this into their portfolio, then I have no chance at all.

Expert 2

Yeah, I do think it's a pinterest. I do think the 1% do make it through, but I do think it is the 1%. And the thing is, I don't even think that it's so much brand. I think it's more distribution and where they've built themselves into people's lives already. And what I mean by that is if you're going to write an essay, the first thing that comes into your head is, I'm going to open Google Docs or I'm going to open Microsoft Word or Edge cases, okay, I'm going to do it in notion. But you have a before AI came along, everyone had their word processor. Now all these new startups, it's like the shiny toy syndrome. You're going to jump to them and you're going to try

them out and you're going to say, okay, this is super cool, but habit is a thing you're always going to go back into, okay, this is what I feel suits me better.

Expert 2

And that's why these new products have to be 1020 times better because they can't destroy the mental walls in your head to say, okay, I'm actually going to switch my whole habit to move over to these new things. The reason why things like Uber came about is because Uber is 20 times better than standing at the side of the street trying to hail a cap. You can literally just open your phone and it's that easy. But do I think that these new AI startups, like, say, for example, an AI email writer, are going to be 1020 times better than Google's version? And even if they were like, if Google is doing it, why do I need an extra Chrome plugin just to add more fuzz to my life? And I think that's why I think that a lot of the stuff that's happening with a lot of these sasses and tools, they're amazing.

Expert 2

There's a lot of cool stuff and there's amazing founder stories as well. But I just do think that a lot of them are having their day. But I mean, it will be a day.

Interviewer

Yeah, I understand. One more question regarding the quality dimension because you mentioned it earlier during the tour. So do you think that or what would you say for a potential founder? How can a potential founder ensure that the MVP's UI or UX, driven by gen AI, resonates with their potential target audience? And it's not just like randomly created. Do you think that there's a possibility to ensure this from the start or what would your approach be?

Expert 2

So sorry, the connection kept messing up. Would you mind repeating the question, please?

Interviewer

Sorry, of course. That was a bit long. Sorry. So from a perspective of a founder, do you think there's a way to ensure that an MVP's, UI, UX driven by Genai resonates with their specific target audience from the start, because you just said there's the risk that Genai puts too many buttons and stuff into an MVP, for example. Do you think there's any way to get around that issue?

Expert 2

Yeah, I think that the problem with that goes on the assumption that Gen AI would lead the conversation around what goes into the app. And that's where I think I have a problem, because the founder or the head of product should be the person to decide what goes into the product and where it goes into the product. I think at this present moment, the only thing that Genai should be doing is creating mockups and converting that mockup. I think it should be creating that mockup just to kind of show you a gist of what's possible. But I don't think that design should be taken at face value and brought into the design as something that which goes out and shipped out to be created. Because I think there's other nuances to what we just said, as in, yeah, okay, it could be a beautiful design for, let's say, a recipes app, an AI powered recipes app. But what if the founder wants to double down his strategy on leveraging affiliate sign ups, for example? How does the Gen AI understand, okay, so we need to design that element of the app, or we need to put in pop ups at this present moment or whatever. I think that there has to be such a massive input from the founder side of things to lead that strategy. And if you're going

to do that, then begs the question, if the founder is actually going to lead all of this and make all of these decisions, why do we then need the Gen AI? And it just comes down to the visuals and the way that it should look, and then we're back to where we started. Do you know what I mean? It just feels that should I just feel like the user experience should actually fall with the founder or the head of product. And I think that Gen AI should only be used as a means to mock up. I don't think it should be used to actually lead the whole creation of the app.

Interviewer

To summarize what you just said, you think that Genai doesn't replace an UI UX designer yet, so there's still someone needed, someone like a designer UI UX designer needed to put it all into perspective and maybe to use that Gen AI generated mockup and then to really work with.

Expert 2

I mean, like, maybe I sound like I'm in denial, but I mean, I genuinely think that designers still do have a place in this world. And I don't think that all the innovations which have happened in the last year and all the innovations which are going to happen over the next year is going to kick them out the room. I think they're going to get kicked out the room from founders, or at least projects which didn't value design in the first place. And so they're looking to cost cut or they don't actually value the value that design can bring. Because if you see value in design and you know you're going to get an ROI on it, why would you throw small money at something which is going to bring you big value? Like, think about this, you throw big money at things which are going to get you big value.

Expert 2

And so that's why I don't think that cost cutting to that degree is going to be a viable thing for startups in the next couple of months. I just can't see it happening. And going back to what I said, I think there's so much politics. Can you imagine going into Coca Cola saying you're going to design their app and someone and the guy on the Coca Cola side of the table says, oh yeah, like, there's this AI app we can use and let's just use that to create it. And I think I take so many comparisons with platforms like Wix. Like, websites have been around since the start of the internet, right, and Wix allows you to build a website within the space of two minutes, if not less. And yet still you have people spending hundreds of thousands, sometimes millions, on the creation of a website. In the same way, just because AI is able to create these apps and create these websites, you're still going to have designers who are paid hundreds, sometimes maybe even millions, to build these things. So, to me, yeah, AI has come along and has made things a lot easier, but I don't think it's taken the jobs of designers as much as that is a cracking headline for all these blogs.

Interviewer

Yeah, you really nailed it down onto this one specific argument. Yeah. So maybe one last question related to the risks and challenges. I think you just mentioned a few of them already. So do you think there's in general, any specific pitfall or let's say, misconception about gen AI in the MVP UI UX process or design process that is worth considering when you want to build a startup? Like what founders should be aware of?

Expert 2

Yeah, absolutely. So I think I'll start with the technical side of thing. And are we talking about gen AI from a visual point of view or just creating an app, AI related app as a whole?

Interviewer

I would say both.

Expert 2

Okay, so I think what people get wrong when they're building a AI startup or AI product is that they think most of it, the most of the development process is about getting AI to do what they want. And ironically, getting AI to do what you want is actually the easiest part. 90% of what you're going to spend your time doing is stopping AI from doing the stuff that it wants. And what I mean, by that is that people don't like, say, for example, were creating an AI companion for one of our clients, right, and they wanted it to offer mental health support and advice and stuff like that. Would you believe that? As I say, 90% of our work was stopping it from saying stuff that would have been harmful to their brand or keeping it within the confines of what the topic or purpose of the app was for?

Expert 2

So if someone asked the AI companion, so what do you think about Donald Trump? It's a case where how do you stop it from saying, yeah, he's a massive in. And I think that's the issue. And the thing is, there's an infinite amount of edge cases that you have to fight against to stop happening. And that's just the first part. On top of that is dealing with hallucinations, which is basically when the AI just makes stuff up. So you might have a database with highly curated information, it's very well formatted and still the AI will just make stuff up. And sometimes, even when you say to the AI, do not make anything up, only use resources from this particular part or this particular database, it will still do it. And sometimes it's a case where you have to find a workaround. Sometimes those workarounds is actually removing information altogether

because you've given it too much information, which is pulling it right, left and center. And that is a very time consuming process. Whereas I think before what building a product was like, it was very linear. Like you had a goal, you built towards that goal, and it was very easy to spot bugs because there was repeatable processes. Whereas with AI, every single conversation is completely different. There's probably more grains of sand on earth, which represents a different kind of conversation, which can happen from your one conversation, which is just your one product. And that's why I'm saying most founders believe that the hard bit is getting it to do what you want and then you're done, you're finished with it. It's actually the rest of it that's super interesting.

Interviewer

And what you just said about AI doing whatever it wants, I know the struggle. I have the same issues almost daily, so I'm exactly aware of what you're talking about, even if you're really specific in the prompting and everything. So for a founder, when we're talking about gen AI, I mean, gen AI is a super broad term. What do you think specifically for UI UX designers when we're talking about gen AI, what tools or what gen AI applications or large language models would you say are at the moment like the best ones or the most common ones?

Expert 2

Yeah. So in terms of UI UX design, I've seen a lot of people talk about one, and it's one of those words where you can't even pronounce it, you just have to kind of spell it. It's like UI zard or something like that.

Interviewer

Yeah, I know it.

Expert 2

That's it. And I've seen that spoken about a lot. I've given a few a try, but I can't remember them because basically I just went into them, tried to do a few things and thought they were absolute rubbish. So I just moved on. I think Mid Journey is quite good to create mock ups and stuff like that. And I haven't really gone into Figma's AI features and that too much. And the reason why I think I haven't and I know it sounds bad after giving a whole talk on just Slating UIUX or AI powered UI UX is just because I think we're in that stage with this whole AI era where we're kind of in the alpha stage collectively. And there's a lot of stuff which is just absolute rubbish, even from the big players. And I think the only way we're actually ever going to get to something which is good is through trial and error. And ironically, that's why I think that AI powered UIUX is not necessarily the bees and end all of creating a big product, because it forgets the part where you actually have to go out into the world and have people use it and pull it apart. And I think collectively, we're all in that era of AI. And I think that for that reason, I'm kind of just sitting out for now and waiting for something to truly wow me. And I don't think that we're truly there yet.

Interviewer

Do you think it's going to take a few more years or let's say at least one year? Two years?

Expert 2

It happened in the next six months. I remember this time last year when Mid Journey was just coming out and it was creating some really realistic photos, and I remember someone commenting one of my posts saying, yeah, if this happens to us UIUX guys, we're screwed.

And jokingly, I said, I don't think this is going to happen. Like, they'll be able to even make mockups like this for a good couple of years. Lo and behold, two months later.

Interviewer

Yeah, I agree. I just tried Mid Journey and then put it into Runway, and I was amazed by the quality. So you could just I don't know, it took me, like, two minutes to have animation of a little mockup I just created. And I'm not any type of designer at all. I'm just, like, random interested in that kind of stuff, so it's amazing what you can do with that.

Expert 2

All right. I do think this whole space is going to get really interesting, and I do think it's going to get flipped upside down, but I'm not sure. I don't feel that we as humans are out of the picture, or we as designers are out of the picture. Yeah, it might sound like I'm in denial or literally clutching at straws here, but I think there's so many factors, and I think. Ironically, I think the most important factor is actually politics. Like, no one it's a really interesting.

Interviewer

Thought of you to also consider for my research, I think, because it's like a whole other perspective that you just brought into this research and conversation. Yeah. But it's super nice to dive deeper into that as well. At the end of this super interesting conversation, do you think that or would you consider yourself to be an AI front runner or AI practitioner or an AI occasional innovator?

Expert 2

Yeah, difficult to say. I think I would classify myself as AI front runner, but not for the it sounds cliche and it sounds like I'm blowing my own horn, but I think I mean it in the literal sense. Do I feel that I am using AI and I'm more optimistic about AI than most people? Absolutely. I've been watching this place, like laser focused. This is gen AI stuff because I know that it happened before gen AI, there was actual AI, but I've been watching this laser focus for over a year now, whereas some people are only really waking up and starting to smell the coffee. I wouldn't classify myself as an innovator because I think what we do as a company is we're not trying to make up new ways or new AI growth strategies. We're not trying to give you a strategy that you guys should try whilst paying us and we'll see how it works. What we prefer to do is just literally take what is already working and replacing it with AI to make it better. In that context and that dynamic, it doesn't really feel that our clients could lose because the worst is going to happen is that you're just going to carry on doing whatever top growth strategy you are already using. Yeah. So I think that's how I would position myself if I so be so kind to myself.

Interviewer

Yeah, that sounds reasonable, but thank you so much for all this stuff were just talking about. Was super insightful and helpful for me as well now. Really know also to where to focus more on and yeah, was really nice to get more insights about that.

Name	**Expert 3 (E3)**
Categorization	Expert
Description	Expert 3 is an experienced machine learning professional working in venture building with a focus on industrial deep tech and GAI applications. He has a strong background in computer vision and audio processing,

	having led a team in sound synthesis using GAI. Currently, he applies his expertise in developing GAI features for startup products, blending his knowledge of machine learning with practical product development. His approach to GAI emphasizes its role in accelerating project execution and enhancing product innovation.

DISCLAIMER: Translated transcript – Original language: German

Interviewer

And we're particularly focussing on the areas of idea generation, but also product development, especially MVP and design, which is where you'll probably come into play even more, but also the engineering side and customer acquisition and marketing. And then we want to understand, so to speak, how the typical stumbling blocks and success factors can generally influence the development of a start-up. Very importantly, there is of course no right or wrong answer to any questions. We are just interested in opinions and generally want to get an idea of how this has been used so far, in connection with previous research. You already wrote in your message that you have more experience with Gen AI as a development itself, so to speak, in the development of apps, more than as a tool, so to speak. Maybe you could tell us a bit more about how you've worked with Gen AI so far or how you came into contact with it.

Expert 3

Yes, I've been doing machine learning for almost 10 years, including in start-ups, but more in the industrial deep tech sector. Ten years ago, computer vision was the topic that could be brought into the application a little. I then switched to signal processing and audio and did the first Gen AI project, starting perhaps 4 years ago with GenAI for synthesising sounds. Then I sort of, yes, even as Head of Research at the time, built up a team in a company, Sound

Synthetist with other networks, which worked quite well at the time, in proof of concept, but was not production-ready, and actually the development that has now come through from a year ago, in the changeover also simply to Transformer models and Turing models compared with the models we used before that, It doesn't matter whether the autoencoders were very fast or not, but there has been technological progress, so to speak, that has brought this gene AI work, which we already did successfully in concept four years ago, about a year or a year and a half ago, for those who were a little earlier, to such an extent that the quality of the output is simply a breakthrough, so to speak, and you can now do a lot with it. Well, that's more my own background in product development. But I'm actually now also doing meta-building product development for GNI start-ups, but of course we also use SaaS tooling and all sorts of things that have GNI tools in them today. Exactly, that's a bit of a double perspective on it. On the one hand, developing products with GNI features or machine learning features in general and then, of course, somehow constantly building up new projects, a lot of straight project work, where we of course somehow try to work quickly, and yes, GNI of course also somehow, yes, not in the core of our tooling, which is in here, but of course pops up as features in all kinds of SaaS tools. Thank you very much first of all. Cool overview.

Interviewer

Now I've got a better idea of what you do. Do you think that Gen AI increases the probability of success for start-ups in these areas? So let's say, if a startup works with Gen AI tools right from the start, how would you rate the chances of success?

Expert 3

I actually see this as just a bit of an acceleration. I don't think that ... Well, there are also studies that show, of course, that you make much better pitch tags, but in the end the founders who

make their pitch tag with General AI will certainly fail. So that would be there ... I actually don't believe that a startup that has no chance of success can make a big change with General AI. Of course, you can implement ideas that are already successful more quickly, perhaps also fill gaps in the skillset, founders, if you now have a very technical team and want to generate a lot of marketing material, then you can generally do a lot today. And of course you can reduce costs. So those are the factors for me. One is simply generating output in the creative field and then yes, as I said, you don't need a freelancer, you just do it yourself. Whether it's content marketing or copy drafting. I actually don't see anyone really creating image assets with Dale or anything like that for startups. Unless you have a Gen-AI startup and you particularly want to make it kind of, I don't know, fun. But yes, so I see the area in which Gen-AI is actually at the core, I think, of many startups is now simply that all developers work with GitHub Copilot from the outset. And of course, I usually programme for us myself in the PoC phase and build the first version myself. And then it helps me a lot to simply be faster with GitHub Copilot. For example, if we also have a topic with the hackathon and we can make faster progress. And I wouldn't want to work without GitHub Copilot because I simply don't programme regularly enough and it just helps me to remember, okay, what am I actually going to do next?

Expert 3

Yes, those are the areas. Nevertheless, even when building generalised startups, we write almost everything ourselves. And I wouldn't somehow ask, hey, ChattyPitty, what are the hypotheses and what should I do? What comes out of that is already very soft. So, you also see it more as a supplement than a replacement, so to speak, for all the to-dos. I sometimes see blog articles or LinkedIn posts where people claim that somehow Chattopaddy pitch tags are better than Fauna pitch tags. And I believe that because many Fauna pitch tags are very bad. You're only competing with the, yes, with the baseline or with, and the baseline doesn't do you any good.

So venture building is very difficult. It's about 5%, maybe, well, I think 5% is too negative. 5% for the VC case, the top 20%, that it has a business case and can become a company. Certainly not a VC startup, but to get into the top 20% alone, you often need insights from the founders that nobody else has and they don't have chat GPT and need contacts and networks to get in at the beginning and in deep-tech startups often several years of background in the discipline in which the founders may have a doctorate or something, which I don't do. So I'm very much on the lean startup model with the project I'm doing. But basically all these things, these factors that make up success, you can't generally do that. What is generally allowed, of course, is to be faster and that is also a big part of success. That's easy, I also have great venture pictures. I think I've also seen that you've somehow worked on the labour market in a venture-backed company.

Of course, we have to try out lots of ideas and yes, we could perhaps work with templates and be faster. But we don't do that either. So, it's not the limiting factor for us, how fast can we be, how fast can we build a landing page. We do that fast enough. I just write it down, and then I give it to our designers, and then we have a landing page the next day. In other words, the bottleneck for us is not how quickly we can work. Of course, I see a lot of potential in the future if, especially if you do things repeatedly and quickly, you can somehow read in this data and then have a better autocomplete or perhaps get insights from previous projects, which creates even more value in the venture builder than in a startup where you don't have the experience or perhaps have already founded Joy. But that's a bit my, maybe your, assessment of it.

Interviewer

Yes, an interesting point of view in any case. Perhaps a supplementary question. You've already mentioned how you use it as a kind of supplement to daily doing, but not as a replacement. Do you think that someone who has no prior knowledge of Gen AI, i.e. doesn't actually know how

or where it can be used, will still be able to use it effectively in the various areas compared to someone who has a basic understanding? So let's say you already have a lot of experience in this area, but someone who has never worked with such tools or with large language models or something like that before can use it effectively. Yes, exactly.

Expert 3

So there are the general purpose, general AI solutions, but also retractability, where you have your prompt templates and you have to understand how it works, what can I do here, where is it good, where is it not good, can I perhaps copy it over somewhere, does someone already have collections of good prompts, for example, that I can work with. This is probably too time-consuming for most users to understand at first. Above all, trusting the system and understanding what it can do well and what it can't do well. And I see a great opportunity for vertical apps that are used for exactly one problem and that you use an app for somehow creating hypotheses for, I also see a lot of potential in yes, reading in the data and then summarising it and then making a kind of executive summary, perhaps collecting output from some workshops or something like that or from interviews. These are perhaps the points. We haven't solved that yet. User discovery interviews, you're also doing that a bit right now. We often do a team of 3 or 4, 30 interviews in a relatively short space of time, but not everyone is involved. And then we kind of have a huge mirror board with stickies, but yes, processing that and then really evaluating how often you hear it is manual and manual work takes a long time. I see GeneAI as, yes, with the right tooling, a great solution. And the other thing might be, if we build up our knowledge tooling, to somehow integrate it more and update everyone on what's happening, because even for us in a small team, a lot happens very quickly and we're constantly changing hypotheses, for example, or positioning, and then someone wonders why we're not still doing that, We don't do that, but we do something close to that with pivots, which would be quite

good if we could inform everyone after every pivot, so to speak, about what is actually there now, what remains, what is new, and so I see that for GenAI, that at some point there will be tools that do exactly that, a kind of summarised newsfeed, you've just gone into the topic a bit, hypotheses.

Interviewer

I would now like to go back into the four areas that we are looking at so explicitly, especially starting with the first step of idea generation. Would you say or would you notice differences in idea generation with Gen AI versus without Gen AI? So, can Gen AI minimise typical mistakes or problems in the ideation process?

Expert 3

Yes, so of course you can take a lot of things apart with reasoning prompts. And what GenAI lacks today is often also finding the numbers. ChatGPT in particular is very bad at this. Making logical conclusions with numbers. I would say that finding ideas is never a problem. Desk research would perhaps be more like automatically creating a report for each idea, placing these reports for ideas next to each other and then evaluating them. I think you could do that quite well with GenAI. However, you definitely need integration with web data and business data, which you can of course only gather from some reports for an initial canvas or market sizing. In other words, yes, I can imagine that, but it's not the case today. We don't do that today. And as I said, brainstorming is the easiest part.
Not the easiest part, but the fastest.

Interviewer

And on the subject of creativity, it's always part of the idea process that you contribute

creatively as a founder or founding team, so to speak. Would you say that human creativity can be supplemented or even replaced by GenAI when generating business ideas?

Expert 3

Well, I don't think you need a lot of creativity. I think you have to find very real problems that are big enough for customers to pay money for. And I think with creative ideas you really get into the product concept space. Too early in the solution space. In fact, for us idea finders, we are already very strict in our approach to problems and, in my heart of hearts, we validate business problems in almost all cases in the B2B sector. And we're not even thinking about how we want to solve them creatively yet. Okay.

Interviewer

Then let's take another look at the UI and UX area. What specific changes in the area of startups have you already observed due to the implementation of generative AI, or how do you think the area is changing in general?

Expert 3

Yeah, the only thing that I've seen maybe is kind of using automated website images. So for really the early part. I also know founders who have tried to get into design with AR and that's not quite ready yet. So I actually see in this area that there is now such good tooling, there are such good low-code and no-code tools and Figma to make concepts. Yes, I could perhaps see using a GenAI to do testing at some point. That's the part that often just doesn't happen, where there are no resources for it. Visibility testing, but also A-B testing and then, yes, also somehow, yes, to quantify how, which of, so, in A-B testing, which version is better, yes. Or also giving

feedback, making suggestions. I spend a lot of time responding to comments and saying, hey, can we also check here, do the designs actually match the specifications that we have made?

Interviewer

Yes, so those would be nice ideas for me, but we're still a long way from being able to completely replace the existing general solutions, do you think that GenAI, so you're saying that we haven't yet reached a stage where GenAI can completely replace UI or UX designers, but rather complement them, so to speak, or how would you say that?

Expert 3

Yes, for enterprise apps, which are very safe, probably yes, to actually use best practice, but that, so it will be the asset creation and the busy work in design, which still makes up a large part, creating components, finding a colour scheme, brand design, and then somehow constructing everything in feedback first. I can imagine that this will go much faster. And I really don't hope that the UI and UX designers will be replaced, but that they will simply be able to play through more variants much more quickly and get from a concept to a clickable prototype faster. These are the kinds of things and perhaps the first design won't be used somehow and it will be difficult to get out of such a workflow once you've set it up and integrated it into the app. But as a product manager without a designer, I wouldn't want to simply click on an AI app because that also requires a different perspective, which I don't have.

Interviewer

Well, the human element is still important.

Expert 3

Yes, on the one hand, working in a team also helps to reflect ideas and get feedback and also to have clear responsibility. And so, as a product manager, I stay out of the details in the design and I also don't say, he makes the corner rounder, somehow from the button, or I like this layout more or not, but when I have feedback, I always think about whether the feedback is from a business or a user perspective, so Or I think that this is difficult to implement, but I try not to micro-manage my preference, for example for visual designs, as feedback. The same goes for engineering, where I'm even more tempted to micromanage, but I don't do that either. And I don't see it as the ideal situation that I, as a product manager, somehow do prompt orchestration as a one-man show and then build an app.

Interviewer

You've already mentioned the time dimension, that processes can be accelerated with generative AI. What does it look like in terms of the cost dimension, for example in MVP development, but also now in the engineering area, how do you see the influence of Gen AI?

Expert 3

Yes, actually, so especially for very small proof-of-concepts and also to create a first quasi-version, I actually see a lot of potential with GenAI to be faster, not to have to start a project first, because that's also such a problem that you have to get started first, you have to say, okay, we now need a frontend backend engineer and designer, but they've just somehow started on other projects, so that's an example, or you're now a founding team and just don't have anyone for frontend because it's only deep-track engineering. And of course I see that as a big point, especially when you're bootstrapped at the beginning and don't have a team, nothing staggered yet, no funding, to say, yes, we can get started now and aren't blocked from being able to show something at all, to have a demo. But I don't see it as, I actually see it as, if you do it this way,

and then at some point you have to start in a team, then you just start from scratch, because you can't maintain or further develop these GenAI-generated solutions, whatever they may be.

Interviewer

Would you say that there are also specific challenges, especially now in relation to start-ups, when they integrate GenAI into their technical workflows? So where do you see or are there challenges?

Expert 3

Yes, as I said, I don't see any engineering at all, so GitHub Copilot is just so good. I don't see any reason why I wouldn't do it. I also don't have any concerns about the code being sent to Microsoft or anything like that. So ideally you shouldn't have too much tooling and not too many individual solutions. In other words, for me, the GAI solutions should somehow be in formats that you use, for example to create or share files, and not in a SaaS tool where one person has an account, which is often the case with the GAI apps, because then the things just don't remain accessible and in some cases not really, so you can't export or share them well. And I would say that's more of a technical challenge, that in the end you still have a workspace in a small team where everyone does something different and is somehow involved, where everyone can access it and everyone can continue to work with it.

Interviewer

You've just mentioned it a bit in UI, UX, design. What does it look like in engineering now? Would you say that a product-orientated startup with Gen AI still needs an engineer in the early, so to speak, founding team? If yes, why? If not, why not?

Expert 3

I think even now you don't need an engineer on the founding team, depending, so if it's a deep tech idea, it's going to be very hard to get funding if you somehow have marketing experts and voters on the founding team. So, it's actually the case, if you look at this, that many successful start-ups don't have tech founders. Especially because you're building apps, I think domain understanding is very important in the founding team, as well as ambition and business understanding. You can always egg engineers on. Of course, if you want to bootstrap, it's very difficult if you only have business people. And yes, that's why I would say that I don't think you need a technical founder or a CTO at the beginning in every startup. You can also find a VP Engineering or a CTO later on. If you have a problem ... That maybe you can also do a mockup, ... Without it being a functional app. And we also have ... With General AI, you can perhaps ... Do a bit more yourself, ... But so the step from ... What already works now, ... Namely, that you actually ... Working with freelancers, ... But with a bit of capacity ... Getting away from that and saying ... Okay, now you only have business founders ... And they can now build an MVP, ... That's such a gap in understanding ... Not at all from the fact that you ... know how to programme. I don't trust most business founders to be able to do that.

Interviewer

Then let's take another look at the fourth area, namely customer acquisition, sales and marketing. How would you say, or what would you say, in which sales activities can Gen AI be used well in your experience or in your opinion? Where do you see the future perhaps? Yes, in addition. Exactly, so if you're thinking about sales and marketing now, you should have already briefly ...

Expert 3

Yes, so content marketing, as I said, is the area that is unfortunately already, I wish it was forbidden, but so a Gen-AI generated blog articles, LinkedIn posts and all the things that are done today, that of course also dilutes this whole content marketing in SEO very much today. There is already a lot of bad content. With Gen-AI, there will be even more. Start-ups that want to work with SEO as a channel for go-to-market, for example, can't really avoid creating a lot of content today. And the area that is very important there, which was simply too expensive until now or is also technically so demanding, is generating video content. Unfortunately, this works much better. And of course there are already good tools for creating videos, but there is also a lot of general AI in the field of synthesising voice, synthesising video, using talking heads and avatars. And this is of course very scalable if you build a brand avatar and can somehow export every blog article or every post as a video. And that already exists. Yes, if this becomes more accepted and the quality improves, I believe that blogs will more or less be replaced because video will then be the cheapest content to produce, which is still too time-consuming today with a proper setup and with post editing and what you have to do.

Interviewer

So, you would say that right now, you just mentioned the topic of quality, there are currently even more human iterations possible, so to speak, of an output that was generated by your AI, especially now in the content area.

Expert 3

Yes, but exactly, so one area is also outreach messages, for example, if you're somehow doing code outreach, if you're somehow working with LinkedIn automations. One example is that

LinkedIn has now reduced the number of automations because people are spamming so much. And that's going to increase. So, I actually think a lot of the sales and marketing channels that have worked well so far are actually going to be destroyed by Generative AI because both blogs and kind of code outreach, automation, LinkedIn or email are just going to be so cluttered that they're probably just going to be considered today from technically spam, but there's still people going into it, kind of 2% to 5% and I think the percentage is going to go down and that's also going to be weeded out more by, for example, Gmail and blocked or prevented more by LinkedIn.

Interviewer

Do you or do you use Gen AI tools for outreach or customer acquisition, sales, marketing, specifically?

Expert 3

Nah, just, so we have some LinkedIn automations, but I don't do that either, automating outreach with callouts, but that's not Gen AI, that's just automation.

Interviewer

Okay. Yeah, cool. Very, very much input. Thank you very much for that, for all the insights into the different areas. At the end, I would like to know again, or hear your assessment, whether you think there are other areas that we haven't even talked about that Gen-AI could have an impact on, especially in terms of start-up founding and success rate or success rate. Exactly.

Expert 3

It's not the tools that founders use, it's the tools that investors use. What I believe is that there will be a lot more happening there. This means, for example, that the associates at the VC firm will have to do a lot more of the screening of pitch tags and requests. Somehow clicking through 100 identical pitch tags per day and then selecting one of them. I believe that these workflows will be highly automated. It will also move more away from the subjective decision on time towards aggregating the data and using the investment hypothesis of a BC Fund to really check, so to speak, does the startup work? And perhaps also carry out background checks to see whether the facts in the pitch techs are correct. So all these things can generally be done today. I don't want to build a startup in this area, but I'm sure someone will do it. Several startups are going to go into this area. And of course that changes the way you have to pitch when you know that the first step is to screen for automation and I know from talking to, yes, associates at VC firms that a lot is already data-driven and a lot is happening in terms of automation. And, as I said, the VCs will adopt this solution very quickly. And that means that if I make a pitch now, I also have to optimise it for this screening, so to speak. And I think that makes it even more objective and perhaps even more standardised. You no longer have to stand out with a different design when it's really just facts... What was generated by Gen AI.

Exactly, that is, you have a Gen AI generated pitch deck, which is from a Gen AI screening, and then you're more or less fighting algorithm against algorithm, and that's not so dystopian, I think, but that's already in many cases, I think, that you optimise very strongly on algorithms, in past some, optimised on algorithms, whether that's SEO, even today I need a learning patch like that here, especially for, well, maybe at the beginning for an initial or somehow cold outreach and then at some point only for SEO and so it will also be with other, what can I say.

Interviewer

Yes, interesting point of view. Looking further into the future. How do you think historians or,

let's say, experts will describe the influence of GenAI on start-ups in 50 years' time? In other words, how the whole landscape will have changed?

Expert 3

I wouldn't look more than two years ahead. Yes, it's very difficult. I actually believe that a lot will change, but also in general, not just in this area. Yes, what I actually believe is that there will be a lot of very small start-ups with very good founders who scale themselves very well by using a lot of general tools and then more or less one person can do the whole go-to-market for the first few years, for example. And you don't need as many early high-flyers, but even then it's much more compact. I thought that was a huge advantage of start-ups in the first few years. In other words, I actually believe that there will be amazingly successful, smaller start-ups. Okay.

Interviewer

Yes, that's an interesting thought. Finally, another self-assessment question so that we can evaluate a bit how you see yourself, so to speak, also in dealing with Gen AI. We have divided the whole thing into four categories. Beginner, advanced professional, expert or pioneer. To explain a little bit what each category means. So, I guess you're probably not a beginner anymore, advanced professional, so to speak, practical Gen AI application experience with an understanding of business applications, expert, extensive Gen AI experience and implementing business solutions yourself, possibly also advising and training others, or you're a pioneer in Gen AI applications, transforming business models and possibly also setting new industry standards. Oh dear.

Expert 3

So, lots of options. Well, I'm currently building two general start-ups as a product manager and have been doing this as an expert in the machine learning sector for years. But I'm not a power user myself. So, that might be the... Well, I've already written that too. Well, I don't use Chat GPT that much either. In fact...

Interviewer

But your level of knowledge, so to speak...

Expert 3

But I do give lectures on the subject of Large Language Models in Enterprise, for example.

Interviewer

Would you see yourself more as an expert or a pioneer? In other words, if you are now building up new start-ups and perhaps setting an industry standard again, or rather as an expert?

Expert 3

I think more as an expert.

Interviewer

Okay, very cool. Thank you very much, Paul, for your time today. I hope I haven't asked you too many difficult questions, but this has helped us a lot to get a better feeling and more information about all the different areas. We're trying to cover the whole spectrum a bit, to see where we can add to the literature, which is very limited so far.

Expert 3

Cool. Mega. Yes, I hope I was able to help.

Name	**Expert 4 (E4)**
Categorization	Pioneer
Description	Expert 4 is a forward-thinking data scientist and AI expert, specializing in Generative Adversarial Networks (GANs) since 2014. His journey in AI began with a focus on image and 3D object generation, leading him to explore the broader potential of generative AI. Martin has been a prominent figure in the AI community, speaking at conferences since 2016 and sharing his knowledge through online courses and his website, generativeAI.net. He worked at IBM, contributing to the Technical Expert Council on Upcoming Technologies, and is the founder of generative-ai.net, focusing on education in AI with a global reach. He is deeply involved in AI application development, advising startups and established companies, and is committed to exploring the future possibilities of Autonomous AI Agents and AI-driven market research.

DISCLAIMER: Translated transcript – Original language: German

Interviewer

I hope it's okay if I transcribe the interview for my thesis. I hope that's okay with you. Great, perfect. Thank you so much for taking the time today. I'm really looking forward to hearing what you have to say. Maybe a quick word about me, or rather about the background to the project. I'm currently writing my thesis on the topic of gene AI in particular and am now writing in a group. And we're investigating the extent to which Gen AI influences the founding process

of start-ups, or perhaps positively influences typical pitfalls in the sense that processes change. And I'm looking in particular at the area of MVP development and especially UI, UX design, but of course we're also interested in the other fields, something like marketing or ideation from my point of view, so the various steps in the startup development process in particular, so to speak. And yes, exactly, that's why I'd like to know what you think about Gen AI first, or how you came into contact with the topic in the first place.

Expert 4

I've actually been talking about GenAI since 2016. I started as a data scientist around that time and in 2014 a new neural network came out, an architecture called Generative Adversarial Network, or GAN for short. And that was in 2014, and with yarn you could already see, oh, the first images could be generated, and some other 3D objects were generated, but all with very poor quality. And I found that very exciting and delved deeper into it and then, yes, I actually saw the potential possibilities of the direction it could take. And in 2016, I went to a conference and spoke about it called GenAI. That was in Milan and was also very interesting for a lot of people at the time, but after that it fizzled out because not much more happened.

Expert 4

And above all, it wasn't quite far enough yet. In any case, I have now become more interested. The technology has developed further. I continued to speak at conferences, then did an online course at some point in 2018, generated it myself, developed it myself and also founded the generativeAI.net website. Yes, and then at some point I worked at IBM. I was already trying to push the topic at IBM. That's when I joined the Technical Expert Council. It's a global council of experts on Upcoming Technologies. I held up the flag for it. But it's only really taken off since JGP or actually, you could say, since DALL-E a year ago. That's quite a lot of customers,

if they then use ChatGPT, then the ideas are created very quickly. Many customers have approached us and now I have already realised a number of topics with larger and smaller customers.

So by larger, I also mean a bank, for example, exactly. That's my full-time job. I'm also GenAI Lead for Infosys. Infosys is a global company with over 300,000 employees. And I have now resigned because I want to do GenAI full-time. Privately. I can really understand the step you're taking.

Interviewer

But first of all, it's super exciting what you've already done and, above all, that you came into contact with it or got involved with it so early on. You also just said that you are the founder of generative-ai.net. What exactly do you do there? Or what exactly does that have to do with generative-ai? Yes, well, we are mainly involved in education.

Expert 4

We have two online courses, we have newsletters with over 30,000 subscribers and my conference, so I speak, last month I was in Seoul, before that I was in Las Vegas, so I'm travelling a lot, I have a few days in San Francisco and then Berlin. So, there are still a few things planned where I'm speaking at conferences, but I'm also paid, right? That's via journaldesign.net and training courses. Well, I also give, yes, training courses. We also have a very small team, Himani from India and then a designer and that's it.

Interviewer

Does that mean you mainly coach companies or individuals?

Expert 4

Companies, individuals rather, so individuals then via the online courses that they can book with us. We have a GenAI online course, a foundation course, so that you get to know everything from the ground up. And then we have an online course on marketing. And theoretically there should be a few more, but that's a bit of a problem at the moment. Oh, and I've also written a book about it, which is also available at generative-ai.net. Oh, that's also on the side.

Interviewer

Yes, I've just finished that.

Expert 4

This will soon be advertised.

Interviewer

Wow, I can tell you're definitely very, very deep into the subject, especially from the educational side. Very, very exciting. If it's okay with you, I'd like to start with a few questions right away, maybe to give you another picture. We are looking at various dimensions that could possibly be influenced by Gen AI and simply want to use the interviews to find out whether the theories are confirmed or what the general opinion is on the subject. And we're mainly looking at the issue of time savings, but also cost savings through GenAI and quality improvements and, of course, ultimately the risks or, let's say, the challenges that go hand in hand with this. Exactly, so perhaps the first question relates to design or UI, UX First has already been mentioned a little.

Interviewer

Would you say Generate.AI in general as an application can make it easier for startup founders to speed up the design process? So, for example, if we're talking about a digital product, be it an app, a website, you name it, would you say or how would you assess the influence of Gen.AI there? As things stand now, I think it does have an influence.

Expert 4

So you can generate images, you can generate logos, all as quickly as possible. You used to generate a logo, that was done by an agency and that cost a lot of money. So it's all very fast and of high quality, I think. When it comes to app development and the design of apps, you can be inspired by image generation with chat GPT, right now with the visual model. I don't know if you've tried it yet. I have it as an app on my mobile phone. You can take a photo, and there are lots of examples on the Internet, you can take a photo of a dashboard, and you can say, ey, take the photo and this dashboard and programme it exactly for me with R Shiny or something like that. And the code that comes out when you play it back isn't that far off. Wait a second. I have to close the door here for a moment. Exactly, so that's not the effect at all. If you then go further, 1, 2, 3, 4 years, then I think much more is possible. Especially because there are now also autonomous AI agents. I also talk about that quite a lot. I also covered it in my book. These are basically AI colleges. And they can take on all kinds of roles. Simpler roles are executive assistants, where they can also book something in the calendar and so on. But they can also take on programming tasks. There are already some initial apdproaches that are not bad at all. Project management and so on and so forth. So it's really futuristic when you think about it, but it's not that far away. There are some really good approaches. And so I can imagine that in the near, slash medium, near future, people will say, ey, I'd like an app that looks like this and this.

Expert 4

Take this dashboard or the image generated here by Midjourney and programme the app for me. And then we'll start reprogramming it. And also with a project manager and quality assurance and so on, so anything goes.

Interviewer

In other words, if we now go to the programming level, you're saying that it's already very close, but it's not yet the non-plus-ultra. In other words, would you say that Gen-AI today can already replace programmers, UI and UX designers, or is more still needed?

Expert 4

Not replace, I would rather say augment, i.e. expand. So we're talking about augmenting the skills first, i.e. you can now create more and have more skills, but also more in terms of productivity. So augmentation comes first, then comes automation at some point. That's when you only have a little bit of supervision, supervision, what happens there, you're just a bit in the loop and then at some point deprecation of the human, meaning that people are no longer necessary. You can also see that this is the case with many technologies, such as autonomous driving. In the beginning, yes, augmentation, a bit of lane assist, so that you really stay in your lane a bit. Automation, maybe you just have to keep a finger on it, then the rest happens by itself. You might have an eye on it, but then at some point you don't have to turn any more towards the road, you play in the car or whatever you're doing.

Expert 4

How do you see the whole issue with Gen AI?

Interviewer

A lot is also possible in this area. You just said yourself that we will continue to develop in these different phases, or rather the technology. How would you see the whole issue if we were now talking about VP Design or UI, UX Design? How can GenAI ensure, or how can a founder ensure in the application, that this design is also, shall I say, human-centred? In other words, that something comes out of it, or also in the application, that is really wanted and needed. Because you can do a lot of things first. The question is, how efficient or how useful is it really once it's done?

Expert 4

So I believe that today it is precisely our, that is, us humans, that this is our power that we still bring in, that we bring this human centricity, how much is it really worth, how valuable is what we are developing right now? So we definitely still need human input. But you can, because you can also achieve more and have higher productivity. And by more output, I mean that everyone can now programme. You say, I want to programme HTML code or somehow programme a database. With Chat-GPT, you can get something done that works. Is that the ultimate? No, but you can expand your skills and also your productivity. And with these two augmentations, you can also generate a better product with human input in the end. I still have to close one door.

Expert 4

No problem at all. There are lots of doors in the room. No problem at all. Yes. Okay.

Interviewer

If I've understood you correctly, to summarise, you would say that Gen AI can perhaps also be a kind of sparring partner for founders who don't originally or don't aim to replace a designer or programmer, but can perhaps also act as a first source of ideas, perhaps as an extension to get started. If I take a look at the reasons why start-ups fail, these are often cost issues that also play a role, that you may not have the resources available to develop a really good MVP, for example, or to set yourself up well from the outset. How do you see the role of Gen AI in this? As a founder, can I save costs so well that I can perhaps position myself differently, better, right from the start? Yes, I think so.

Expert 4

As I said, everyone has more skills or if you don't know something, you have to remove a prompt and you can get a very good view, for example, taxes are a complicated topic, especially in Germany. With ChattyPT, you can say, okay, you're now my very experienced tax advisor. I have this and this goal, advise me on the two or three top options I have. And give me the pros and cons. And then you can decide for yourself. So you, the threshold. On many topics, not just of a technical nature, complicated technical nature, but also regulatory issues and so on. I believe that this threshold has fallen drastically. This also goes hand in hand with cost savings. A tax advisor also costs money. Every programmer could potentially, or every employee could potentially, that was always the case, that was on the Internet, in Silicon Valley they often said that you are now a 10x employee, everyone now manages ten times as much, which I don't think is quite true, so I also lead teams in Europe, so for the respective projects, I also tell everyone first of all that it is mandatory to have a JTPT window or something similar open.

Expert 4

That's like coming to work without a laptop if you don't have that open. And to the programmers, they have to use GitHub Copilot. So that's when you start programming. Yes, first you just write a comment and then with Tab and you've implemented the whole thing straight away. And maybe you still have to adapt something, but that's already, 10x is not far away when you compare it all with Scratch.

Interviewer

Perhaps again on the subject of Copilot, so that we have it on the soundtrack for once. Maybe you can explain it very briefly in two or three sentences. What is Copilot? What exactly does it mean? Or GitHub Copilot in this case. Exactly.

Expert 4

GitHub Copilot is a Microsoft product, integrated as an app or as a plugin for Visual Studio Code, the programming environment for developers. And when you switch on GitHub Copilot, let's say you want to programme an API or a piece of code. 90 per cent of what you program is straightforward. It's not complicated. You have to look at some documentation and then copy-paste and perhaps adapt it. And then there are 10 per cent where you have to think hard. And this 90 per cent can be done with GitHub Copilot, you write a comment, a comment, I mean, like, yes, here I am implementing the API of Facebook or whatever. And then, bang, it's immediately indicated, so, this is the code that makes sense. You check it and with Tab you accept it. And the topic is ticked off and you move on to the next topic. So you can really automate the 90% and then focus on the 10% hard work.

Expert 4

And this human touch is still very important. And then there are the requirements that you need or any hard problems that even language models can't yet solve. And by the way, there is an Open AI Language Model. I think it's Codex. Codex is in the GitHub Copilot. Yes.

Interviewer

Very, very exciting. In other words, as a non-techie, as a founder or at the beginning of my start-up phase, I could go there, so to speak, and start programming my site with Co-Pilot and then look for the programmer for the next or last crucial 10% here, but I wouldn't need him for the whole process anymore, right?

Expert 4

Yes, you can see it that way. You can also see it this way: instead of five programmers taking care of a product, one is enough.

Interviewer

Something like this.

Expert 4

What is the ratio now, exactly, that is definitely...

Interviewer

It's just an initial assessment. When we come to the subject of quality or the dimension of quality, as you said earlier, Dali and image generators in general, it's all going in a good direction. How would you assess the fact that I can use a generator or Gen AI to ensure that I can develop my product close to my target group? In the sense that the quality of my product

corresponds to the interests and wishes of my target group. Can ChatGPT, for example, support me in aligning myself more closely with my target group, so to speak?

Expert 4

Yes, yes, I think so. In fact, we've developed something with a bank that allows market research to be automated in principle. Not completely automated, but it is possible to achieve a lot of results very quickly in the area of market research. So if you use a language model like GPT-4, for example, or Mistral or whatever, if you equip it with the possible tools, for example, you scroll the web, that already exists automatically, that you have crawled the web, indexed it. And then with semantic search, I don't want to get too technical about it now, but you can search what you've found on the Internet using certain search algorithms. And with the language model, you can also make a very good analysis of what you have found on the Internet on a specific topic.

Expert 4

So for that you could do market research, what happens there and also if you have any quantitative surveys, now there is the native plugin from ChatGPT. Yes, Date Code Interpreter. I don't think it's called Code Interpreter anymore. It's now called Data Analytics. Yes. You can also analyse that. You can have everything plotted. There is also the Notable plugin. You can also import huge amounts of data. It works via the Notable API, so you can upload the data set that you might have and you can then see how ChatGPT and Notable have developed the code together. It's like a Python notebook, just like a data analyst would do. And only with natural language. And if you don't even know what you want, you can simply ask, what is the best approach here? The best practices. So that's a drastic, significant leap.

Interviewer

And in addition to market research, if we now move on to the topic of marketing sales, how do you see the opportunities for Gen AI? I can already have all the ad scripts written for me, I can have the visuals created for me. How do you see the possibilities here today and how do you think it will develop in the next few years?

Expert 4

So I think today, when it comes to marketing and perhaps also sets, today the first 80 per cent of the post is at the stand, you can get a good 80 per cent, but this human input, if you really want to put out high-quality marketing post, you have to bring in the critical work yourself, bring in the critical thinking, in any case. I also post regularly in my newsletter. If I completely automate everything, then it's just a newsletter, you can read it, you've learnt something afterwards, but do you know what I mean? That magic is missing a bit. You don't feel like reading it.

Interviewer

You would say it is, it is a support, but it is still too generic and perhaps not yet the ultimate in the sense that it is really, yes I don't want to say unique, but it doesn't replace a marketeer in that case either, does it?

Expert 4

Yes, so I would say a junior or a slightly weaker marketeer maybe, but the difference between good and great is when the person really goes back in and brings in a bit of the human touch. Yes, exactly. I see.

Interviewer

Where would you see misunderstandings or potential pitfalls with GenAI for young start-ups, i.e. purely in terms of the construct, the early start-up phase? Are there any risks that you see in this regard?

Expert 4

Risks in working with GenI tools?

Interviewer

Exactly, so if you imagine I'm a founder, I want to found a startup, I'm still at the very beginning, I want to use Gen AI in these different areas, both from the technical side, MVP development, programming, but also design, later marketing and sales. Do you see any challenges or risks in the applications?

Expert 4

Two things come to mind, firstly, if you want to say any facts, then you shouldn't rely completely on the language models, because there are still, and we see this again and again in our development with our customers, there are always a few topics where people hallucinate. So the language modelling is simply telling the wrong story or twisting a number? So I would always double-check or always have a critical eye on it. The second point is generally not to outsource critical thinking. So we definitely have to do that. I've often seen people simply say, ok, ChatGPT impressed me so much. You have to know everything. So they think, ok, ChatGPT would already know better or other models. So this critical thinking. And thirdly, IP, so if I'm a startup now and I'm really working on a cutting-edge topic and also working with a

confidential topic, I wouldn't upload it to ChatGPT now, but rather with my own model tenant via Azure.

Expert 4

You can also have your own model tenant via Azure and use everything there. Then I'd prefer it that way, but now with ChatGPT I want to be careful about what data I upload, what information. Because this is also used to train the model. And they're quite open about it. And what that means is that the information that you put in there can also come out with someone else. In fact.

Interviewer

You've just mentioned the issue of data protection yourself. How do you see other ethical components in its use? AI is often the subject of a bit of a discourse, ethical challenges or ethical questions, and raises fundamental ethical questions. What do you think about this topic?

Expert 4

So I think Gen AI brings a lot of nuance to our discussion. There's a lot of public discussion. Trump, good president, bad president. Many in Germany would perhaps say disaster. But immediately polemical. So black and white, there are no nuances between the two. But if you now ask ChatGPT, was Trump a good president now as an example? Would it start to just go at us here. Some say not so much for such and such reasons. Others say good for such and such reasons. So, as always, the truth is somewhere in the middle. And I think that's a good thing. Sorry, what was the question? Data protection too, right? Yes, exactly.

Interviewer

Data protection, but also basic ethical issues. So maybe also abuses and things like that.

Expert 4

I think there's a lot of nuance in a rather polemicised world that we're in. That's one thing. On the other hand, it's just a model, which is a tool that's trained on data. And this data initially has some kind of bias. There are biases in which direction this bias goes. And there is a danger if you rely too much on the language models that these biases will simply be reinforced by what we read with ChatGPT or other generated texts. And generated texts in the future, almost everything will be generated texts. Hardly anything will be written by humans in five years or so. So I think that will have an impact. Exploitation, in other words abuse. Deepfake is clearly a very important topic. A lot is happening right now with Gen-I.

Expert 4

RunwayML can be used to generate videos. Journey can be used to recreate people. Deepfake is now indistinguishable from human So you can no longer tell the really good ones apart. Only by what they say. So if Joe Rogan is now advertising some kind of supplement, that's very misleading. But there are also regulations. It's banned in many US states and I think in Europe in general. Yes, so that's a problem, of course.

Interviewer

Yes, of course the discussion about this can probably go on indefinitely. Would you say in principle, again with a view to the future, that Gen AI is a key component for start-ups, i.e. for new companies, of course also for established companies, but especially now with a view to

start-ups, and that if you don't use it, you can quickly be left behind, shall I say? So will it be a must-have or a must-do in the sense of a requirement? Yes, I think so.

Expert 4

So I believe that the responsible founder has to use these tools. Otherwise you will be overtaken by the people who use them. For me, that's obvious. I don't know if that's the case for all start-ups. A mate of mine is currently starting up in the automotive industry with leasing. So it doesn't have much to do with that, but more for writing texts and business plans and so on. So even he uses ChatGPT daily. So I think it has to be. That's 20, 30 years ago, as if you did everything with a switch machine, seen as analogue. And others use computers, Word and Excel.

Interviewer

I see. Many, many thanks for the complete overview. We have now talked about a lot of topics at a very high-level. But that helps me more because we simply want to start by looking at how Gen AI plays a role in various areas and what it means for the entire process as it stands today and, of course, how it will develop over the next few years. Finally, I had another small assessment question for you, about yourself, just to get a feel for how you see yourself using or dealing with Gen AI. We have divided this into, let's say, five categories. I'd just like to read them out to you now and then you can give your assessment at the end. So, in relation to Gen AI, how would you see yourself or your status, so to speak, in the application, in the use?

Interviewer

A beginner, i.e. the first category, basic knowledge of GenAI, but no practical application. Second category, competent, i.e. you have already implemented a few GenAI projects, but sometimes need support. The third category, advanced. Several GenAI projects realised, deep

understanding. Now there are two more. The fourth is the expert category. So, you have extensive Gen-AI experience, consulting and training others and implementing business solutions, so to speak. And the highest category, the Gen-AI pioneer. You are a pioneer in Gen-AI applications and transform business models or set industry standards. Where would you see yourself?

Expert 4

Yes, I don't want to come across as Braggie or anything like that, but more like category 5. I develop this with my teams. We develop it for other companies. So a lot of semantic search with General AI. And I've been talking about it since 2016. So I would see myself over there.

Interviewer

Do you have a final word for me or for us as a tip, in which direction we should perhaps definitely look again or where you perhaps see the greatest potential in research?

Expert 4

Yes, so I think Autonomous AI Agents, which I also say quite often in my conferences, this year we are already seeing the first Autonomous AI Agents, i.e. an executive agent that helps you. Next year we will see this in several sectors, maybe even widespread, and in year 26 I am convinced that we will be travelling privately and professionally with a fleet of autonomous area agents, i.e. they will organise all webpages, or not all, but many internet touchpoints will be conversional, all with natural language. Yes, many interfaces, everything. A lot of things will be replaced by language models, these touches that we have now. And I believe that we will then have an agent that organises something for us and talks to other agents. So... And I think that in a world like that, we also want to have agents who organise things for us. One of

them organises something privately, the other does something for us professionally, develops something, some kind of product for our team.

Expert 4

So it's definitely going to be a very exciting future. And AGI is not that far away, I think. AGI is Artificial General Intelligence. What's the difference to GenAI? Conventional AI was narrow AI. You have an image and then object recognition is performed, so it's also called discriminative. You discriminate between different options, differentiate between different options. The generative twist is that it can now generate data, text, video, photos, sound, music and so on, 3D objects. These are the two steps and then based on this is AGI, i.e. Artificial General Intelligence, which can basically solve all or many problems without having to be trained or somehow promptly engineered or something. It can solve a lot of things on its own. So you have an AGI that is assigned to you, which you can probably book somewhere. And you say, yes, write me a book about it and ask me ten questions every day about the topic you're an expert on.

Expert 4

And then it would ask you, if you have time, and then write your book in your voice, for example. So what we have now, but on us steroids, you know, thinking ahead. And then... Just finishing the picture, but then that's a bit sci-fi. Then there's Artificial Superintelligence. The AGI is so good that it solves all our problems. So there's no more hunger, cancer is solved, all kinds of diseases, we live longer and so on and so forth. But that's a bit sci-fi.

Interviewer

When do you think we will arrive at super intelligence? Will we ever get there?

Expert 4

I think we'll get there this century. If you look at how quickly everything is developing this century. There are people, Ray Kurzweil is a futurist who has also written a very good book called The Singularity is Near. He said 2048, oh yes, that's very foreseeable.

Interviewer

We'll definitely all live to see it, hopefully. Very, very interesting. Many, many thanks for all the insights, Martin. That was really interesting. Yes, I can only say thank you. We will of course also take another look at the other dimensions that you've brought in. That was another great approach to continue and investigate.

Expert 4

Yes, and that is, you are now writing the Master's thesis with others, yes?

Interviewer

Exactly, there are three other Germans in my group, so to speak. But we study at the Nova in Lisbon. That's cool. And, exactly, we're sort of writing there, or doing our Management Master's degree and were able to choose a topic. We're all very interested in the world of AI, or rather, it's always such a buzzword, but GenAI, especially in terms of its application, what it means for start-ups or generally in a business context. And, yes, we simply realised that there's already a lot out there, but it's all touching the surface and we want to take a closer look at different levels.

Expert 4

Yes, great. Yes, Nova is, I think, a good university and Lisbon is of course a fantastic city. So not bad. Good choice. Yes. Thank you, thank you.

Name	**Expert 5 (E5)**
Categorization	Advanced Proficient
Description	Expert 5 is an entrepreneur, investor, and professor at Nova SBE, known for founding GuestU and co-founding Boost Tourism and MYGON, with expertise in digital transformation, tourism, marketplaces, and SaaS. He has a background in private equity and consulting, especially in innovation topics, and is actively involved in mentoring and board roles.

Interviewer

Thank you. So to give you a general overview over the topic, I'm going to now start here. Okay. So thank you for agreeing again to participate in the interview. We are analyzing basically GenAI and its capabilities on the effect or on founding startups. So basically we analyze common success factors and common pitfalls for startups and then try to analyze if GenAI has an influence on these, as it is a really hot topic at the moment. We now want to complement the research at the moment with specific expert opinions. And yeah, specifically we have some areas, it's ideation, product development. So MVP and design, then code engineering and customer acquisition that we want to dive deeper into. And yeah, that's it basically. So we would have part one of the interview.

That's some general questions, we don't have to dive too deep into it. So it's just some general questions. And then we're going to dive into the main parts that I just mentioned. So let's begin with part one. First question would be have you integrated or worked with GenAI in one of

these areas? I can repeat them again, it's ideation, MVP development or MVP design? Software engineering or sales and marketing.

Expert 5

Well, I would say ideation, yes, for sure. The second part is customer validation. No, what is the second?

Interviewer

Ideation? MVP design and MVP development.

Expert 5

MVP as well. Not so much on the coding and on the customer acquisition. Yeah.

Interviewer

Okay, perfect. In which of these areas have you seen the biggest shift in your capabilities and way to approach solving the challenges special to these areas?

Expert 5

Well, I think Gen AI, or at least AI as we have as of today, does have huge impacts in all those areas. On my personal experience, given the stage I'm at, I would say that in terms of ideation, it really has a massive impact in terms of the speed and the superpower that you have by using artificial intelligence. Second, I'm Actually exploring the superpowers that you have in terms of customer validation, which I do believe there's a lot of potential. But one thing is, I think we're still in early days in terms of experimenting and really understanding kind of the powerful

tool that we have access. I'm yet to see, like, okay, after a few months of implementing and deploying and really being in production, to really say, okay, this does have a massive impact. So I would say, first, we're still very early days and I think we're still learning how to use and how to benefit from whatever tools.

Interviewer

Okay, perfect. Then to the next question. Do you think GenAI in these areas will increase the probability of startups to succeed? If yes or if no, why yes.

Expert 5

Again, I think it's an important disclaimer is we can talk about AI as we have today, kind of the different LLMs. I mean, big improvement just this week on OpenAI and chat GPT, I'm going to focus on that, not so much on the GenAI. Okay, Gen AI, we're still not there. We wonder whether we actually will get to fully autonomous GenAI. So I'm going to keep my answers to what we have today. Okay, so chat GPT four and what's coming now, the GPT four turbo, that already aggregates a lot of different modalities. Do I think startups will actually improve their. I think, I mean, if we look at the overall statistics, we know that over 90 or 95% of startups will fail. And I still believe this will still happen. So majority of startups will likely fail.

Now what we have is that we have a very powerful tool to actually reduce the failures, right? So a lot of the startups fail because they don't do a proper customer validation. Well now guess what? With AI, you actually have the tools to really do way better in terms of customer validation. But then of course startups also fail because founders disagree. And there's a lot of examples of startups that went bust because of founders human relationships. Right? So will AI solve that? I don't see that. Okay, so of course startups will still continue to fail and it's part of

the game. We know that the ODs of succeeding first to reach the product market feed, then to be able to scale. I mean, there's plenty of challenges and plenty of things that can go wrong.

But I do agree with the topic that, well, AI does give you amazing tools to actually accelerate this kind of first stage, which is getting into product market fit and then the scalability. So what I'll see is that most likely, obviously the startup ecosystem will change dramatically because of artificial intelligence. And I believe that the smart entrepreneurs will actually kind of all use, or most of them will use AI to really increase their productivity, to really increase their outputs. And anyone now is able to do things that were unthinkable just one year ago. Right? So what I expect is also to see many more startups just with a very small team and being able to serve many thousands of customers all around the world.

So if you ask me like one year ago, what is the average size of the unicorns, I mean, we would talk for sure on the hundreds of employees, if not thousands of employees. Nowadays, in six months time or in the near future, I do expect to see many more unicorns with very small teams leveraging the power of AI.

Interviewer

Okay, so very interesting perspectives. Thank you for that here. Coming to the next and last general question here, in part one, thinking of a founder, do you think someone with no prior knowledge in GenAI can effectively leverage in these areas, compared to someone with a foundational understanding of GenAI. So comparing these different perspectives, yeah, I.

Expert 5

Think they both can use it. So the kind of the two or three characteristics that we've seen with OpenAI, let's talk about chat GPT, is that it's ubiquitous, right? And pretty much anyone in the world can have access, or most of the access to what's available out there, right? So myself, as

an example, if I pay the subscription, which I currently pay the premium version, $20 a month, you actually have pretty much the same tools as if you are the largest company in Europe, right? So you do have access to the same foundational model, the same interface. Of course, maybe some companies in the US might have access, like one or two weeks before, but I would say pretty much it's open to anyone.

Okay, so what this enables is that anyone in the world, as long as you have connection and you're willing to pay the $20 premium version, you have access to kind of top notch AI or chat GPT version. Not yet. Again, GenAI, what does this mean? Well, basically, myself or anyone that is not necessarily a developer or an expert in computer science can actually benefit a lot from the power of AI. So I do see, from what I've been experimenting, anyone can code nowadays, right? I mean, you just ask in a common language, in English or whatever language you want, write me a script in Python for whatever task. I mean, this before was pretty much impossible. Nowadays it's possible, right?

And you can actually use it to revise your own code very soon, with what they've announced this week, you're able actually to create your own app, like your own chat GPT, the newest edition. So basically, you do have access to amazing technology and anyone can use it. Now, what this will represent, or kind of the consequence from these, is that actually if you build, let's say, a nap in your garage in one afternoon, then pretty much anyone in the world can do it, right? So to what extent will your startup be able to actually build some competitive advantage? So I think in a way it's much easier to build and to have your prototype and just put it out there. But on the other hand, anyone in the world can do that.

So the competitive landscape will actually be quite relevant and we'll see again kind of that the power and the importance of distribution is what makes the difference. Okay, so let me give you an example. I mean, I was playing around with an example of building tour guides. Okay, so I've been an entrepreneur myself in the field of tourists, right? I've seen over the past ten

years, over and over again, I see funded startups, like early stage startups coming with, hey, I'm building a mobile app, which is the best tour operator, the best tour planner for whatever market if you want. Now in less than 2 hours you can create a chat, repeat that is an expert in London, I'd say tour guide for London.

So you go there and you say, hey, I'm four years old, I'm going on a family trip, what do you recommend? And you have the best, the perfect tour planner, probably much better than the locals would actually do it, and very soon be able to book your restaurant and book everything very fast. But this is impressive. But at the end of the day, it's like, okay, but anyone can do it. So it's the power of distribution. It's going to become more and more relevant. So all in all, I think it's amazing times to be an entrepreneur. It kind of sounds like we're talking about the new App Store, which when Steve Jobs launched the App Store back in 2008 or something like that, with the iPhone. So it's like massive opportunities.

I'm pretty sure that we'll have the Ubers and the startups that were only possible because of that disruption. I'm pretty sure we'll see plenty of examples. So a lot of success cases, but I'm not seeing it become easier. Okay. And if we look in terms of funding, you have quite a lot of funding going to the infrastructure, AI. So you have basically the infrastructure and you have the app, right, infrastructure. It does require quite a lot of technical knowledge and so on that I'm not seeing a big difference. So you're seeing kind of the PhDs and machine learning experts and AI building new models, open source, also playing a very important model. So on that I don't see much difference on the app perspective.

Yes, I do see, I mean, if you wanted to build an app back ten years ago, you still need to have to hire a mobile developer for iOS, maybe another one for Android, maybe to have designers, maybe to have a UIUX expert, then you'd focus on customer acquisition and so on. Nowadays yourself can do it and can build a new GPT just out of your garage by yourself as a self learner.

So yeah, pretty interesting times. I'm not sure I agree with, is it easier, I mean, it's easier to have the prototype. Not sure if it's easier to get a distribution because of the competitive landscape.

Interviewer

Really interesting. You basically talked about the last question here, talking about democratization of knowledge. How is a good founding team still set itself apart? So you already touched upon that. So thank you for that. You also take my part now. So coming to part two, now to the specific areas, we're going to try to make that as efficient as possible. Having an eye on the time. So coming now. Again, you touched upon it already a little bit. To the ideation part here. Again, four questions. So question one, to what extent do you see the influence of GenAI on ideation as a startup? Can you also provide some specific examples? Maybe here.

Expert 5

Yeah. So for me, yes, I do see quite a lot of impact. So if you're just trying to come up with ideas, I mean, AI can definitely accelerate the speed and the pace and the initial validation of ideas, that's for sure. My second comment is that is what I typically share with students and any entrepreneurs in the world, which is ideas. It's not the most important. What's important is the execution. Right. So any startup, any success case, 99% is execution, just 1% is ideation. I still think that is pretty much valid. So what we see is strong impacts in the acceleration of the speed of the ideation process. But that's just like the 1% out of the startup chart.

Interviewer

Okay, perfect. Coming to the second one, it's sort of a comparative analysis. As a founder yourself, do you notice differences in ideation with versus, without GenAI. Can GenAI

minimize typical errors, for example, problems in idea generation, problem solution fit or validation, for example?

Expert 5

Yeah. Yes, I think so. The answer is yes. I do see significant impact from AI. The area would highlight is precisely the customer validation. So instead we would need to probably do some surveys, go out to the streets, really try to validate. I think now we can accelerate. It does not replace entirely. Okay. I still believe that we should be able, and we should still pursue customer validation in person, or just building out the website and actually see whether people are actually, customers are actually paying for that, depending if it's a B, two C app. So I still see that's very much important. But again, how fast can you do it? It's 100 times faster. Right.

You can actually, in one afternoon do pretty much like build the MVP of your website, integrate a payment mechanism and start collecting validation insights, and even have AI kind of understanding and helping you analyzing the results that you monitor. Right. So all of these you basically shortened kind of what used to take, let's say, a few weeks or over a month into. It's possible to do this in matter of hours.

Interviewer

Diving a little bit deeper into the topic of validation. Do you talk about sort of augmented validation? So do it in real and also with ChaTGBT, or do you also have specific examples? That's what I thought about doing a complete validation virtually. For example, having a customer that GenAI pretends to be, and then see if the product gets validated.

Expert 5

Yeah, I think that's a fantastic first experiment. So you can ask GPT, play the role of whatever customer for my new product. Imagine I'm building a startup that wants to sell whatever, like a new type of phone, let's say. I think you can get a lot of interesting insights from chat, GPT playing the role of a potential customer, for sure, but that doesn't replace the actual customer, the actual human paying for that. Right. So I think you can accelerate that, but there's still a very important part that you still need to do the work. Okay, this is with the current technology. What I think some researchers point to is to the world of GenAI, in which aCtually, you basically ask the machine, and the machine will do it, everything by itself, including actually paying and acquiring and actually becoming a real customer.

But I think we're still far from that.

Interviewer

So you see rather an augmented approach where human and machine are interacting rather than completely doing it virtually.

Expert **5**

Yeah.

Interviewer

Okay, perfect. Then coming to the last two questions of mediation. So it's about industry specific knowledge, or democratization of knowledge that we already talked about. Is industry specific knowledge with the search and processing power of information through GenAI still essential for developing good business ideas or doing ideation or problem finding a problem solution fit?

Expert **5**

Well, I still believe industry is relevant, industry knowledge from the entrepreneur. I think obviously, as of today, with the information that the LLM is able to provide, I mean, they do have quite a lot of knowledge across many or across all industries pretty much. But I think it's still very relevant and it's still not at the human level, kind of the search for opportunity. And I think for that, I think the best way to explain this is you need to understand what is an LLM? Right, an LLM, basically, they actually use math models to actually understand what's the probability of the following word, right. So it's not exactly the same process as if we're saying, okay, we're going to really try to understand what is a customer pain in this specific industry and build it from there.

So I think kind of the starting points are different. And in that sense, I still support the idea of industry knowledge from the entrepreneur being something relevant. Now, again, we're talking with what we have available today. I think no one knows how to answer that. In the world of fully GenAI, which I think no one really knows how to answer that. It might come to a world in.

Interviewer

Which.

Expert **5**

The machine is completely knowledgeable and fully knowledgeable of the industry. If that world comes, of course my answer can change.

Interviewer

Okay, perfect. Then I would wrap up the ideation part with the last question. It's basically touching upon human creativity versus GenAI. Do you think GenAI can augment or even replace human creativity, especially in generating ideas?

Expert 5

In the supporting the augment side, I'm a firm believer as of today, augmenting, it's the rule, and I think that's across many different industries. Again, if we're talking about artists, right? I mean, they can augment their capabilities, they can accelerate the speed. You can actually create a new script for a new series, a new whatever type of art you're talking about at the moment. I'm clearly seeing this as a tool to augment human capabilities, and I still believe that will be true for the next year, or at least the near term. Again, because of the exponential nature that we've been seeing with AI, no one really knows how to answer these in five years time. So that may change.

Interviewer

Perfect. Then, having an eye on the time again, I would do the approach that you can now self select the second part of the focus of the interview, and then we're going to wrap it up with some general questions. And then we already on the finish. So I would do it as that I now provide you the other focus areas and where you have the most interest or also most expertise. We can then dive deeper into that topic. So it would be the MVP part, it would be the software engineering part and the customer acquisition part.

Expert 5

Which one would MVP? Let's do MVP.

Interviewer

Okay, perfect. So then let's dive into the MVP part. Give me 1 second. Okay, so the broad topic is UI and UX design and prototyping. So what specific changes in the UI or UX design of startups have you observed due to the implementation of curative AI? Also touching for sure on MVP.

Expert 5

Yeah, I think as customers in general are more and more demanding. Right. There is no excuse anymore to have, let's say, a poor UX UI experience. Okay. So kind of what I'm seeing, the main consequence is that if you want to be an entrepreneur, if you want to build an MVP, I mean, the level has gone up. Okay. So there is no excuse anymore to say, oh, I'm not able to design, I'm not able to come with whatever images or so on. So now you do have the tools to do amazing job from day one. Okay, so again, it's superpowers without the need of a lot of investments, which was impossible just a few years back.

Interviewer

Okay. Other specific UI or UX or MVP issues that were effectively addressed by interactive AI. Could you also share examples.

Expert 5

Mean you can do like we used to talk a lot about a B testing, right. Kind of comparing. Do you prefer these or that? Right. And now you can actually run these 100 X. Right. So if you want to come up with the new logo, you can have 50 logos, come up with different versions of your MVP. It depends on you. I mean, it's just a very simple command line and you have the

superpower to have many different versions and then being able to test it. So again, superpower to the entrepreneur, the level of MVP is just going up and I think that will be across all areas, including in the education sector. Right. So before, when teaching a class of entrepreneurship, I would be expecting to have kind of the first steps of what could it be?

And now you immediately actually can build. Right. It depends on the student. The student has full capacity to actually present a very solid MVP, which at the end, I think it's good for everyone.

Interviewer

Okay, interesting. Then last question here. From a cost efficiency perspective, how has GenAI impacted the MVP development process for startups? I think you already touched upon that. Interesting. Could be perspectives. It's time, cost and quality potentially, that you could touch upon.

Expert 5

Yeah. And as a consequence, you actually don't need to raise that much money early on, and you can do much more with less resources, less time. It's really augmentation acceleration, which is, I think, an amazing, again, it's an amazing opportunity for any person to actually start their own projects and new startups. Okay, perfect.

Interviewer

So then we conclude the interview by two final questions. It's a broader perspective. Are there any other areas we haven't touched upon where GenAI could have.

Expert 5

An impact from your perspective, right. I think for sure, in terms of the customer acquisition, that's also very interesting and more broad sales and marketing. So before, you probably would need to have quite a sizable team in terms of marketing, generating content for your own blog, generating content, kind of developing your own inbound strategy, talking about the world of software as a service. Now you can basically with one person, again accelerate a lot, the level of production. Right. And so I think in terms of marketing is very visible, the impact that we have, again in terms of sales, same process, in terms of later stage, the customer success and customer support, obviously it's an area that you already see huge disruption. So I think AI actually touch upon many different areas, operations, customer success, engineering for sure, with the copilot.

And you see that basically one developer can perform Ten X what they used to do just a few months ago. So it's very visible. The impact across all areas of the enterprise now again is how can we leverage this superpower to actually increase productivity, to increase human and societal welfare. And I think that's going to be kind of the challenge that we're going to have to discover as people, as the human species in a broader sense.

Interviewer

Okay, also a question, maybe focusing also on that. Thoughts? Fast forward 50 years, how do you think historians will describe the influence of curative AI on early 21st century startups?

Expert 5

That's fine. I think it's going to be massive, right? I mean, if we ourselves at this point look back, we clearly highlight the advent of Internet, which actually took quite a lot of time, but then there was kind of a clear defining moment and we look back and we see, well, Internet revolutionized pretty much all industries, all countries, all global economies. Right? So I

compare the potential impact of GenAI as big as the Internet. So I think we're living through quite exciting times. No one really knows to what extent this will impact. We only know that it will have massive, massive impact. And I think for that we live in quite exciting times.

Interviewer

Yeah, that's for sure. So, yeah, thank you a lot for answering all the questions. It's really interesting to see you as you are an entrepreneur yourself and also have the scientific background. So that was really interesting and insightful also for myself. And yeah, I would conclude with a self assessment. I'm going to share my screen now. It's essential for us. It's on the right. Part four, self assessment. It's basically, how would you assess yourself in a specific GenAI area with your knowledge? It's either one, two, three, or like.

Expert 5

Beginner, advanced, proficient, expert or pioneer? Well, I would say number two.

Name	**Expert 6 (E6)**
Categorization	Expert
Description	Expert 6 is a Project lead in the Venture building consultancy Excubate. He is co-founder of a B2B software startup, with expertise in leading consulting teams for startups and corporate clients and uses GAI in daily consulting and Venture building activities.

Interviewer

And we're going to deep more into the topics of ideation, product development, so MVP and

design direction, but also code engineering and then on customer acquisition and how basically GenAI will impact the typical stumbling blocks and success factors in building a startup. The interview will be structured at first with a part of general questions kept really quite short. Then part two will be a deep dive into the main parts that I already mentioned and then at the end we're going to finish it with, again some concluding broader perspective question and then we're going to finish the interview. So then I would start with the general questions. So here before we deep dive, let's dive right into that one. So have you integrated or worked with GenAI in one of the mentioned areas?

So Ideation, MVP or design, code engineering or customer acquisition yet?

Expert 6

Yes, I worked in customer acquisition with GenAI. I work in marketing and brand Ideation with GenAI and also in simple code creation. Okay. I mean, ideation depends on what that includes, but I probably also used it there.

Interviewer

Okay, in which of these areas have you seen the biggest shift in your capabilities and way to approach solving the challenges special to these areas, especially when using GenAI.

Expert 6

I think it's important to look at individual use cases in all of these areas. I think GenAI right now is being seen as a wonder weapon for any use case and I think that's wrong. I think it can be of an extreme value if used correctly. And that mostly means in situations where there would be a lot of manual effort to do it. As an example, in customer acquisition, in a consulting project I did, we used a tool and I probably cannot say what the name is, it's called Spark beyond the

tool. We use it as a GenAI tool that creates market intelligence reports that you can then use for competitive intelligence but also for customer acquisition.

What the tool basically does is it creates a report that formerly would have been a lot of manual work to create and now you can. Using that tool, you can just create your workflow which takes some time, but then via one click you can create these reports. And that was quite value adding in my opinion. But in other areas I've also made the experience that sometimes it's just not the right tool. For example, we had marketing ideation on brand names for a startup that we founded. We used GenAI to ideate different names and brandings and to be honest, the results were quite repetitive, not that creative to be honest. And everything just felt seen before. So it wasn't the tool of choice. And we then in the end went back to an advertising agency that created it. Just to give a few examples.

We can also later deep dive on those if you want.

Interviewer

Perfect. Yeah. So do you think using GenAI in these areas will increase the probability of startups to succeed? And if yes, why? Or if not, why?

Expert 6

I think it can have a positive influence if used correctly. If we think about the pains that startups have, one of the main pains is they have no budget and probably also not that much of human resources they can use. GenAI, as I said, is a great tool in cases where you have a lot of manual labor that can be replaced. Things that are repeating, tasks that are repeating, right? For example, looking for, I don't know, looking for target customers from LinkedIn or something or screening markets, screening market shares or whatever. Things that people would take a lot

of time to research. You can use Generative AI programs to create reports automatically and also interpretation in it, right? It's not just research, it's also interpretation. However sorry.

Expert 6

So on that end, it could really help startups because as I said, they lack this time they lack the resources to have somebody being paid to do that. Often founders, at least in a lot of cases founders have a day job they do next to founding their first startup, for example. And also in these cases, GenAI can really help them to make the best use of their time. However, there's a grain of salt because GenAI first of all just replicates existing information, right? So the chances of finding something out that others do not know or of having a really high quality report are low in my opinion. To have that quality, you again need solutions that do exist, but then these also come at a high cost, right?

Expert 6

So a report of the top in class tools will cost you tens of thousands of euros.

Interviewer

All right?

Expert 6

So that's one side. I think founding startups is a lot about creativity, a lot about knowing the unknown, right? So just going new paths, trying out new things, learning about new things. And I think general FII or AI in general can help here a lot as well, because even though it just replicates information, it can nudge you in new directions, nudge you in directions that you

maybe didn't think of before. For example, I don't know if we use Chatgbt, which is probably the most famous tool right now in that area.

Expert 6

If you're writing a business case or a business plan or whatever for your startup, it can really help you structuring that and trying to not make common mistakes that are not a matter of the content that you do, but maybe a matter of structure or a matter of best practice in these areas. Somebody that found a startup that's maybe not a business genius or not a economic student or whatever, imagine you study physics and want to create a physics startup and you need to write a business plan, but you never studied economics or business administration. So there GenAI can help a lot because it will show you best practices for writing a business plan, or applying GAI to frameworks like Lean Startup or Design Thinking for example. So that's also a usage I would see especially for non-experienced founders.

Interviewer

Okay, so thinking of a founder, do you think someone who has no prior knowledge in using GenAI can now effectively leverage in these areas compared to someone with foundational understanding, especially in the age of GenAI. Compared to AI applications in the past.

Expert 6

Definitely. It became so much easier. However, somebody that is unexperienced will probably take but by choice, start with tools that are for free, right, that will not feature the same quality as the best in class tools. So that's the first thing. Second of all, somebody that has no experience at all might take the information too seriously and see it or look at it not critical enough. And that is one of the major risks I see with GenAI that in the end, you still need to validate if it's

valid what the AI created, because the AI has no mind of its own. In the end, it's just, as I said, replicating information. So the risk is always there that there's actually some wrong information in it.

Expert 6

And if you have no idea about the topic that you let the AI research on or create on, you're also lacking the expertise to actually understand if the quality is good enough or not. And that's a huge there's this effect in literature called dunning effect, and it means that you need a certain expertise to actually understand that you have no idea about something and general FAI gives people the impression that there are experts on things that they have no idea about and that's a risk.

Interviewer

Okay, perfect. So then I would say let's wrap up the general part now deep dive into part two. It's the deep dive into the main parts of the work. So beginning here with ideation, I'm going to give you a short introduction. So every startup starts off with ideating and creating a business idea through brainstorming, market research or problem solving. For example, things to consider here are experience in the market, good market information, a good problem solution fit, idea validation and business planning. Just to name some examples here. Yeah, just to give you some thoughts. And now we're going to deep dive into the questions. So to what extent do you see the influence of GenAI on the ideation or idea generation process or the idea validation of problem solution fit as a startup? So here a lot of points.

If I should repeat them, just say and yeah, also here if you have specific examples also open for that.

Expert 6

Yeah. So let's start with business ideas. Business ideation. I think it strongly depends on which kind of startup you are building. You can build a startup that is actually working in a business area that is not new, right? You can build a new online shop for example. With your startup you can build a product and just you can start producing products that are already there and you can just change something about it in the appearance or do something better about it or whatever. But basically I would differentiate between startups that create something completely out of the box new and startups that are in a market that is existing just trying to change things, doing things differently. In the startups that create completely new things, I see the potential.

Interviewer

I see.

Expert 6

Lesser potential because as I said, GenAI replicates information about things that are already there. I think it can give you, as I also said before, it can nudge you in new directions and it can help you sort your ideas and whatever but I don't think that you will reinvent a wheel with that. However, if you found a startup that is not on the top notch end of innovation, I think GenAI can be super helpful here because also here there is best practices in the market. As soon as there is best practice which is documented about the things that you're doing, AI can help you a lot because it can compare your ideas, it can compare your business plans, ideas, timelines and whatever with the golden standard and then also nudge you in the direction of where you should improve or could improve.

It could also help you with common mistakes or it could help you with the largest challenges in an area where there's a lot of information on. If we take the other example again, if you are in an area that is completely new, where there's no information on the Internet, where there is not a lot of documents, materials, articles, research papers or whatever, generate at least a public one, it will be difficult to use that in a valuable sense if we think about internal AI capabilities. I mean, you could also run some sort of chatbt like tool right, in your own company database, for example, so a greenfield startup will not have that. If we talk about corporate startups, for example, you could actually use that. And there I see a lot of value because let's make up an example.

We have a machine manufacturer from Germany, €4 billion revenue founds, a corporate startup that is, I don't know, selling machine hours, machine capacity by the hour. In that example, if you have internally all the reports of your machine's capacities, of the detailed information on the hardware of maybe the last 30 years of your machines running in your plants or customers and whatever, if you then set a GenAI on that to analyze this information, you probably can create a lot of valuable insights. But as I said, these are insights that are not publicly known and you somewhat commercialize on the internal knowledge that the company has. But there I would see a lot of potential, for example.

Interviewer

Okay, perfect. And how would you see the impact mainly on idea validation or especially also the problem solution fit? That would be the two other focuses of the question.

Expert 6

Okay, before I answer that, I would have to think about how you would normally do it. I mean, normally idea validation comes from probably from crunching data that you acquire on that

specific area that you're looking into and probably also from expert interviews, people that have an idea about that area. So for the data part, if it again is an area where there is information, it can probably help you. However, me personally, I wouldn't feel comfortable if an AI would tell me that's a great fit to this problem because it could be a nudge in the direction, but I would still try to critically reflect it. And I think it cannot replace human expertise. I think it cannot replace that. Why? Because also what makes an expert, it's a person that has more knowledge than somebody else, probably. Right.

Expert 6

And if we look at the top notch experts in a field, probably what they know is also not publicly available on the Internet, for example, meaning an AI tool could probably, if it doesn't have exclusive access to a database of expert knowledge, it will still reflect on basic knowledge. So I think you cannot just cut out the expert here in most cases. So validation would still require that, in my opinion. Also, validation has a lot to do with critical thinking, which AI is not that good at yet in my personal experience.

Interviewer

Okay, perfect. Some pretty good insights. So let's jump to the next question here would be sort of a comparative analysis. So as a founder or as a consultant, do you notice differences in ideation with versus without GenAI. So could GenAI minimize typical errors or problems in the idea generation or problem solution fit process or again in the idea validation process?

Expert 6

I mean, I of course tried it out. I have ideation workshops, validation workshops where I used GenAI tools. I think what happens is the ideas people that are naturally not creative get more

creative and people that are naturally very creative get less creative. It is an equalizer. It brings people more to the same side of the coin, I would say. Why? Because it nudges them in the same direction. Kind of. Most of the ideas that came out were quite how would you say that? Quite compliant. I made the experience that the really high in the sky crazy ideas were reduced but also nonsense ideas were also reduced. So overall you get more on an average level. That's just my experience. Maybe we also I mean, AI is all about how you ask it, right? So maybe we put in the wrong queries.

But this is what I experienced and I would use it probably early in the process. And when you really talk about details and get more into the inside of the ideas I would stop using it and really rely on people's brains. Then what you could also always do is you have a certain set of ideas that you created and then just ideat some more with it. What I probably want to say is never 100% rely on it but always remain with the human option somewhat within these processes. Otherwise your results will just be average and you probably strive for better than average.

Interviewer

So basically that would be your opinion too in the question. Do you think Genai can augment or even replace human creativity in generating business ideas now or in the future already? It would be basically the same answer. Or would you answer differently on this?

Expert 6

I don't want to sound arrogant, but I think at least for now and from what I've personally seen and I of course cannot know if I'm completely right with that but I would say that the real big deal ideas will not come from it yet. Okay. As I said, the more repeatable your business is that you want to build, the better you can use it. But the more never before seen something is, the less it will help you and probably will even damage your idea.

Interviewer

Yeah, interesting opinion. Perfect. So then we can wrap up the ideation part and then proceed to UI and UX design and prototyping. So here also an introduction. So after having a product idea refined and the business model thought through, the product must be designed. And first prototypes for user testing need to be created, often without much functionality. So let's dive deeper into that topic explicitly here. So the first question would be, what specific changes in the UI or UX Design startups have you observed due to the implementation of GenAI.

Expert 6

That is an area where I cannot say so much about, to be honest. What I think it can help with. I mean, UX Design has become a research area of its own, right? You have UX designers that are highly paid. If you want the good ones, you pay a lot of money for them. Mostly you hire them via services. You probably cannot afford them as a startup. What AI can help you with is also here to not make the most common mistakes, I think. I think you can use it to review your work. You can even use it to build basic things. However, you will never achieve greatness with it. Also here, in my opinion, I think it kind of replace an expert UX designer completely. But if average is fine, and sometimes it is, it's maybe a good way to go and also to save some cost here. Also, it democratize this skill set because we live in a time where UX designers are being where it got so complicated, this whole area where there's so many options and so many things to think about and all of that. And if you are, again my example with a physics student, you built your physics startup, you have no idea about UX Design. It really can help you to not make stupid mistakes in the beginning, probably.

Interviewer

Okay, perfect. Last question here to not dive too deep into it. Are there specific UI or UX issues that were effectively addressed by GenAI. Do you have maybe some examples here also, maybe from a typical daily work or venture building?

Expert 6

Could you repeat that, please?

Interviewer

Are there specific UI or UX issues that were effectively addressed by the capabilities that GenAI presents or gives you as a founder or venture builder?

Expert 6

Yeah, I have a really good example for that because literally before this interview, one of our websites went live for one of our ventures. And one issue I always had in the past was that you always want to in the beginning of a venture, you want to collect customer data and customer addresses and contact names and whatever, right? So what we do a lot is also in the problem solution fit. It's also about that you try to ask your customer potential customer questions, and you need to collect these answers somehow, right? And you also need to make an experience for the website visitor for your potential customer. That is nice. And till now, until this year, we mostly just used things like Microsoft Forms or whatever. It was really boring. It felt really from a UX perspective, it was horrible, right?

Expert 6

You had so many clicks and so on. So today we tried AI. We used an AI tool that first of all, we told them what kind of information we want. It created questions for us. And then it had

also including a chatbot that now replaces the Microsoft Forms with an AI chatbot that you chat with. And it just has a nice conversation with you. But in this conversation, it just retains all of the data you need from the user. So the experience got much better. It's really a neat experience. And that's an example app on this.

Interviewer

So much more interactivity.

Expert 6

Exactly. It's questionable how much of GenAI versus whatever else you want to call it is, but there's generative parts in it and it also recommended a question.

Interviewer

Yeah, perfect example. So then let's also wrap this part up and proceed to software engineering. So also here a short introduction. Software engineering is an integral part of many new ventures and a capability that can shape the main product of a startup in the digital era. And GenAI is said to have coding capabilities, but we will have to investigate to what extent they are capable to change the founding process of new ventures. So this would be the short introduction here. And now to the questions. What areas in the process of software engineering were the most impacted through GenAI. And what is the impact on the resources needed in an early stage startup when they are in the founding process?

Expert 6

So there's a variety of things to say here. First of all, as I said, with the UX design, general FYI can be the great democratizer, right? Because also here again, as you said, coding skills are vital

for most businesses that are being created right now. But not everybody can code in 20 years, probably everybody that visited a university will be able to code right now. It's not that like that. So what generated AI can do here is to really support people in creating easy codes for easier solutions. Again, you will not create a master code for a master program with it, right? But it gives you the basics. And what it enables you to do is to give it qualitative information to describe what you want the code to do, and then your AI will program it for you.

And this starts in very easy use cases or basic use cases. Like in Excel, you can create macros written by GenAI for your Excel spreadsheets, but it can also code much more complex codes, right, in typical coding languages like, I don't know, C plus or whatever. So again, here on the basic use case, it can be quite valuable, but it will not replace a master coder, in my opinion. Could you repeat the question again? I also had different thoughts.

Interviewer

Yeah. What areas in the process of engineering were the most impacted through GenAI. And what is the impact on the resources needed to start a startup?

Expert 6

Yeah, of course. It will save you a lot of time, right? And resources, if you use it extensively. The quality issue is still there, as I said. Where it also really helps is, as you know, you can code a solution to an issue and you can code it in a million different ways. And good code is beautiful when it is simple. The simpler the better. The simplest solution for a complex problem is the best code. Somebody that has no coding experience will code probably quite complicated and somebody that has a lot of experiences when you look at their code, it will be much neater, nicer to look at, right? That's what people call nice code.

What generator I can do is to take the code that is actually solving a problem and then reduce it kill doubles in it, make the code leaner, do all of that cleaning up. Which would take somebody that couldn't. Write the perfect code in the first place or a good code in the first place could really help them, I think, and also save a lot of time. So that's also an opportunity I see here.

Interviewer

Okay then, following up to this one through GenAI, does a product oriented startup still need an engineer in the early team? If yes, why, or if not, why, what product? There you can differentiate if you like. Also maybe focusing on digital products, for example, as it is easier here, right?

Expert 6

So let's assume it's a digital product because otherwise why would you need an engineer, right? A software engineer? I wouldn't say it could no, it cannot replace the person. However, if I think about the startups that we founded, if you look at the early headcount that you have in a startup, if it's a digital startup, if it's a digital product, you have very few business people and a lot of developers normally. So I think the role of a CTO that is in lead, also in strategic lead of the development team, that also is the bridge between understanding business and understanding tech. That role is vital in the founder's team. And I think you need that role and you cannot replace it by AI. What you could maybe replace by AI is more junior software developers, maybe. I wouldn't say you can replace.

Expert 6

Think there's always the need for personal interaction and real developers, but you could probably overall reduce the amount of FTE you would need. So maybe if you have a startup

team, early startup, you have only five developers or whatever, you could maybe reduce that to four and a half or something if you use it correctly. It implies, however, that the CTO and the other developers actually make the best usage out of it.

Interviewer

Okay, perfect. So then wrapping up with the last question here, what potential shifts might we expect in startup engineering with the unveiled sync capabilities of GenAI. So here the potential future perspective maybe taken into account.

Expert 6

Oh, yeah. So, worst case, what could happen in the future is that we have AI based businesses completely automated. They just test different weird business ideas. So many automatically fabricated until one hits and then there's real people being set on. So I could imagine that. Imagine millions of AI generated landing pages for millions of weird nonsense products until by mathematical fact you will reach a sweet spot somewhere. Right? I could imagine that. Interesting horrifying future, to be honest. As I said, I think for me personally, and I don't want to sound arrogant, but for me personally, AI generated things are often very often, not always very often of mediocre quality. So the worst case also here is that we are flooded with a sheer wall of mediocre quality information. Imagine newspaper articles written by AI, websites written by AI, everything written by AI.

So it's a really dark thought. But what could happen is that personal curated information and personal written information becomes a luxury that people imagine. 100 years ago everybody was wearing handmade clothing. Today 90% of people wear fast fashion. So what about in the future? Imagine a world where people, just 90% of the people just consume AI based mediocre information and only a top 10% that has money can actually consume real innovative

information because it actually has somebody thinking about it and giving new impulses because AI, as I said, can only replicate.

Interviewer

True. Yeah. Interesting and nice to hear that you connect your personal background also with this stuff here. Okay, then let's come to the last focus. It's customer acquisition also here during introduction. So once a finished product exists, one of the main challenges for startups is selling this product. This can be done via sales efforts. So we're going to focus here on sales efforts and prime use cases for geni as it evolves a lot about writing, text or generating content, for example. So let's take a look deeper into that area and start with the first question here. Based on your experience in which sales activities can geni be applied, can you provide specific examples?

Expert 6

Yes. So first of all, before I answer that, it's not one, but it is the most difficult problem of startup sales. It always fails with sales, always. When you cannot sell whatever your idea is, you're lost. So if we think about sales as a value chain, you will probably start with something like lead generation. Then you will have something like lead prioritization, then you will have first contact whatever. Or maybe let's just assume you have a pitch or something and then you have negotiations offerings, negotiations. And then after sales, let's just simplify it like that. So lead identification, it can be of great help. And I think this is one of the most mature use cases and one of the most valuable use cases for companies in general. I know that a lot of large clients do that.

I had consulting projects in exactly that area. It could be helpful for startups. However, here the good. Platforms that offer it are very expensive. Very expensive. Meaning starting at 50,000 a

year making it probably too expensive for a startup. However, I've seen great tools for that. For lead identification. GenAI or in general can really help you to find these leads and targets that you couldn't find via Google search or via visiting a trade fair, whatever. And what it also can do is it will make similarity analyzes. So you give your perfect customer, it will give you tons of other customers that feature the same attributes. What is also interesting, and maybe that's one of the few areas where it is better than humans, it can make similarity analyzers about things that you as a human didn't even notice. So I had that example.

I had that I worked with a manufacturing company and we tried out a tool like that and we put in the perfect customer. And then it gave us a bunch of new target customers. And the first thought of the sales team was what the hell, they're completely uninteresting. And then we dig deeper into it and then we realized that the GenAI had found things out about them that we didn't even know and couldn't research on our own. But it made a lot of sense to actually target these customers. Also, there's a thing in these programs, there's a thing called intent search. So you not only search for leads and for company details for your sales list.

What the tools today can also do is they can give you the intent, they tell you what these people are actually looking to buy and then the AI also analyzes that and gives you recommendations on how to pitch your sale. And that's also amazing. Also something that is very hard to do as a human. So it's very valuable here. I would say I've seen great use cases in action. Actually, it's not theory perfect. If we then think about the pitching and negotiation phase. I mean in pitching there is AI programs that will coach you through your sales calls, that will monitor the emotions of your customer and will give you tips that's also already used. Great thing. In negotiations, GenAI can quickly provide you with necessary, for example, contracts. It can write you legal forms that you need, it can write you NDAs.

So there is a lot of these are things that are issues that sales have because they need to do that but are typically not in their expertise, right? And here, these can actually help. You can also

do if you have different contracts and negotiate larger contracts. You can have via similarity analyzers as well or by comparison analyzers. You can have AI compare different contracts with each other and also warn you about things that were changed. That's cool. And if we talk after sales, I think there's also a lot of potential here. First of all for Upselling because these AI tools that you use for the lead generation will also help you by proactively noticing you about new sales opportunities at existing clients. So that's a great thing.
simple AIS were used. Right, if we think about chatbots and all of that stuff. But also here, I think there's great potential for the usage of AI and also GenAI. You can save a lot of resources. If you send support requests to Microsoft today, for example, a bot will answer you. You will notice that it's a bot. It's really well made. So you can automate a lot of things here.

Interviewer

Okay, perfect. So many great perspectives here. Maybe coming from the other side, are there any specific use cases, you know, that are not able to be solved by GenAI. Yeah.

Expert 6

Closing the deal. I mean, in a lot of businesses, if you sell a standard product, you sell hairpins on Amazon, whatever, you have a landing page, everything is AI generated. You never have contact with your customer. But if you sell a complex product, if you sell a service, if you sell something that is not profane but has some kind of complexity to it, you need a person to close the deal. Because people love people and people sell to people. So I think that very personal component of sales will remain and is super important. Of course, you could now argue that really well made bots in the future could be able to do that. Maybe they can. I haven't seen it yet and I would still say that sales is a people business or a people activity. Let me think about more things.

I mean, AI can replace first level support on the after sales, but maybe not third level support. There will be a lot of problems, probably. I'm sure that it can in some areas help you there, but it cannot replace the whole thing. Yeah, maybe. Let's stick with these two.

Interviewer

Okay, perfect. So then, coming to the next question, compared to a regular sales process, how much time could be saved by implementing genuine AI? And what are big time saving areas? You can try to argument with the three dimensions that you already mentioned, like time, quality and cost. Could be an interesting perspective here.

Expert 6

I think to implement AI takes some time. First you need to program it. You need to set the parameters and options and whatever. Once you've done that, you can save in the lead generation, for example, 95% of the time, I've seen that also in life, you could save in first level support 100% of the resources because you can completely automate it if you also here, set it up the right way. So you need to think about it as a longer term investment. You need to really make sure that in the lead generation, for example, that you really capture what you need. That you don't have white spots in it. You need some test runs. You probably need to do the double work in the beginning for one, two months to just check if the AI is set up correctly.

But then if you think it long term for the next years, you can really save a lot of time. Let's talk about opportunity, cost. If GenAI, I had this discussion with a client once and they said, well, it's very expensive, it's $100,000, this tool. And I said, well, sure, but if we get a single lead that turns into a sale in your company, you have an average sale of $1 million. Because you sell ultra complex high tech products, you have an average customer value of a million. If we attain

one single if we convert one single lead into a paying customer that this AI found for us over the next ten years, you have a break even. And that's a great calculation.

Expert 6

You could argue, of course I cannot tell because it was two years ago, I cannot tell you now if that worked already. But you get where I want to go, right? It's very hard to make a general statement here. It really depends on which exact area use it. How well did you understand the use case? And also has to do a little bit with luck.

Interviewer

Perfect. All right, then I would say let's wrap the individual parts up. Coming part three, finalizing our interview, concluding with a broader perspective of questions. We have two questions. The first one, are there other areas we haven't touched upon where GenAI could have an impact that you could think of? If there is none, it's also okay, but if you I think there's a.

Expert 6

Lot I think marketing, which is closely related to sales, but in marketing it can probably help you a lot.

Interviewer

So the operational side maybe?

Expert 6

Exactly, yes. Operations, to be honest. It can support in any area. It can support you in HR, for example. It can support on very operative things. It can probably also help you in reviewing a

strategy or whatever. But here we come to the same problem again with equality. But it's a little bit of annoying answer, probably, but I would say you could find a use case in almost any area of business. But I also think that sales is one of the predestined, best areas right now with the level of quality in these tools that we have today.

Interviewer

Okay, perfect. So then, last question, fast forward 50 years. How would you think historians will describe the influence of GenAI on early 21st century startups? So here also very vague perspective, but it's going to be interesting.

Expert 6

I will think. I think we're not there yet. I think in ten years maybe, I think it would change everything. Not only startups it would change completely how the world works, I think with a larger complexity of AI and by also conquering these challenges that I described before with equality and being stuck in repeated information, all of that. If we achieve to go beyond that, I think it will change everything because where would you start? It starts with people in schools don't need to learn the things they learn anymore. It will make so many things redundant. It will make all repeatable things redundant. It will make a lot of jobs redundant. Maybe there will be no starters in 50 years. Maybe there is no more need for it.

You could probably answer anything to this question, but I can see one big risk also here again, I mean, things like Chetcher BT are owned by somebody in that case Microsoft. Again, I think of an AI, I think owned by Microsoft, but there's megacorps like Google and Microsoft and whoever you want that own these AIS and that own the technology. And if you make millions of jobs redundant in the future by these tools being owned by supercorps, if you have all of the information all stuck in one tool that is also owned by a SuperCorp, that you always have to

remember that the information you put in Chat GBT, the public version, for example, just goes directly to their database. I think there's a great risk of undemocratizing the world.
I think there's a great risk of creating a two class society of 0.1% tech owners and the rest. That would be the darkest future I could see. It could be the end of our society as we know it today. It's a very dark prediction, I'm sorry, but if we think a little more positive about it, we could say that it is a great democratizer. It enables people that didn't study, for example, or that didn't study economics, that didn't study a particular field. It really enables them to still have a voice, to still build something. If we think about development countries, for example, it will help people to have a source of knowledge, to have an access to global best practices, to be part of it. And for example, imagine imagine that.

Expert 6

Imagine the 18 year old that comes from a family that doesn't have so much financial funds and he needs to go to an interview at a consultancy because he has great grades but he never had contact to anything about this. He doesn't know how to dress there, he doesn't know what kind of questions they would ask and he's very insecure about that because he didn't grow up in that area. And maybe here a Bot or an AI where you could without shame asking the questions like how to address for this interview, what will these people ask, what is it like in these companies? Maybe that could help there, right? Also a dark example, but there's millions of examples. I could talk about this the whole evening. But you get my point, I think.

Interviewer

Yeah, I get it. Yeah. Perfect. I think that's with a question part now we come to a self assessment part. Going to share my screen for that. I hope you can read it. It's on the left, pretty small. Can you read it part four self assessment so here it's about you have consulting expertise but now

it's about also the GenAI expertise just to make an assessment here where would you see yourself as we are interviewing a lot of different people and now we have to categorize them somehow.

Expert 6

So I need to assess myself in one of these four categories.

Interviewer

Yeah, exactly.

Expert 6

I've seen and implemented different solutions. I have a lot of knowledge about it. In other areas I might have no idea at all. Right but for the examples I gave you I'm probably expert.

Interviewer

Okay, perfect. All right, so then I would say let's wrap it up.

Name	**Expert 7 (E7)**
Categorization	Advanced Proficient
Description	Expert 7 is a renowned lecturer in entrepreneurship and innovation at Nova School of Business and Economics, recognized for leading the school's Executive Education to global acclaim. With a diverse career spanning banking, academia, and television commentary, he also serves on several strategic boards and consults on organizational agility.

Interviewer

So yeah, I would say let's start directly into it. So the first question would be have you integrated or worked already with GenAI in one of the specific areas? So to repeat it again, ideation MVP or MVP design, software Engineering or Sales and Marketing?

Expert 7

Software engineering to a great extent. And a bit of Sales and marketing. Not in Ideation and definitely not an MVP. Although it's benefits in MVP. I do not see any benefits in Ideation. How's that? But that's just me.

Interviewer

Do you think using generate far in these areas will increase the probability of startups to succeed? If yes or no, why.

Expert 7

No? So let's take the concept of a startup in the multiple dimensions we talk about. Right? So what you've got is you got dimension number one, which is ideation phase, right? Ideation phase. Typically, as you know, for me it's all about identifying failures in the market. And I don't think that there's any way that any type of AI can help do this because typically what we're looking for is seeing things that historically there's no data to support. You're just instinctively starting the ideation process and then as you develop it doesn't really work. I've seen a lot of Generative AI used, for example, in producing PowerPoint slides and stuff like that and creating supporting data.

But that's if I want to talk to an investor or build a pitch, I know somebody set up a startup using GenAIto sell T shirts, but honestly, I think he could have done that with Microsoft, with Siri

on. So I think for the ideation phase, I don't really see it working because I don't think that's what it's designed for. Okay, where do I see it working is in what I'm going to call the resource poor structure of the startup world. So typically, if you're a startup, you have less resources. And in terms of replacing data collection, data storage, preparing reports, presentations, all that stuff, I think it has a much bigger impact on what you're doing, reading contracts, reading stuff, et cetera. Now, is it critical in designing an MVP? No. Is it important incorporating in certain MVPs?

Yes, if your startup is in that space. Okay, so I think in that sense, no. Now in the last couple marketing, sales, et cetera. I think there's a lot of automation done today in customer acquisitions where, again, you're resource poor because your founders typically start by being your Main salespeople and then they slowly have to transition to a more strategic role and they can easily now Automate a lot of the scripts that they're running. In terms of marketing and customer acquisition, I think there has enormous potential to help accelerate the scaling process. Always as you go through the stuff, GenAIis very interesting because what it does is it allows scaling. So I was looking at Morgan how today they're using it to accelerate reading contracts, to accelerate presenting, creating PowerPoints with analytics.

So what it does is allows them to move faster from zero to something to do. Does that make sense? And I think who's it going to hurt? It's going to hurt young interns from Nova who love to do Excel spreadsheets. I don't really see them having a long career doing that. But on the other hand, it's more about scaling in resource poor environments. In that sense, I think it's incredibly powerful.

Interviewer

So do you think comparing a founder who has good knowledge in jointed AI and comparing a founder with just foundational understanding of it, is there really a difference in how he could

potentially scale a startup or make it successful in the future? Especially when you have a look at the rapid advancements that GenAIis?

Expert 7

I don't like to use the term. Okay, I understand you're doing a questionnaire, so I have to be the answer. But if we say if the founding team has conceptual knowledge of it, I think that's already a huge step. Having detailed knowledge, I think is useful in the scaling execution phase again. So from a conceptual phase, I really need it because it helps me incorporate. It's a tool I can incorporate in my MVP. So what I can say is if I understand GenAI, then when I design my MVP, I can incorporate characteristics that I know are executable. Makes sense. If I'm designing a product that is a recommendation engine, I can understand how to incorporate AI aspects of it that are executable and therefore realistic. Do I need to get high knowledge to do that? Probably not.

Is it useful again in scaling phase? So if we think of ideation versus launch versus scaling, I'd say the deep knowledge becomes critical as we evolve through the system. Not so much in the beginning. Why is it good to have for founders? Because typically it's expensive to hire.

Interviewer

Okay. To let you know how we created the questionnaire, we wanted to dive into the four individual topics as everybody is covering one specific topic of us. So I would now go deeper into the four specific directions. Nevertheless, if your opinion is if it has great impact or not, you can provide your personal opinion about it. So start in the direction of ideation again, so give you a short introduction of it. As you already said, every startup starts off with editing and creating a business idea through, for example, brainstorming, market research or other processes.

Expert 7

Yes, and I don't think they're replicable.

Interviewer

Yeah. Okay. I would go into specific questions here.

Expert 7

Because I mean, look at it. Do you think that since we developed the Business Model Canvas, have we had more successful startups from Business Model Canvas? No, I don't think it's the type of knowledge that helps in that stage.

Interviewer

Okay. Maybe thinking about the capabilities of market research that GenAInow with all the capabilities of web research is giving be that you can create more creative or more effective ideas by having a better market research through I don't believe it.

Expert 7

Because if you look at the ideation phase, you don't actually define your market until you go into your growth phase. Many startups that I've been working with, even when we get their first funding and we launch in the market, we still don't really understand what our market is. We're still figuring it out. That makes sense. And so it's not a lack of data, it's a lack of simple stuff. In the beginning, in ideation for phase one, you're developing an MVP in your mind that you think the customer want to buy. And then when you finally go sell it, you realize, hey, are they

buying what I expected? There's no data to sustain that. And so it's not like I have to review large amounts of data and reach conclusions from it. I'm still in that phase of figuring stuff out. I think as I go to scale phase and I need money, then yeah, then it can help in terms of market research because now I know my customer profile. I know this, I know this. And now when I go to visit VC. It's useful to have that, but it's more of a research tool, I'd say, in the final phase of fundraising and not so much in the early stage of ideation.

Interviewer

Okay, then, last question. Maybe fitting to your also personal opinion here, human creativity versus GenAI, do you think GenAIcan augment or even replace maybe also in the future, human creativity in generating business ideas in some way?

Expert 7

I have a hard time with that, but maybe I'm an old guy. Yeah, no, okay. All right, let me explain. So maybe it helps. I'm not a big believer in hackathons for generating significantly structured ideas. They're great for brainstorming and low level ideas for low level problems. So I can imagine if my Radiator is falling off the wall and I use Chat GTP to say, what should I do? It'll come up with six or seven suggested solutions. I don't really see me saying, I had a business idea I launched. Customers aren't paying what I expected them to pay. That Chat GPT is going to help me in any way. At that stage, it might tell me it is difficult to be an entrepreneur, be strong.

Interviewer

So you industry specific knowledge as the maybe most important thing to really create problem solving and market fitting business ideas. And Chatpc doesn't have it, right?

Expert 7

It's not that. It's what I'm going to call insight. You will notice that most entrepreneurs have an enormous difficulty verbalizing their idea in the first stages. And I think the fact that we can't verbalize it tells me that GenAI is going to have a hard time addressing it. I'm feeling I have an instinct.

Interviewer

Okay, very interesting. So, yeah, then I would go to the next topic. It would be UI and UX design and.

Expert 7

Directly diving there again. So separate into two pits. Right. One is the hard work of the hours I spend and the technical skills I need there. Chat GPT clearly comes in and replaces a stuff, which means it can accelerate the prototyping process. It can accelerate the improvement process. Makes sense.

Interviewer

Yeah. So what would be specific changes in the prototyping or UIUX design? What did you observe there? Maybe already like specific examples or let.

Expert 7

Me give you an example. So several founders with whom I work, we get to the stage where we do our business plan. We think we've got it right. They raise maybe 200, 250K. They raise three hundred k and then they go to market. Okay. I'd say 90% of the times the market gives them a

shock in the sense that people don't seem to buy the way they thought. People don't seem to pay the way they thought. The business model doesn't seem to match. And they now have two choices. We either give up or we start pivoting to new concepts and business models as quickly as possible. And this is where we tend to struggle because the founder doesn't have a lot of resources.

So if I'm going to try one type of product with one type of client and another one another, the prototyping and getting out there now is a linear process that's too small. With GenAI, probably I can do it in multiple dimensions all simultaneously.

That way it accelerates. A good friend of mine has a business idea which has to do with a lot of these online I won't call them fraud, but abusive behavior by companies, right? So you go to buy something, and you don't realize you're signing onto subscription, et cetera. Now, typically what's happening is so he sets up a test website to see how many people reach out to him because he's got a system where he can collect maybe 20% to 30% of these amounts because companies get nervous, et cetera. The point is, he does one website, then he waits a week, then he gets results. Then he tries a different one, waits a week, gets results.

You can imagine that with gentrif AI, I can run seven, eight websites simultaneously and therefore accelerate the prototyping phase so that I get quicker to understanding what my core business model is. So I see a lot as a tool that accelerates what typically took time. And don't forget, for founders, time is their most scarce resource.

Interviewer

All right. Do you think it could even replace UI or Ex designers or MVP developers in the future somehow?

Expert 7

Yes. Again, not the best in general. For GenAI, what I've discovered is if you see your work as technical skills, and then there's another level, which I'm going to call advisory skills. So one is I have the technical skills to do an Excel spreadsheet. The other one is I have the advisory skill to understand my client and what they want. Gender of AI will replace the first. I don't think it will ever replace the second.

Interviewer

Okay.

Expert 7

So the ability to move faster, because for startups, what this actually means is I will be able to do it with less resources, which means I can use my funding for other things, and that will really help in terms of Runway, then maybe coming to the customer acquisition part.

Interviewer

Yes, thanks a lot. So you mentioned that you have some experience in customer acquisitions and generic. Could you maybe give me a quick overview of how that looked like?

Expert 7

Well, typically, a lot of customer acquisition today is using online tools.

Interviewer

Right.

Expert 7

So you're optimizing campaigns, you're regenerating campaigns, you're adjusting them in time zones and platforms, et cetera. I think there's no doubt about it that you can see how gender of AI can allow you to scale that to end times what you're doing. And so in that sense, I think it's kind of part of the prototyping process as well. Right. It's about getting as quickly as possible. So you're adjusting. I think in my class I talked about unbandy and how they run most of them campaigns in the US. And the CEO has to be up at three in the morning to adjust. I think with GenAI, you don't have to get up anymore. AI will do it for you.

Interviewer

So do you see in the sales and marketing field, which obviously is very big, do you see certain use cases that are more prone to GenAI, but some that are maybe not as good and still need that human interaction, for example, in terms of creativity?

Expert 7

No, because I think in the online space, it's not about creativity, it's about volume and impact. Right. So I think it's much more of a data driven I think the big problem for marketing is as we move online, it becomes more data and less creativity. It becomes volume and less creativity. It becomes timing and less creativity and volume, data and timing is all GenAI. It's not humans. Humans are not good at those three things. And so I think from that sense, the ability to quickly switch a campaign to move, et cetera, and the fact that today GenAI responds to verbal commands as well, means that a classic CEO can now give faster instructions to the GenAI than they could to a marketing person.

Interviewer

So this all kind of sounds like it's working with existing campaigns. How do you take the view on coming up with campaigns in the first place? If I'm a founder, I want to market my product. How do I know how I can do this and how can I?

Expert 7

It's always been the problem. Right. So if you've ever talked to founders, they understand the pain point. That's how they started.

Interviewer

Yeah.

Expert 7

Their problem many times is translating that to their marketing team so they can translate it into a campaign. I have a feeling that Chat GPT will translate better than a human interface. And so it allows founders to be much more sensitive to campaign design and messaging. And I think if you just have to put a nice picture on top of it, hell, Chat GBT can do just as good a job as anybody else. And because you're rotating campaigns super fast through the year and through the day, you don't have those iconic brand building campaigns that you would do in the old days with Marlboroman and stuff like that. So typically now, if you grow and scale your business and you want to build a brand yeah. Then I think you need to be more careful than using Generative AI.

Expert 7

So always think about those levels.

Interviewer

Yeah.

Is there a limit? You would say? So GenAI is better to the first place versus when you hire a team, you definitely need sales experts or marketing experts or can it be applied all across the sales and marketing field? No matter what stage you're in?

Expert 7

It depends on your product. I mean, if you're selling low customer repeat, then typically I think you're much more GenAI than you're anything else. So think of a car glass, right? If you're talking about high engagement, then, yeah, you need to get away from the pure push. But if I'm just getting people to click once and spend €9.99, I don't really care about them afterwards. Trust me, I don't need a human there because they're just going to feel guilty. That sounds terrible, doesn't it?

Interviewer

Thanks a lot.

So that's it with my questions. I think we can go back to General Pat JP.

Expert 7

All right, any more questions? Do we have? I have things to do.

Interviewer

Yes. It would take like, three to four minutes and then we finished. We would conclude with a broader perspective of questions. So two questions here. The first one, are there other areas that

we haven't touched upon where GenAI could have an impact on startups that you could think about?

Expert 7

Yes, I think the whole operational aspect of it. Okay, so we're talking from booking flights, to ordering stock, to dealing with supply chain, to taking care of deliveries, you can see that a lot of this can be automated a lot. So what I'm saying is what it basically does is it removes one of the reasons the failures of startup is they run out of money because typically they have to hire and pay people to do stuff that's not critical, but without it, you can't survive. Okay, so I've got to get people to make sure that a sticker is printed for DHL to pick up from A to B. I've got to make sure that I call and book a flight because I have to get to New York.

There's a lot of stuff here that I think you're replacing manpower with GenAI in areas that I think we're going to accelerate much more. And I think what this will do is it'll give startups two things. First of a more runway, and second is the ability to focus their money on customer acquisition and on product redesign, which I think are the key aspects to success. So hopefully what it will do is it'll increase the probability of success.

Interviewer

Okay, perfect. And the last one, so going fast forward 50 years, how would you think that history will talk about GenAI on influencing startups in the 21st century? Will there be a BPM talked about digital.

Expert 7

Sorry, same as it talked about digital.

Interviewer

Okay.

Expert 7

What GenAI will do is on the existing business side, it will show failures and this will create an opportunity for entrepreneurs. So I think you need to see it in two dimensions. One is as a product in itself, and the second one is as an enabler of faster acceleration of startup development with lower cost.

Interviewer

Okay.

Expert 7

If you think about it over the long term, if you have more startups coming at lower cost and in greater volume, it will affect the way we see the startup community as being more experimental, and probably we'll see entrepreneurs doing more than one, three or five.

Interviewer

All right, so we'll talk about experiment.

Expert 7

With startups because each one is cheaper, right?

Interviewer

So time dimension, cost dimension, but also quality dimension.

Expert 7

I think startup is not about quality, and that's the difference. A Mercedes needs quality, a startup doesn't. It needs volume and speed.

Interviewer

Okay.

Expert 7

And GenAI is great at volume and speed. It's not the best at quality.

Interviewer

Okay, perfect. So, yeah, wrapping it up with a self assessment. I would now show you my screen, and here would be the part four self assessment. I hope you're able to read it. In which part would you define yourself?

Expert 7

There's no beginning proficient. Okay, I'm the second one.

Name	**Expert 8 (E8)**
Categorization	Expert

Description	Expert 8 is a Machine Learning Expert and Project lead at Merantix Momentum in Berlin, where he already implemented multiple GAI-Projects for a wide variety of clients, including corporates as well as startups. He works in the intersection of Management and Tech and therefore has a wide-ranging overview over the topic of GAI.

Expert 8

All right, so my background is basically I studied economics and I was kind of an intruder into the whole AI sphere. But basically machine learning is not as far apart from running econometrics models. So that worked out fairly well. And what I'm doing is basically AI project management, which means project acquisition, talking to clients, conceptualizing their idea into a fully fledged AI system and then devising from that an AI roadmap and obviously afterwards making sure that we stay on track in scope and in budget and managing the engineering team. And the company that I'm working for is called Merantics Momentum and it's one of different ventures that form the AI or Merantix AI ecosystem. And Merantics is an AI venture studio, which means they incubate ideas that have AI as a core enabling technology.

That means I've worked with them closely on a couple of ventures, we built their MVPs. I help them also assessing potential founders when it comes to their technical understanding and division and product idea. But then main job is really working on AI, coming up with ideas for clients and then implementing this. So I also myself had some, a couple of months ago, ideas on forming my own startup and I also use Jgbt for that. So that's why I really like the questions that you had. So that just is a general background, what I'm doing. And yeah, you can pick out what you want to deep dive in. Perfect.

Interviewer

Yeah, awesome. I think that's the main focus that we're also focusing in our thesis. So to give you also a broad understanding, I think you already had a look at it, but yeah, we want to research and analyze GenAI and its capabilities as well as common success factors and pitfalls for startups. So the focus will be startups and it's a really hot topic at the moment. And we choose specific areas. So it's mainly ideation product development, MVP and design direction, but also the engineering domain and then customer acquisition mainly in the sales direction. So that's basically the focus that we have. And at first we have here part one. It's some general questions that I'm going to give you and then we make a deep dive into specific areas that I just informed you of.

Interviewer

So starting with the general questions, I think you answered it already, but let's make it again. Have you integrated or worked with Gen AI in one of these areas?

Expert 8

So in one of these areas so let me describe that from what I'm doing at Momentum and the different processes that I'm working on and then we can pick out the different steps where I see and I already use geni. So geni is pretty broad, right? So when I talk about geni, I usually refer to chat GPT. So large language models, when it's about generating text rather than generating images, I also worked with generating images mid journeys, tabletfusion and the like. However, for my daily operations only text is relevant so I'm not generating pictures that much. So where I used JGPT particularly a lot is in ideating for customer that means coming up with general ideas, structuring an argument, coming up with the outline for a presentation for example.

And that's only as a first starting point because you usually shouldn't stop with the first prompt, you should iterate and really use it as a sparing buddy and that's what I often do. So I have an idea in mind when it comes to a particular client how I would structure the offering, what could be interesting to them and it's always then cool to basically check that with the LLM and then if need be, also human counterparty. But usually having Chat GPT as a partner is super sufficient already. So that helps me with the idea of how to structure something or to basically fact check and challenge my assumptions around certain storylines and proposals.

When it comes then to offer creation, obviously it's also cool if you can just provide some bullet points and then you basically write okay, can you extend that to a certain degree? Also then if you're writing in different languages, maybe translating to English or improving the style in a certain manner helps definitely so that's when it comes to drafting a proposal, same is true when you give talks. So what I also do for LinkedIn or talks in general, if I need to write short descriptions, if I need to summarize general idea, or if I need to extend a bit on certain topics where I might not be super familiar with.

I also just use it as a tool to basically expand my knowledge and writing style when it comes then to the development of AI or like development of a system of a startup idea of a concept. So more to the engineering side of things, what I know for myself there's this thing called Chetchip Co, I think it's called not Copilot. You can basically use it for EDA. So you provide a CSV file or an Excel file and you can run simple analysis. That's sometimes useful, sometimes it isn't. But what I know from our engineering units and especially the lead engineers, they work a lot with GitHub Copilot, which you can think of as a tool that accelerates writing simple code. And their feedback was basically it improves around about 10% to 20% in terms of performance. So they are just faster in writing.

Let's call it boilerplate code where you have standard code that you can provide as context to the model and then you provide also a prompt that say okay, adjust it to this and that interface

and make sure that this update is run and so on. And then this can be automated. So in terms of simple coding exercises, it helps them tremendously when it comes to more sophisticated coding and also when you basically write a new product where you really need to think about how to structure the code base. It gives a first starting point similar to writing text, but you always need a solid understanding of engineering, of coding and data and computer science to really make it bulletproof and better. But it already is helpful in that regard.

And then when it comes to Sales, because I think that was the last point that you mentioned, sales and client acquisition. What I consider particularly helpful is automation that is integrated into a CRM system. So customer relationship management already chat, GPT can be helpful drafting bespoke emails. So basically you have an idea how you want to structure an email. You then can provide additional context on a particular client, on the style, on the outcome that you want the text to achieve. And then you basically have an email template that you can then just manually adjust with, I don't know, HubSpot is one big CRM tool that you can use. You can manually adjust the campaign and then the name gets automatically filled in, but the text stays more or less the same.

And then there are already top notch systems and I'm pretty sure that they will get better over time. For example, Salesforce Einstein, which is a direct integration into the CRM tool. So Salesforce one of the leading CRM tools, they have an AI component that you I think for $50 a month per user you can acquire this add on and then it writes bespoke email content. I don't know how well it works currently, but that could be super useful in the future that you basically run your campaigns and you don't need to really write the text, but rather have it already adjusted by the AI. And what I also saw while working for a particular client is that now you have the Sales automation. So you have different steps in the Sales qualification funnel, right? You have a first intro call, then you have a qualification call, then you have a technical deep dived call, then you have budgeting whatever call with procurement usually. And then you have

a closing call and every campaign runs a bit different. But if you have a very standardized product that you can just send out to a huge number of people and then if they come back to you can qualify them. So basically have a playbook in place that when the AI understands a certain response, it already selects the next step of the playbook with the particular template to be sent out. So then you don't need any human in the loop.

It's rather the human only checks the statistics and see if something gets off the rail and then can adjust basically seeing, okay, we have a drop in, I don't know the qualification call, so what's the reason? Maybe we should adjust the template but they don't need to write the template or adjust anything for particular client themselves, but rather have it automated. That in my opinion only works well if the personal relationship to the client is not super relevant because you just have bunch of people that you do cold outreach to where it's more important to have really bespoke content and also human writing the text or at least overseeing what the AI is generating is when it comes to personal relationship. So bigger accounts basically.

Interviewer

Okay, some pretty good insights. Thank you already for it and you already made some deep dives into the specific topics. I would now finish with the general questions. I have left one or two and then make a dive again in the specific areas with more specific question as you now already talked about the specific topics on a broader perspective. So which question would be the next one? Yeah, people are talking about democratization of knowledge or skills through GenAI. How can a good founding team still set itself apart? What is your perspective here?

Expert 8

Yeah, that's a really good question. So in terms of democratization of knowledge, I think one general aspect when talking about geni to keep in mind is how is actually the response generated

and what are we seeing as an output, is it reliable, can we trust it and so on? Or might there be certain biases or incorrect information contained in that? And I think this is the big point that we should always be aware of and that actually in my opinion should be taught in school that you can't rely 100% of what JGPT is saying, for example, because it basically only proposes the next word that has the highest likelihood to follow in a certain embedding space. So you're not sure if it's really 100% correct, but I would say it generally helps you just get a first understanding of certain topics.

And I think this is the big part of when it comes to democraticization of knowledge that is like you first have an access point, a low barrier to entry, you don't need to ask Wikipedia, but you can already basically interact with a knowledge platform directly. And I think that already helps. And what it should trigger is that okay, you have access to the information but you always know, okay, maybe you should fact check it afterwards, but you already have a starting point, you already have some back and forth with the AI model on your ideas or assumptions or particular questions. And I think that's already super helpful.

When we take this into consideration and look into the broader space of AI venture building or startup ecosystems, I think where founders particularly benefit from the democratization of AI is really like getting a first insight into particular space, checking their assumptions, generating new ideas, and basically also finding potential sources. So what I did when I was playing around with Chat GPT, I used Chat GPT and bart. And what I liked about Bart is that the sources that it proposed seemed to be a bit more relevant to what I was looking for, whereas Chat GPT was way more creative. So I used GPT Four. So the premium version a couple of months ago, it was the May 23 version and I probably got better over time, but back then it was already super cool to just structure my arguments.

So I had a pretty long prompt about, okay, you're an expert in this, you need to help me on that. I want you to achieve this together with me. Now these are the particular steps that I'm super

interested in. How should we proceed now? What are your next steps? And then we basically run through each and every step. And what it helped me being then at the time, the solo entrepreneur being interested is like the sparing partner that usually you have in your co founder, right? And it's just the machine helping you basically poking holes into your assumptions and ideas. That is when it comes to the early stage of ideation.

And so on the second step, when you have figured out a particular idea, it's helping you then really like challenging it or retrieving relevant information that can help you if you're a more scientific founder, which assumptions, which line of reasoning is super relevant. However, also there you need to take in mind that, for example, anything that Openi proposed is up until December, I think 2021, so more recent information is not contained. And this is something that we all should keep in mind, especially if you're working on a cutting edge idea or space in general. And that is also something that I consider super relevant is, okay, if you want to use LLMs or like Gen AI in general, what is the space that you're looking at?

Because if you're a business student, it's highly unlikely that you will ideate and build the next super semiconductor. Just not going to happen. And this means that the type of requests and the way you can use Gen AI being like an LLM is totally different than someone who's a bioinformatician and who wants to create a novel molecule, but both are like Gen AI. So we have this one company that we helped build the MVP for, it's called Cambrium. They just closed an 8 million seed round a couple of days ago. And what they do is basically build new molecules out of previous databases that they have and we stacking them together and they use, like everyone does, a combination of different generative models that help them infer how a certain protein will fold, how certain characteristics a protein will have.

And that's also part of gen AI, right? It's not something that we always think about when we have stable diffusion or churchypt in mind, but this is also super cool. It's also text based, basically and also generating output with an AI based model. And when we look at these more

technical founders rather than the business founders who can run through the processes that I've described earlier, very general understanding, maybe in ecommerce B two C, B two B offer service or rather simple product. If you are a more technical founder, I think you can also use LLMs to a certain degree. You can also use Mid Journey, so LVMS for generating logo, for helping you building your website and so on. But it's rather like the general business processes and the business operations that it could help you with.

But when it comes to the sole product, you need either sophisticated geni tools like alpha fold, like melting or something like that. I'm not super sure about the second one, but there are a couple of them out there. You really need dedicated and sophisticated tools to help you. And this is something where you really need to be off the space and have a certain expertise in an area, otherwise you wouldn't know the tools, otherwise you wouldn't come up with a new idea. And then Genai is also less relevant to you because then it's an accelerating factor, but it's not the sole mechanism that you should and you can rely on to build a company, I think, when it's a more technical space.

Interviewer

Okay, yeah, perfect. Really good insights. So thank you a lot for that. Coming now to the part two to deep dive into the main parts, starting here again with ideation, I'm going to give you a short introduction to maybe touch upon some things that you could also mention. So every startup starts off with Ideating and creating a business idea through brainstorming, market research and other processes. Things to consider here are experience in the market, good market information, a good problem and solution fit just to make examples to provide some thoughts. So let's get now started with specific questions in that topic. So first one is going to be to what extent and where do you see the influence of GenAI on Ideation or idea generation for new businesses as a startup and can you provide some examples?

I think you don't have touch upon the general topic that we already talked about Ideation, but answering in specific this question. So to what extent and maybe specific examples?

Expert 8

Yeah, I think it depends at which stage a founder or soon to be founder is if they already have a certain idea in mind, they can use more dedicated or sophisticated prompts directly targeted. Okay, I have this idea now I want to challenge it now. I want more additional resources now I want to see what happened in the past, what worked well, what didn't, and also maybe then devise from the idea already business plan, what are my target customers and so on to really take it if you're here's the idea generation process, here's the conceptualization, the business plan process. You can be right at the middle. And if I understand your question correctly, we already talked about the earlier part when it's about okay ideating and coming up with a general idea. I think it's super helpful.

However, what I also realized is that you need to know a bit about a space because otherwise you'll just get very superficial responses from the gen AI model that don't help you really, because you could get the same if you just read through the internet. But in order to really build a bulletproof and novel concept, you need to understand what you're looking at. It's called mini PhD. You really need to know the space. And I think that's what the geni tool can help you. It's not about general ideation and finding a cool edge because everyone probably prompted the same, but rather helping you get into more detail on a particular idea and challenging it.

And this is what I also saw that is, okay, you have first idea, you can come up with different potential solutions to a problem and then you can use the geni tool to really get down on the details, maybe already referencing potential sources, referencing historic cases where something happened, what they didn't do. But then also the next step, then if you have an idea, you have challenged it, really write a business plan and then extend it. Challenge the

assumptions that you provide to the model and that you get back. And I think this is a cool step that can speed up the process tremendously because if you're working on a couple of ideas at the same time, you want to scale, right? So how can you scale the ideation process?
The business plan process, the conceptualization process is basically using such tools as a first input and then you should always basically fact check them and make sure that they are going in the right direction. Maybe you have some additional ideas, maybe you consider some responses to be too generic and then you could drill down on those.

Interviewer

Okay, following up to that. So how do you see the impact? Just a short question here, the impact on the ideation process for startups concerning time, cost and quality. So these three dimensions, what is your thought?

Expert 8

I think in terms of time, it's a big lever. Do you need like a quantification in terms of percent or something like that.

Interviewer

Not a quantification, but qualitative.

Expert 8

Okay, yeah, I think biggest lever is time, to be quite honest, when it comes to the resource question. Do you mean like monetary resources or what type of resources did you refer to? Yeah, I think actually that the cost of having GPT Four or any other sophisticated LLM model is actually negligible. So it's, I don't know, $25. That makes it €21. That's negligible for what

you get out of it. I think the interesting part is then how can it help you speed up the process? And then when you do like the resource calculation, it would rather be linked to time. So if one founder would have needed two months to really have a cool idea and work around it, now he does it in one month, then it's basically a cost fraction of 50% in his opportunity cost.

So in terms of the actual model costs that you need to run, I think that's negligible. I think everyone should do it. Nevertheless, for the sole purpose of really challenging your ideas, even if you have a good sparing partner, I think it's always cool to just get additional inputs because I've never run a prompt that was extensive and got anything back that I was like, I already thought of everything. Even if it's like one bullet point that you say, okay, that makes sense, I think it's already helpful. And this then relates back to the third part, is quality. I think in terms of general responses that you get, it's helpful, especially if you're looking in a space or you're requesting something where you're not really good at.

For example, you look at a new space, energy or a defense whatsoever, you don't know much about it's super helpful. Get a first insight. You can, I would say, highly rely on the information to a certain degree if it's not super relevant about certain dates or names or anything. And then when it comes to more qualitative responses, so where you already know the space and you want to get a bit deeper, it's always about how good is your prompt? And then you basically need to understand, is the response that I'm getting really helpful and can I rely on it or isn't it? Because usually that's my experience with spaces that I know a bit about. The responses that I got were somewhat generic and straightforward. It didn't really help me get into more detail.

Where it helped me then was, okay, if I propose a certain assumption or a certain understanding and ask the geni model to really challenge my assumptions and maybe extend them, look at different fields, combine them and so on, that was super helpful then. But in general, the quality, I think, is for the sole responses is medium, but in combination with the reduced time, the founder can then spend the time that he or she saves on really validating what you get back as

a response. And I think that in terms then if you combine human and machine, the quality is way better.

Interviewer

Okay, perfect. So then concerning the ideation topic three, a little bit shorter follow up questions in three specific topics. So the first question will be a sort of comparative analysis. Do you notice differences in ideation with versus without geni? So can Genai minimize typical errors maybe or problems in the idea generation process?

Expert 8

It's interesting because then you can open up the space. How does ideation and knowledge forming actually work? It's a bit of a philosophical question. I think it helps in terms of getting first directions where you can look at and this is from a personal experience, it helped just to have an understanding of what you want to do. So basically, what do you want to achieve, what should be the outcome, what do you want to build in terms of that? And then you have a certain idea in mind, a certain direction. And now you asked the geni model to really basically spread into different lanes. What could be an interesting area, what could be an interesting use case and so on.

And then have, let's say four or five use cases or problem sets that you can then deep dive on with new prompts follow up sequences with the model. And I think that is helpful in terms of how much has it changed. I feel like the biggest lever is really time and an enablement of a sole person because you now have access to basically all the knowledge out there up until 2021. And previously you needed people who can challenge your ideas, who you basically need to be responsive so they maybe have different priorities, they're not available and if you can basically ask them or like the model to okay challenge it, you have answer right away. Which means the

selection of ideas and the planning and conceptualization is super smooth and sped up. However, you always need still some human in the loop.

And I think it's just a big lever in terms of speed and enablement of individuals because they can then also look into or like if we look at not only ideation. But then really business forming, they can lever their own time because they can speed up the website creation process, the outreach campaigns, the logo creation and save. Also a big dollar on these usual expenses that you need to pay agencies for. You need to know or you basically need to educate yourself on. Yeah, but that's basically at the later stage, not ideation in general.

Interviewer

Okay, last question for ideation. Now it's human creativity versus geni creativity. Do you think geni I think you already said it can augment, but can it also replace human creativity in generating business ideas maybe also in the future?

Expert 8

Yeah, I think when we talk about creativity there are different areas where it can yeah, I wouldn't say overtake, but be a very cool tool for individualization, but that's not related to business, right? So we can talk about this at another time. But when we think about business, I think it's always a good complement. So it helps improving the quality of the human and the time a human needs to invest. And the natural intelligence is, I would say, very amazing in terms of what and how it works and what new ideas come out of it. However, there always needs to be the right time, right influences that you basically see. And then your mind can combine and recombine and then output new ideas with.

And when it comes to the machines, so the gen AI tools that we currently see, they're also trained on historic data. So they only know the combinations in the past, data that has already

been created in a certain way, different modalities, video, podcast, music or text. And then based on that, it can generate new ideas and new understanding and connections. And I think this is the interesting part because if we assume that a human knows a lot, if they read a lot, if they are, let's say, generally interested and educated in a certain area, they never will have access to everything. And where the machine intelligence, the artificial intelligence can help, is detecting patterns that humans can't understand. And the interesting part is that you can understand patterns not only in video, not only in text, but now.

And this will be something that we see more and more in the future. A multimodality. So basically a model that can understand from videos and combine this knowledge with texts and then generate or help the human basically augment their knowledge and their understanding. And I think the cool part is that you can use it like knowledge Agent. So let's assume you eventually have everything that humanity ever produced inside these models, these multimodal models. You can basically search through and skim through and retrieve the relevant information that you are looking at or you're looking for and then you can use that to come up with your own ideas and new combinations and so on.

And I think the interesting part is it speeds up the first information retrieval and the information combination, but it always will need a human to really make sense of it all and also think about, okay, where do we see trends now? Where do we see changes in way people live, way people consume content, way people, I don't know, have their food delivered. And I think it's a cool augmentation of human understanding. But now based on all the knowledge that the humanity has created, I think that's pretty yeah, that's pretty cool actually.

Interviewer

Okay, perfect. So then we're going to wrap up our focus point, like the ideation part. Now we're

going to deep dive a little bit into UI and UX design and prototyping. Little bit less questions here, but let's try to also dig some insights out. Here. So yeah, also a little context here. After having a product idea refined and a business model thought through, the project must be designed and first prototypes for user testing need to be created, often without much functionality. So let's dive deeper into the impact of narrative AI in this venture building capability. So what specific changes in the UI or UX design of startups have you observed due to the implementation of GenAI, anything you could think about?

Expert 8

I think we should distinguish between the stage a startup is in, right? So if you already have an idea in mind, you just need a website for example, or you need to improve the front end look. So your X design of your tool, like the software application, obviously that you're building, I think then AI can really help you because there are now more and more tools out there who help you basically build a code that can be run as a website from your prompt. So non technical people can then think about, okay, what would I like a website to look like? They can write a sophisticated prompt, they can explain the UX, the buttons, how they link together and then just basically have it published automatically and have an AI in the background generate the code. That can then be pushed as an HTML repository and be published on the web. And I think that's pretty cool. There will, however, always be the need of UX design what sort or so ever. Because the big lever that I see with geni in that field is you can basically prototype your ideas faster. You can try out different things because if you look at how people currently design things in Figma, you build your own box, then you duplicate it and you change the text. That's cumbersome, that takes pretty long. And if you can just directly enter with a prompt what you want to change and how you can create duplicate versions of it with different user journeys. I

think this speeds up the process to value to delivery basically, or speed to delivery, time to delivery, whatever you want to call it tremendously.

And I think, I don't know, two tools or three tools, top of my mind that are cool for that, but I'm sure that there are some out there, or at least there will be in the near future. So that is when you already have a cool prototype in mind. You want to build it up, you want to try different designs, different user journeys, you can just prompt it. In contrast to that, there are also sometimes startups that are found with the idea, okay, I actually just want to build a website and generate clicks and see if I can validate my ideas.

For example, an e commerce shop you saw on TikTok, a nice video of, I don't know, a new toothbrush that can be used with lighting and be connected to whatever music box you want to see if there is a demand actually in a particular country. And then you basically need to build up a website real quick, like a dummy website where people can click through, they could purchase the item and then you can validate your assumption that there is actually a business case underneath it. So what you could do is now you try out different websites, different website designs, different products, and you could use Geni to create these websites for you. And by that really the time to creating this website.

And also the cost, neglecting what the Geni tool might cost is tremendously shortened and can help you then basically focus which particular item or which product group or which target segment you want to address. But that's at an earlier stage and rather I would say like ecommerce, business student and product rather than, okay, you already have a cool idea, you already know everything. It's just about getting out there and creating a nice website with different UX designs.

Interviewer

Okay, all right, yeah, some pretty good insights. Last question here for UI and UX design, are there specific UI or UX issues that were effectively addressed by GenAI. Maybe? Also.

Expert 8

What I haven't touched upon is how you could use Gen AI integrated into the UX, right? So that you basically have a chatbot on a website that helps you interact with information on the website or with customer support or something like that. And if you want to address that angle of the question, I think what Geni could do here is first of all, if you use it in customer support, it smooths up the process tremendously for both ends. So for the user, the potential customer or the customer has an issue whatsoever. But at the same time, it also relieves the people in the service staff of their duties, because most of the requests that they usually receive is, yeah, someone hasn't checked the archibase or someone didn't know about the delivery requirements or the costs or something like that. So pretty standard questions.

And the idea is if you use Geni in the form of a chatbot for customer relationship management or customer service, the client gets the response faster and probably in a better way because it could be standardized. And at the same time, following the Pareto principle, like the most difficult questions get forward directly to the humans at the back end and they can then work with the client on resolving the issue. So, win. There are other options and I think this is something that will be very dominant in the near future is that you have tools that are pretty cool, that are like if you think of Microsoft 365 Office products, they're pretty neat, they work very well, you have a whole ecosystem. And what Microsoft is now adding on top is like a copilot.

So a Gen AI layer that helps you interact with the different tools or the different apps and the data underneath it that you have on SharePoint or OneDrive and then combine it and create content with it. And I think this is something that we'll not only see at Microsoft but in many

different businesses. And then products that are digital solutions with a front end that you'll have an additional conversational layer where people can just instead of clicking and interacting with the website through clicking on buttons and reading what pops up, then to really directly go to the conversation layer like the chatbot and retrieve the information they're looking for and interact with it.

And I think this is something that every tool or every software system in the future needs to provide that you can as a user directly just type in your question and either be forwarded to the respective UI where you can see the information like a dashboard or you directly receive the response to your request.

Interviewer

Okay, perfect. So then let's go to the third topic of four software engineering. Here also a short intro. So, software engineering is an integral part of many new ventures and a capability that can shape the main product of a startup in the digital era. So GenAI is said to have coding capabilities but we will have to investigate to what extent they are capable to change the founding process of new venture. So first question here would be what areas in the process of engineering so code engineering were most impacted through GenAI and what is the impact of these resources needed in the early stage of a foundings a startup?

Expert 8

So let's assume you build a software product, so not like a physical product, then it really helps you a lot because just writing the first lines of code, building the first repositories, that's actually pretty boilerplate. So usually if you're a larger corporation, you have templates for it, you can spin up the resources that you need for a specific job more or less automatically. But if you're a sole entrepreneur or just someone who gets into coding and is not very sophisticated, using

Geni for setting up the general first code base and the connections between the different services and so on is super helpful. However, it's just the first code base so there will always need to be some manual adjustments to make it really well functioning.

And also that's something that the general issue in engineering or software engineering that after a certain time your code gets really blurred and it's not very sanitized. So huge step is actually then sanitizing code. And I think this is something where Jen, I could help just spotting dead ends where basically there has been a certain functionality that's still in the code base but a new release that some of your coworkers did and is actually now super cool, which makes this code base or part of the code base redundant. And having Gen AI tool spotting where there are dead ends, something that you don't need anymore, helps you find those faster and helps you keep a cleaner code base, which is generally helpful. It also can help you in writing software tests.

So something that is super relevant before publishing, generally before releasing a new version, is that you run tests. So is the system well integrated? Does the code base function as intended? Are there any bugs or any issues that might arise? And the more tests you have, the more comprehensive you can run and basically challenge your system. And that always, up until now, has been a very manual process, writing these tests so you can standardize them, but the more tests, the merrier. And there are tools out there that help you write dedicated tests to really look at all the different aspects of your code space and of your system to make sure before the new release to detect all the bugs. I think that's pretty cool.

And then also something that I mentioned at the very early of our conversation was that you just can generate very standard codes with Gen AI. For example, GitHub Copilot, and that already gives you performance boost 1020 percent, which is decisive, I would say.

Interviewer

Okay, so wrapping up with the last question in this domain here, through Gen AI does a product oriented startup. You can also base your assumption on digital product. Again, startup still need an engineer in the early team, and if yes, why or why not?

Expert 8

Yeah, in my opinion, every team in the future will need an engineer, software engineer, for the sole reason that everything that we'll do in the future will be connected somewhat to the Internet, somewhat to data and data handling. And while there are pretty cool automation tools out there, databricks and so on, you will always need someone who can oversee the pipelines and understand, okay, if something's not working smoothly, what could be potential reasons? Well, AI can already help you that. So I'm not an engineer, but when I do pretty complicated Google Sheets formulas, I always have them written with Gen AI. Or if there is a bug, I'll ask Jtpt what's the issue? Or if I want any macro in Excel to be, I don't know, output the text in red instead of green. That's pretty helpful.

And you can help yourself to a certain degree, but under the assumption that there will be just a necessity to connect everything with each other on a software layer, you will need an understanding of the technical side of things and Geni can help you with that. It can reduce the barrier to entry to really build your own software based product. But if it should be a stellar and outstanding product, or just something where you have specific functionality that currently there isn't any code for because it hasn't done before, you can't rely on Gen AI to come up with it. So there will always be the need to at least some basic coding understanding or systems engineering understanding.

Interviewer

Interesting perspective. Yeah, perfect. So then let's come to the last deep dive of the topic and

then close it by concluding with a broad perspective question. So, customer acquisition, now it's going to be focused mainly on sales. So once a finished product exists, one of the main challenges for a startup is to sell the product. This can done via sales efforts, prime use cases for Genai as it evolves as a lot about writing text or generating content. So let's take a deeper look into that area. So also two questions here. Based on your experience in which sales activities can Genai be applied, can you provide some specific examples? Maybe if you have some yeah.

Expert 8

So there's the distinction between what type of product are you selling in my opinion? Are you selling super expensive, very extensive service or product whatsoever, where it's really about the personal relations to the client or to the account. That's usually the case if the product that you're selling is something that is either purchased in so large quantities that losing a particular account or gaining a particular account is an important factor driving top line changes. So revenue or if you have a dedicated product that is only purchased every couple of years, so not repeatedly, I think then you always need to focus on being very bespoke in the interaction with the client.

And I think to that extent, geni can help when it comes to writing bespoke emails coming up with particular reminders that, okay, in the previous conversation or in a conversation that the same account, the same company had with one of your colleagues, they mentioned this and that they now also want to purchase, like they're interested in also the different machine. But your colleague is not the expert on that. But during the conversation the client only hinted on that briefly and the other colleague would have missed out on that and then he can use geni to really okay, first of all record the meeting and then also come up with suggestions. Okay, there's some

cross selling or upselling opportunities guys, you should look at that. That is something that it basically helps you prepare the outreach or the conversation with a client.

But the conversation should always be at least checked by a human and then also be conducted by a human. In contrast to that, you also have products where it's only about quantity. You want to reach as many people as possible. You can automate the process more or less because you have a standardized profile, you have a standardized playbook on how you interact with clients, how you qualify them, what type of questions they might ask, what your response to that is. So you can basically abstract it from the very individual interaction to a more standardized way. And what we see here is that AI can help you in doing that. So there are tools exceed AI for example, where you write your playbook, you say, okay, I launched a campaign to sell, I don't know, football tickets.

We have 50% of them are recurring clients, so they just purchase every year. But the other 50% we need to do sales activities every year. And then you can standardize them and say, okay, basically we have 30,000 tickets. You don't need an individual outreach to each and every person, but rather you need to qualify the process because that is basically what the sellers are doing every now and then. And this drives costs. Right? So how do you improve? First of all, top line growth is, okay, contact as many people as possible. How do you do that? Well, you can scale your sales force, but you don't want to do that because that basically increases costs. And you want to have a huge top line, but you also want a huge bottom line after the costs. Okay, how do you do it?

You automate it and you basically qualify the client that you're interacting with tools that help you understand, okay, what is the client actually asking for? Okay, we have a particular bucket. So now this response is to follow up the response, or if there are any questions that we don't have in the system that we haven't entered into the playbook, forward them either to the website or to the human seller to get a response. And I think this is where in a sales process or an

acquisition process, it can help a lot when it comes to sales. Right? Acquisition usually also entails marketing purposes. And what Geni can do here is help you write newsletter content, help you be more active on various social media channels and just create content.

From my personal experience, because you also asked for that, you usually see if there's a newsletter or a post written by Genai or particular Jet GPT based on the way that the phrasing of words, certain keywords that are used that you always see in certain outputs and you spotted and already you discarded. So that's not good. You always want to see, okay, there's actually some you don't know if a human wrote it or a Geni tool wrote it. And I think in terms of marketing, this is something where Geni can help you create a first draft or improve your English, but you should always be very does it still sound like a human? Is it still the tone that I want to write in or has it sort of diverted from that?

And I think you can solve this issue with good prompting and basically just reading through it once again before you click publish. And for a personal example from the individual outreach approach and the standardized approach, I think what I do is use JGPT for drafting particularly long emails that are a bit more complex, that require different reasoning, that usually take me a couple of minutes to write and then write again and rewrite it and so on. I use Jet GPT for the first draft and then only make some minor changes. And I think that's super helpful. When it comes to the bespoke part.

When it comes to standardization of campaigns, I think there it's really helpful to first of all just understand what the respondent actually wrote and then select the right either classification or then already direct them to the required buckets of terms of response or seller.

Interviewer

Okay, all right, yeah, perfect. Then I would say let's conclude with a broader perspective. Also here two short questions. So first one, are there other areas we haven't touched upon where

Genai could have an impact, especially in the startup sector, or do you think we covered most interesting ones?

Expert 8

I think an interesting part could be from the VC perspective. So now we've only discussed from the founder perspective, how can it help the founders to be more effective and efficient. And I think interesting part is also these. So there's the guy from Andre, Retarat is his name, he's working at Early Bird. He has a newsletter called Data Driven VC where they already try to optimize as much as possible, look at the data for selecting the high potential unicorn prospects and so on. I think this could be an interesting angle to also have that in mind. The same is true for corporate venture builders.

So helping them figure out which areas could be interesting without having a dedicated founder perspective in mind already, or different or having a founder persona in mind already, but rather, okay, how can we do like the pool of entrepreneurs, how can we now build cool ideas? I think that's super relevant. I think the interesting part in the long term will be do you have a bundling of GenAI. So you have one interface that you interact with solving all your problems, or do you have a debundling of different services into dedicated areas? So there's this picture that I really liked is from Craigslist. And Craigslist was early in the days was like this go to platform where you could buy a car, you could also date and you could also order food.

And then from Craigslist it split into 20, 30, 40 different individual use cases with a bunch of companies serving these particular needs. And I think what we see with JGPT now is, okay, it's this central go to where everyone enters information and the question is, will there be more like JGPT? Like so like one size fits all solutions that people just interact with? Or will there also be a debundling into different use cases that are solved with gen AI? And I think this will be the interesting part that might play out in the near future we see, to my understanding currently,

the latter. So you have a debundling, you have dedicated solutions for specific problems, for specific user groups. And I think this is while there is still chat GPT or an LLM.

In the back end, it's still about the user journey and the problem that you solve and how you solve it that is relevant. And I think this might continue and then in the whole sphere, then it would be interesting to where do you have your competitive mode? So what's your distinguishing factor as a founder? If you use gen AI compared to a different founder who's also using gen AI, and you have the same target segment of users, you have maybe the same problem that you want to address, what's your competitive mode, how you go about this? So the enabling factors for having really a stellar geni product, I think this could be also super interesting.

Interviewer

Okay, yeah, really interesting. So, concluding with the last question of our talk, so fast forward 50 years. How would you think that historians will describe the influence of GenAI on the early 21st century startups? What is your thought about that?

Expert 8

What we will see, I think, is general an additional boost to the number of startups that will be found or will be formed just because the barrier to entry is lower. Question is, can you distinguish the factor of gen AI on that from all the other factors, like cloud computing, like general increasing unemployment rates, so people need to figure out ways to earn money, I don't know, 50 years from now, that might be difficult to see. For now, I think it will be a boost, and it is a boost to general founder productivity. And what we'll also see is that there will be more and more small startups. So everyone, when they want to form a startup, they usually think in Unicorn or Declan startups or whatsoever.

But I think now, with Jet GPT or general LLMs, it's super easy to build a very small solution that can help you and the problem that you want to solve. And you might not want to form a whole company around it, but rather you have a problem, you want to solve it, and then you realize, okay, other people have a similar problem. I just, I don't know, have some dedicated people working on it, 1020 guys to make sure that everything runs smoothly, but I don't want to make a huge company out of it. So I think that there will be more startups formed, but the distinguishing factors from the one that really scales and gets super competitive and dominating to the ones that aren't is power law.

And that all comes down to the competitive mode and the motivation and the drive of the founder. Do they really want to do that or they just want to build something that solves the problem and then just publish the Git repository on GitHub and make it free for everyone to use? Okay.

Interviewer

Yeah, really interesting. So, yeah, I think we finished. So let's wrap it up with a self assessment. I'm going to share my screen that you can have a look at it. So this would be the self assessment. Where would you see yourself? I hope you can see it.

Expert 8

Expert.

Name	**Expert 9 (E9)**
Categorization	Expert

Description	Expert 9 is a Machine Learning Expert who develops his own AI algorithms. He has won over 20 hackathons and is a two-time founder, with one of his startups being awarded the most promising startup of Portugal in 2022. Currently, he is the CEO of Assetfloow, a behavioral AI startup, and regularly delivers speeches at keynotes.

Interviewer

Okay, perfect. Awesome. Okay. Then we have the startup club stuff and to maybe get you to the point where we have to be, I'm writing my master's thesis at the moment. I think it's perfect that I also write about AI and it's really interesting. The topic, our main topic is GenAI. As you also create AI algorithms, I think you're pretty aware of the technical foundations and. Yeah, that's why I chose you as an expert. And important about the interview is that you really can choose what to talk about. So the stuff that you are really an expert in and also experienced some stuff, that's the focus you can talk about. So if there is something that you don't feel to talk about, or if you're comfortable with, then you can easily say it.

Basically what we do is we research and analyze GenAI and its capabilities as well as common success factors and pitfalls for startups. And basically now we analyzed the scientific stuff and yet now we are talking and interviewing experts in the field. So the specific areas we are looking at, it's ideation, product development, so MVP, then coding, software engineering and customer acquisition. Basically we would start with part one as some general questions, then we dive deeper into the parts that I just mentioned, and then we go and close the interview with some broad questions again. So that would be the structure. And yeah, I would directly start into ideation. So as you kind of give you a short introduction, like every startup starts off with ideating, creating a business idea through brainstorming, market research or problem solving.

Things to consider here are for experience in the market, good market information and a good problem solution fit, and also the idea validation, basically just to give you some thoughts. So then I would start to the first question. First question is to what extent do you see the influence of GenAI on ideation as a startup? And also can you provide specific examples that you have in mind?

Expert 9

Yeah, I use it to explore new ideas, but not in a way that to actually give me ideas, because these kind of tools shard CPT and so they are trained on what already exists, right? So they are not developed to build something new based on what exists. So I use it just to get an understanding about the market. What is the average? They can't even get me the state of art. They are not designed for that because that will require that they specialize in some topic which does not exist yet. So just to get a very general understanding of what's going on, for example, I want to enter the market of food waste. I first use strategy to understand what is the size of the market, what's the average, precision, accuracy, what our retailers are managing that. So it's just to have an overview.

I tried to actually give me ideas to build the code, but it's not possible, they were not designed for that.

Interviewer

That's really interesting. So you basically base your thoughts on the technical foundation, right. That's really interesting, as you are experienced in AI. So you see sort of limitation there, right? So it can be creative. There's just the assumption that it is creative, right?

Expert 9

Exactly. For code, for example, I use it a lot for code, but it is for optimization of what I already have. Of course, they have, these GPTs have all the knowledge of Python coding. They know how to replace ten lines of codes by just one line of code. But that's nothing new. They are just leveraging something that is common knowledge.

Interviewer

So do you see less potential in generating ideas, but more in validating ideas?

Expert 9

Correct, at least what exists today? I cannot imagine how they will generate new ideas, because that's in terms of biology, that's something that humans cannot even understand, how we generate ideas in our brain. So doing that way for models, the way these models are built, they basically have an input and an output in which the ones that are trained, these models, they are optimizing to get these outputs. So it's always optimized for something that already exists, nothing new.

Interviewer

Okay. And do you think such general models that exist now, like chat GBT, they are basically trying to get a specific goal? Could there be any systems also GenAI, that could specifically generate new ideas and focus on new business ideas, for example? Or do you think that's not possible, or maybe far ahead from what's possible now, technologically?

Expert 9

I see that as impossible. Like, for example, the way this language model works is as simple as In a very simple terms, you have a sentence or you have a word, and what is the probability to

say other words or to generate another sentence? So based on that, what it's basically saying is what is the most used word or the most used sentence in the web that is most probable to generate this. So basically, it's always considering what was the most used sentence or most used word. An innovation or something new is exactly the opposite. What is something that no one ever said that I can say now? So it is the actual opposite of what we're designed to.

Interviewer

Interesting perspective. So basically then you could make the distinction between general business ideas that already exist, but could be something new, a new combination or stuff like that. And then the other part is out of the box, new business models and that GenAI is not capable of, then basically, right.

Expert 9

You could distinguish. Yeah, it can influence you, but you cannot ask directly for something new. I don't believe that possible.

Interviewer

Okay, perfect. Then following up, the next question is sort of a comparative analysis. As a founder yourself, do you notice differences in ideation? With or without GenAI. Could Genai potentially minimize typical errors, for example, in idea generation, or problem solution, or idea validation?

Expert 9

Yeah, definitely. I use it every day in my code. I do not need to waste time in simple things to get to the end code. For example, a very simple example, I want to build a code to forecast

sales, and I have to go through all the process of separating the data for training, for testing, cleaning up. I can just ask them to do in less than 1 minute, I have all the code for these simple things that probably me waste a little bit of time, sometimes with errors. So in terms of productivity, it's amazing. And of course I can do things way faster, trying new things, trying new codes.

Interviewer

Awesome. Okay, then about industry specific knowledge. You already talked about it a little bit, but now the specific question is industry specific knowledge with the search and processing power of information by GenAI still essential for developing good business ideas? Can you repeat the question?

Expert 9

I didn't, sorry.

Interviewer

If industry specific knowledge is still necessary or essential for developing good business ideas and a problem solution fit when you want to create a product.

Expert 9

Well, I think the beauty of this is exactly not being an expert and you can get information about a topic that you do not know. If you are an expert, you will know more than ShA GPT in a particular topic. So it works better if you are not an expert.

Interviewer

Okay. Yeah, perfect. And then the last question about ideation. Then we're going to jump to UI and UX design and prototyping. So last question, human creativity versus GenAI. Do you think GenAI can augment or even replace human creativity in generating business ideas?

Expert 9

Yeah, it's a topic that we discuss. I don't believe it's not possible to generate new ideas.

Interviewer

So you also think, like in the future, right?

Expert 9

Yeah, I'm trying to imagine how it will be possible to train something like that, but it is paradoxically impossible because the way innovation works is like an outlier. And mathematically you cannot train something to get an outlier. All mathematical models, they avoid the outliers to learn something, otherwise they are not learning from the data. They are doing exact opposite. Right.

Interviewer

That's really interesting because you are the tech expert. And basically that's what I wanted to know from the business side. I already talked to many people, but not from the technical side. And you now brought that up. So really interesting here. Okay, then I would wrap it up and go to UI and UX design and prototyping. So basically also here a short introduction. Like after having a product idea already refined and the business model thought through, the product must be designed and first prototypes for user testing need to be created. And that's what we talk

about now. So when it comes to specific changes in the UI or UX design of a product in startups, what have you observed by GenAI when it came up in that topic?

Expert 9

Well, in terms of best practice, to, for example, having a website with the best practices in UX, in UI, it's definitely a good place to try something. I believe they get great response. We already use that as well. It is also interesting, the ones that allow us to create new images. Although we are in the very beginning we tried to generate something very specific for our website and it was quite a mess. So it is not ready yet. But for example, I saw some companies that, what's the name of that company? It's not wix. There's one that is local, not drag and drop, those ones that allows you to build websites. I believe there is one that allows you to just write what you want and they will build the website for you. So it's reaching that level, which is very interesting.

Interviewer

Yeah, that's for sure. Do you see any specific UI or UX issues that were effectively addressed now by GenAI. Well.

Expert 9

Is the capability, when of course, if it is well built, is the capability to build for every kind of device.

Interviewer

Right.

Expert 9

So you do not need to build just for the web, you build automatically and you're just talking with the computer saying, oh, but I want this in other color, I want this with something different, with different text or something. It generates very fast, something that might take sometimes one day and with a lot of bugs that will appear in this case. It's so much fast and so much intuitive, everyone can do it. You do not need to know how to code to do it. So it breaks a lot of barriers this way.

Interviewer

Yeah, makes sense from the cost efficiency perspective. How has GenAI impacted the MVP development process for a startup?

Expert 9

Yeah, for sure. In terms of, if you're talking about just building a website to show the product and see the reaction. Perfect. It works if we're talking about something at large scale, if we need to build the architecture in a cloud environment. So actually build a platform that is scalable, it is not ready yet. It is perfectly possible in the future, but they are not ready yet for something as complex as that.

Interviewer

Okay, yeah, perfect. Then I would wrap up this part also and go to software engineering. Maybe the best part you can chime in. So software engineering is also an integral part of many new ventures and a capability that can shape the main product of a startup in the digital era. And that's why we're now going to talk about that. So first question here, what areas in the process of software engineering were the most impacted through GenAI and what is the impact on the resources needed as a startup now compared to before.

Expert 9

The impact? It's definitely the productivity in terms of replacing the workers. Not yet. We are a completely software company. So in front end, back end Devop, like in an artificial intelligence? Well, trying to think. Yeah, in my particular case, it's really just about productivity, because we are not just building a prototype, we really need to care about security. But if we wanted to reduce costs, very probably we can replace the front end completely, because I've seen that they can build websites very well, and, yeah, that's the only thing that I would replace if I really want to optimize for something.

Interviewer

Okay, perfect then. Have you noticed any standout improvements in startup engineering tasks due to GenAI. Maybe also covering what you already said?

Expert 9

Yeah, definitely. Because our team, we have some seniors, but we also have juniors. And the Knowledge that they have, since we don't have like five people in the same area, we need to trust sometimes a junior engineer and using things with chat GPT that allow us to optimize things give us more confident that what they are building, it's correct. And if not, they can use it to optimize. So they can definitely help a junior engineer become a little bit not senior, but with more autonomy.

Interviewer

Okay. All right then, next question. Through GenAI, does a product oriented startup still need

an engineer in the early team? If yes, why? Or if not, why? Already you asked a little bit about it, but a specific question here.

Expert 9

Yeah. If the company relies on artificial intelligence, and they are. If they have a product that needs artificial intelligence, the way it, without any innovation, just building something with the state of art. Yeah, they can just use shut TPT for it. They help build everything. They even explain what are the steps to train a model, what is the best models for different applications. It is definitely possible for any company to first have chatty petite doing something just for the initial steps, just to understand what exactly they need to hire a person. They cannot replace a person. Yet in these high level jobs in which if it is the core of the product, they cannot replace now, but at least they can help. What exactly is the work that this work will do?

Interviewer

Yeah, perfect. And then do Genai. And no, code tools basically blur the line between design and engineering. Do you see a thing there? Definitely.

Expert 9

The first version of asset flow was actually the website was no code. The back end and the front end was low code. There was some code. So I was able to build with only knowledge in language, Python, the artificial intelligence, which is my expertise, but also the front end and the back end was in a low code, and this was before ChattBT. So some company build something like this and turn it completely in no code. It's perfectly feasible. Sometimes you do not need innovation in technology you just need innovation on the business model. And for those, definitely you can build something that works.

Interviewer

Yeah, very interesting. Okay, and last question here for the software engineering part. What potential shifts might we expect in startup engineering with the advancing capabilities of GenAI. Maybe you have a perspective. There is difficult to say.

Expert 9

We'll definitely reach a point that will put so much trust in these systems.

Will find some riches that we actually need an expert to solve it. Because it's impossible that Chachi PD will have the solution for every single version because they work with average. If you are doing something that is a little bit different than the average, you will need an expert to solve it. So definitely we will see a reduction in junior engineers and more focus on the junior engineers will be replaced by this kind of technology. Probably.

Interviewer

Okay, yeah, that's really a specific answer. Really interesting. And yeah, then we come to the last part, basically Casima acquisition. So also a short introduction once a finished product exists. One of the main challenges for startups is basically selling the product. This can be done via marketing and sales efforts. Now we're going to basically focus on this customer acquisition strategy. So first question here. Best you know, experience in which sales activities can genai be applied and can you name specific examples?

Expert 9

Yeah, I've seen some companies, some examples on LinkedIn. People are using SHA GPT tools to reach a lot of people at the same time. They ask ShaJPD to read, for example, LinkedIn or to

read Facebook or something, just to get something like creeps of empathy on the message to be more personalized. And it seems to work. I also use it for emails. I write the email my way and then I have to make it a little bit better or more formal or something. So it works quite well. But again, will my reach. Everything works very well when there are only a few people doing it. But if you reach a level that everyone is using it, then everything becomes the same. And then we need someone to actually break that pattern.

Expert 9

It's the same like discussing technology, you need someone to be a little bit, to go a little bit far, and the same with sales. It will be probably possible to understand that we are talking with a robot because they might use the same kind of verbs. Then we need to differentiate. That's a normal resolution, right? We build something and then everything becomes the same. Then we need to differentiate and we reach again the same thing. Differentiate ET.

Interviewer

Okay, does GenAI have the capabilities to be applied all on its own in a sales environment, or is it still dependent on a lot of human iterations how would you rate the quality of the product here, for example, if it would be completely independent?

Expert 9

Yeah, I don't know. In this case, I never use it for sales to be completely autonomous. We are entering that area now because now, for example, ShA GPT creates these GPT tools that allows you to build your own models very easily, which means that you will need to build a model with information about your company to prepare for specific answers, not general answers. And

in that case it will be more personalized. But I never try it. It has a lot of potential, but I do not have the answer for that yet.

Interviewer

It's really new. I'm also trying it at the moment compared to a regular sales process. Much time could you save by implementing GenAI. And what are the biggest time saving areas, in your opinion?

Expert 9

Yeah, definitely. The part of personalization, the thing that if I want to send a message to ten people on LinkedIn, I try to personalize a little bit just because it was what was teached me. Try to personalize so people don't feel that you are selling something. It's very difficult and time consuming. So using shadibit, it allows to build that just by looking at something on LinkedIn or something that they can leverage and of course sends thousands at the same time, in the same second. That's overwhelming. That's great.

Interviewer

As we are doing a transcript out of it, you don't have to disclose any information about asset flow too much. But maybe if you have some things here to mention. Do you currently have GenAI tools in place that you use and what are the results based on using them in terms of conversion, for example, or in the sales processes or customer acquisition?

Expert 9

We use it mostly for coding. The workers use it. We sometimes use it for negotiations on emails, like we need to convince a customer of something. We are a little bit hit with the situation and

we probably want to say bad things on email, but it allows us to filter the information, send something that has better arguments to get the customer or to negotiate something. We will use ChattBT in our own products because it's interesting since we are in this new era in which you can just ask the computer to do something instead of clicking the buttons. Of course our platform needs to go in that direction as well. Instead of clicking the buttons, they can just ask and get the answers right away. That's the new future.

Interviewer

Yeah. Okay. Then we would close the deep dive into the question with the last question here. When you think about the sales function in the future, how do you think GenAI will change it.

Expert 9

It's a personalization part. It's just capability of reach anyone with a little bit of personalization so they can pull the person that they are talking with about.

Interviewer

Okay, perfect. Then let's conclude with a broader perspective of questions. Two last questions here. So, considering all the areas we've discussed, are there any other areas we haven't touched upon where GenAI could have an impact?

Expert 9

I think it's a little bit sad, but I think in a personal level it might be interesting. Like sometimes we are just brainstorming about anything. It could be professional if we could just brainstorming with the computer that is learning more or less.

Expert 9

Like, for example, we are alone in a train and we want to talk about the space, and there's no one to talk about that. We just grab that and discuss that and start riding train with things that we like, I don't know, more in a personal assistance in life or in work.

Interviewer

Yeah. Okay, perfect. Then last question. Fast forward 50 years. How would you think historians will describe the influence of GenAI on the early 21st century startups?

Expert 9

Yeah, we. We might go into directions, or we go in a direction in which we do not need to learn.

Expert 9

Technical and very detailed breakdowns of every mathematics and physics, and we can just focus on our creativity, or we go in another direction in which we are becoming incredibly dumb because we can ask a computer to do everything. I'm more on the second one, in which it might be easier for a person to stand out, probably because everyone is. Well, everyone evolves to an average, but easier to stand out if you are more creative or innovative.

Interviewer

Interesting. Yeah, that's really from going from the technical side to a philosophic side, but it's really interesting. Then we wrap it up by a self assessment. So I'm going to share my screen now. I hope you can see it. It's the part four self assessment. Where would you self assess yourself as you are also code engineer? I think these are the ones that we can focus.

Expert 9

In GenAI I am an Expert

Name	**Expert 10 (E10)**
Categorization	Expert
Description	Expert 10 is a lecturer in entrepreneurship and Innovation at Henley Business School. He has 15 years of academic experience in higher education. His research interests explore how digital transformation and digital technologies impact on management, innovation and the decision-making undertaken by boards of directors. Together with his academic career, Expert 10 has 25 years of industry experience working in marketing and sales management positions at multinational corporations in Brazil and the UK. He held management and directorship positions for companies such as Electrolux, Xerox, Toshiba and Laureate International Universities. In these roles he led sales, marketing and trade marketing teams to execute commercial and marketing strategies in B2B, B2C and D2C.

Interviewer

Before we start, once again, our research question. So we are taking a look at how Generative AI is shaping the capabilities of founders to address success and failure factors when founding a startup in the areas of sales. Then we're also taking a look at ideation, software engineering, and at Product UI UX design. So these are our four areas before we start there. Besides sales, have you had any experience in any other of these fields?

Expert 10

Well, I worked in sales during 25 years as a sales representative and then doing 15 years as director of sales. I know a little bit about generative AI as well, and artificial intelligence because I teach and I do research in these fields. And I know about SME because I have my own startup, so it's a perfect fit.

Interviewer

Could you please describe how you understand and use Generative AI, particularly in relation to its function and impact within the startup ecosystem that you work as a startup founder, but also maybe with your prior knowledge as a teacher.

Expert 10

Okay, well, Generative AI helps a startup to accelerate all the process from the idea, the conceptualization, to have a minimum viable product in various senses, not only a product per se or a service, but any type of idea. Actually. For example, I built my own website myself during my spare time, during the weekends, all the content of the website, all the design was done. It was everything done with the support of Generative AI system behind the scenes. If you want to write in content, use generative AI to support you, to improve. English is not my native language. I use Generative AI during all the time to make proof reading and editing of my texts. Yes, it helps in all the aspects of a startup. We are bootstrapping everything. You are working with what you have, and you try to maximize all the resources that you have. And Generative AI, it is like to have an assistant, right? Working with you, doing all the time and improving the quality of your work, improving the speed in which you can produce and you can deliver. Yeah, for me, that's the way generative AI, let's say, in the most broad sense of the

topic of the tool, can help. How it cannot help. Well, it does not replace the human, it does not replace our still our better ability, cognitive ability, right? In the sense of the AI is only a tool. So you need to prompt it. You just quoted prompt engineering. You need to know how to prompt, you need to know how to work, you need to know how it works, you need to know how to ask it to do. And during all the time, you need to double check. Most of the work I do use in generative AI is for supporting me, not replacing me. That's a big difference. I know people that lack the generative AI write all the article or all the content with only one prompt. That's not the way if it is what you are looking for in terms of answer. Exactly.

Interviewer

So you would say that even if you do all the right prompts, and if you have perfect prompt engineering, would you then also say it's still a support or can it then maybe take over certain tasks in the startup context?

Expert 10

Look, I think we are in the beginning, in the early stages of Generative AI. And if you are only relying in the large language models like Bard, ChatGPT, which is the most famous, but we have many others. You have the ones with AWS, you have the ones from Azure, you have many others, right? They are good, but they are not perfect. For example, in my research work, when I prompt to generate TvaI, for example, I copy and paste a table with the name of journals. And I ask Bard, for example, I ask him, I ask the table with the Cubs ranking and H index, well, it's complete, but 8% it's wrong. Okay, so if you rely on the output, you may have a problem, you.

Interviewer

How do you mitigate that? Do you do that by double checking?

Expert 10

Yeah, you need to double check everything. As I'm saying, it can speed up your work. Right at the end of the day, if it's an information that's critical for your business, for your success, and it's an information that we use as a foundation to develop further work, better to check. Otherwise you can have a problem. In Brazil, for example, last month, Anatune, I think, I don't know, the person was too busy or with tight deadlines. And the attune, before going to the judgment, it asked the judge PT three to kind of write his argumentation based on the process. He uploaded the process to shipt and asked the GPT to do a content analysis and then write some. And during his speech in front of the judges, he read the speech, and it was all wrong, and he didn't realize. So this was published in the media, he was very like, his reputation was lost, et cetera. So I wouldn't rely because although these tools, they are very good and they seems to be very good, they are tools and we have the responsibility, we are the ones to blame if something goes wrong. Yeah, you don't have anybody else to blame.

Interviewer

So to sum it up, it's a great tool to support you, to get to results faster. But at the end of the day, you still need a human there in the process to check everything and see if it's accurate, right?

Expert 10

Yeah. I have been using large language models for three years now. They are getting very good. Its accuracy is amazing for some tasks. For others, not even when you create. For example, use

a bard. Not Bard, but if use Dowley or mid journey or Firefly to create illustrations. If you go in the details, you see that the illustrations, they are not perfect. You have problems there that you need to fix manually. That's the same thing for texts or for any other output of a generative AI. All of them, they have some problem. If you go, for example, to create music where you can use free of copyright, the music you need to edit most of the time, you need to add the speed, you need to put the volume higher from one instrument and decrease another. Well, you need to adjust. And the same is the same for everything, for all the tools. That's the way I see now. Once you are improving in the way you contextualize as well your prompts, it gets really good, but it gets really good because I know the content of what has been generated and I can spot the mistakes very quickly. Well now let's say that my boss decides that he doesn't need me anymore with years of experience because now generative AI is great. Instead of paying 5 million a year, if you hire someone to pay 100,000, also that I earn 5 million a year I would like. But you know what I mean, then it could be a risk. It's like big banks are doing. I just wrote a paper about the usage of digital humans avatars in customer okay. Companies like bank of America, Unilever and many others. Big corporations, they are replacing good part of people that work in front end activities by this technology. Well, if you call one of tHem, like Vodafone for example, here in the UK, they just did. And these days I was just listening three people talking about their experience of engaging and interacting with these tools. And I said was horrible because at the end I was spending like 20 minutes with the AI, talking with the avatar and blah blah. But at the end I was transferred to a human because the technology couldn't solve my problem. We are still in the early days. So to conclude, founders and users need to critically assess the outputs, and don’t be mislead by content just because it sounds great.

Interviewer

That's actually a great transition towards the sales topic, which also heavily relies on customer

interaction or prospect interaction in the area of sales. So could you please share some use cases that you see there where Generative AI has a huge impact on every activity there? And also keep in mind the dimension, especially towards the quality, the time spent to receive the outputs and the cost.

Expert 10

Look, I just wrote a paper about this as well. The paper I have been working doing one year and a half now we are about submitting the paper. In the end of this month I interviewed 28 sales heads of sales of European companies, median European companies where I explored each stage of the sales funnel, the six, seven stage of the sales funnel in the B two B sales, asking them what tools they are using. Each one. We framed the paper much more in the sales enablement applications. So these sales enablement applications, they are all empowered with generative AI. For your understanding of the limitations of these tools, the tool is being used in the early stages of the sales. Funny when in the late stages. What I mean about that, you can use it for prospecting, you can use it for text generation, you can use it for, let's say classification, or you can use for warming, qualifying the prospect to lead and lead to most qualified lead or marketing qualified lead. But then all the rest of the interactions, they are done by a sales professional. Only at the end you can have the onboard using generative AI for simple things like welcome kits, welcome emails. You can have generative AI helping to guide the client to do, to sign in the contract or the agreement online and then you do the onboard and the post sales somehow. So there are many tools available already. There were a paper published last year and the authors, they did exactly what I did. But they look at much more about the tools per se than the opinions of people that are using the tools for managing sales. But they identified 150 tools. Well, at the same time that these tools, they help big time. They help. They help exactly the way I am saying to you, for example, you can now which one of my nightmares,

for example, when I was a sales director and sales and marketing director was to have consistence in communication, right? So each salesperson can write whatever he wants or she wants. Sometimes they don't write well, they commit mistakes with typos. This type of thing, VLAN active can help. So it can help to identify and to proof you read and to give you a better, more professional and standardized communication. It is in usage for that. It can as well to help to identify the correct timing to engage with the customer. But then it's not only generative AI, right? You have machine learning as well, doing sediment analysis, analyzing and making correlations between data points. And then the generative AI at some point can tell you, as a sales person can tell you, oh, it looks like is the time to engage with the customer because it is. And this, and this, I would recommend this message or to offer this product, this service. Now if you go for more consumer in the consumer side, for example direct to customer sales, you have now generative AI being used to create all the description of products based in a photo or the way route, right? You write a description and then it creates the photo. So Google, for example, Google Cloud, they have this functionality there you can use via API Connect to your Adobe creator and then you can create all of this very fast. Very fast. Yes, that's what I'm saying. Now you have a huge impact on the salespeople, right? Because these people, they are not trained to use these tools. And then you can overload them. You can overload them and maybe the bottom line will not be what you expect. And that's the reason most of the companies that are adopting these technologies, as far as I understood from them, listen to them, they are merging the initial stages of the sales process with marketing. So marketing is taking over most of this part of the more let's say digital side of the sales where they can use this technology because they are hiring people already with this expertise, with more digital side, people with less pressure for selling, for closing the sales. So then you have people thinking about how to use the technology in the proper way in ET stage and then the salesperson will engage with the customer and we use the technology most as an assistant as were discussing using for correcting

emails or understanding the right time to engage with the customer or using for doing for autoresponder with emails. This type of application simple than the ones that requires more analysis from the human side.

Interviewer

And in terms of this training, what would you say were the benefits if you were to train your sales personnel? Would it simply take too long? Or why are companies opting to not do that? And what are the benefits if the salespeople are able to use generative AI correctly?

Expert 10

Yeah, it's a matter of training and it's a matter of time as well. You get used to the tool, right? It's like when we start using mobile phones and then smartphones, or when we start using a company implemented Salesforce, for example, in two big corporations or SAP, it's always a nightmare. The adoption curve takes a while, mostly because this, let's say, profile of professional, they were trained to do things faster and to engage with customers and to spend their time making money, if they can make money and they can sell without knowing how to use a new technology. Better, right? Much better. But it is a matter of training, it is a matter of future, it is a matter of behavior and attitude. In my paper I wrote a lot about this, about the attitude and behavior of the top management that needs to cascade these and lead the team to the direction of using the technology as a support tool that can increase and improve the efficacy, the efficiency and so forth, so on. It takes a while. I don't think this will be done quick. Yes. And a lot of companies, they are kind of holding off the implementation of these tools. Some of them I know, for example Coca Cola, they are developing their own. So I have a colleague that is working with them in this implementation. He is training their own language model is local. He's in a local server with a local GPU because they don't want as well to include

in the risk of sharing sensitive information with externals, including cloud providers and including the companies that develop these. You, if you look at Copilot from Microsoft, now that they are launching and they are implementing design around the world, I have friends in Brazil and here in the UK and the adoption has been very low, very slow here in the university, I can't use, I have the plugin here for the copilot and I can't use because the universe doesn't allow because you are all the time sharing your information on the cloud and this data is in a database training these models and you never know where this data will. It's a matter of espionage, this type of thing. That's why I think the adoption by startups, they will be faster because they don't really see much risk to intellectual property and this type of thing. Even though maybe only the times you say, the time you say fee or until these big corporations, they ensure the big companies and the medium companies that they have guard array of to secure the data.

Interviewer

And if you think about startup companies, so for instance, if you launch a startup, you have no one with sales expertise yet and you want to build your sales team, how can generative AI can be of help there if you're just starting up?

Expert 10

By my experience as well, startups, they don't build the sales team from scratch, right? Because they don't have the source. Even if they have, they don't know how to do so. I think their generative AI can be of great help because as you may know already, if you ask shotgpt to help you to define a sales strategy based on your product in that specific sector, it will give you a step by step, and then you ask for tools that can help it, you provide you the names of the tool and so forth, so on. This is kind of like to have a business consultant at your side, right? But

again, the decisions will be yours. As I said to you, it speed ups everything. It speed up the way you learn, it speed up the way you understand the market. Another day I was doing a competitive market analysis using bad and strategic. It's quite amazing, right? I did this in the past, always by hand accessing multiple websites and reading business reports here and there to put all together in a table, comparing my company and my products with the others. And now you can do this very fast. I think it's pretty much about speeding up. You not solve your problem, but it's about speeding up because your problem is to sell, right? And at the same time that you are doing this, you have many people doing the same.

Interviewer

Perfect. And then last question before we get to the self assessment. Moving away from sales, how do you in general predict the role of generative AI in the future for startups? So will there be some trends there or how do you expect everything to develop?

Expert 10

I think as any other tool. In the future, I think you have the adoption curve, which is normal for technology, but at this time it looks to be faster than other type of technology. The early adopters, now they can gain some advantage. You can see in YouTube videos, blAh, blah, a lot of people claiming that they are making money faster, that they are making money doing things that they didn't in the past, or adding some addions to their products and services based on what TVI can do in the future. As more companies they adopt this technology, we'll be one more tool, you'll be one more tool. And then I think the competitive advantage based on this capability and this capacity, the capacity of the startup to use will be normalized, meaning that if you don't, you even don't start in that field. How will you progress in the future? Sure. In the sense of the capability of the technology. Well, there are many futurists trying to predict what we're

going to happen, but I think the way I see that we're going to have these two as an employee, it will be a digital employee. I don't know if you heard about Amelia from. I did, yes. You know them. So it's pretty much what they are doing for years, right? And now they can finally have an employee, a plug and play employee for some business functions for the startup, it will be the same. Instead of hiring one person, you have this generative AI empowered virtual assistants, let's say for sales, for marketing, for accounting, and they will going to be like a kind of plugin for you. And you can use them because the price will decrease exponentially over the years once we gain more computing power and better Internet connections and so forth, so on. But I'm not sure if we will have, let's say, the benefit, the full benefit of this technology in the next decade or so, mainly because of our poor Internet connection. Right. We have a huge limitation in this sense, because the network is still an issue in this country, in UK, I don't know, in Portugal, but here in the UK is not good. As you can see, we need to switch off our cameras, otherwise we cannot talk, we cannot see each other. Can you imagine millions of companies using this generative AI, spending a lot of energy and consuming Bundy with it? We're not going to work. In the future we're going to have digital assistants, one for each one of us. We can already have, right? Sort of. If I want, I can have my virtual assistant. I don't have it because my notebook from the university is scrap, does not support or I would like to have. Yes, I think we are going there. But then you need to consider another stuff as well, right? Another subjects like ethical, the ethics of it, the cybersecurity of it, the identity and so forth, so on. But this is another conversation, I think it's not the scope of your research.

Interviewer

Super interesting. So you helped me a lot. Before we wrap this up, I had a self assessment for you. So if you take a look at the chat, I posted four categories and I would like to know which one of you feel most comfortable to be put in.

Expert 10

I think I am expert, not Pioneer, although I have used this tool for many years and developed one myself, but I did not implement in any company, so it's much more for academic.

Interviewer

Thanks a lot, that was super helpful.

Name	**Expert 11 (E11)**
Categorization	Advanced Proficient
Description	Expert 11 has studied Computer Science and Informatics in Germany and Turkey and works as a Software Engineer at a Tech Startup. She has prior experience on some GAI projects within her current function.

Interviewer

First question, could you describe how you understand and use Gen AI, particularly in relation to its function and impact within the startup ecosystem you work at your company?

Expert 11

Okay, so for starters, I don't think Gen AI is a magical tool that you can use for everything. It has limited capabilities, actually. It's not something that is like super smart or anything. So it just technically you give some input and then it starts generating text based on that, mostly for text generation like chat, GPT. Other than that, it can perform some analysis of data and so on. But at the end of the day, it's not a magical tool that you can use for everything. So for me, GenAi is something that can make your life easier or make a company's processes or a

customer's processes easier. It's just, I think, helper, not something that is like, what do you call that one size fit like solution to every problem. But still, it's quite useful for basically automating some things and also just to help and support teams and customers and so on. I would say for now at least, I think there are also some companies that use add AI to things and doing that, they complicate stuff. But I think when it's used correctly, it's something that you can drastically improve your processes, but you just cannot, I think, rely on it. So for me it's like that. And right now in the company, we are trying to mostly automate things, basically.

Interviewer

That's super interesting that you mentioned the challenges and limitations. Can you maybe go a bit deeper into all the things that Genai can't do or things you notice when implementing the Genai solutions that you maybe initially.

Expert 11

I mean, if you don't give it enough, let's say, data or instructions with the prompts and so on, actually it can do an opposite effect. So it's not just that tool that you can plug in and it would automize everything. So the other process is also really important. And if you do not have, let's say, enough data or an applicable use case, then it actually complicates things more and it's really hard to produce valuable, I think, products with it or working products. So that's one of the sidefalls. And also I think you really have to understand its capabilities and what it cannot do otherwise. I set some unattainable expectations, but. At the end of the day, it's just a tool, I would say a very powerful tool, but you really have to know how to use it, where to use it and so on.

Interviewer

And how are you trying to mitigate these challenges?

Expert 11

For starters, like setting attainable goals. And always as this is a new area, we try to start with just an MVP or minimum viable product with just a proof of concept instead of starting full blown projects, because we really have to first see if something is feasible. If it's not feasible, then if you just start everything in an organized way in a full blown project, then at the end you can just see that, oh, this is not going to work actually. So to mitigate this, we try to start as small as possible, do everything incrementally. We just first try to see if it's doable or if it works in any way with a small example, and then if we think it's valuable. And we also try to get as much feedback as possible. So for instance, if it's for sales team, are they going to use it? Do they like this idea? And so on. And if it's a go, then we just add another layer and iterate basically.

Interviewer

Perfect. Thank you. So moving on to the different categories we're taking a closer look on. Can you say anything about design and user experience in terms of implementing GenAi there? Or have you ever done that?

Expert 11

So far only one tool has an UI and it's like in its MVP form. So it was just no code tool that I used. So yeah, for user interface I am not yet there.

Interviewer

No worries at all. We're here to talk about the things where you have experience in. In terms of software engineering, have you used it to generate code or use it to make your life, I mean your software engineer yourself make it easier there.

Expert 11

Do you mean if I use Gen AI for. Yes, yes, I have. I'm using GitHub Copilot, which is like an AI based tool for has. It can write the code too, which is not the best, but like autocomplete features and so on. And if I have to write a small function that does something, and if I don't want to think about it at that point, I just ask chetpt basically.

Interviewer

So does it also change something in terms of the skills? When I think about a startup, when I now want to hire my developers, my software engineers, do I need maybe less people now when I can use GenAi to assist coding or do I need people with different skills or what's your view on that?

Expert 11

You mean like, is Geni there yet to replace its developers? I don't think it's there yet. It can help you maybe make a developer a bit more productive. But I don't think right now you can just rely on any language model to generate code and without reviewing it or seeing it. And also I think the time that you are trying to perfect it because the prompt is also important and it still gets stuff wrong. So sometimes I realize instead of like asking check GPT, I could have just written the function. It takes some practice too. I think it's going to get better, but I

wouldn't say right now to save money for a startup it's wise to. I don't think someone can utilize AI for saving money yet in terms of.

Interviewer

You just mentioned the missing accuracy and that you can't rely on it. Have you encountered any challenges in that way where maybe someone has been super reliant or used that code and it went wrong, or how would you approach that? To check if it's reliable.

Expert 11

You should test your code, but you should actually check everything that first check GPT says because it really hallucinates. So it just sometimes makes up information and it makes it up in a really believable way that if you don't know the answer, kind of it's like you wouldn't suspect. But at the end, like these LLM hallucinate and make up stuff. I wouldn't use CheT PT only or a large language model only for like without controlling it. I think it still has to be controlled. It can be the case that it's not AI's fault and also you give not enough data and so on. But still there's a high chance that it will hallucinate, make up stuff, give wrong code because you weren't being clear or it didn't understand. Yeah.

Interviewer

Then lastly moving on to a sales use case. So I know that we've worked on this together at your company, but can you maybe share more use cases where GenAi impacted a startup in general in sales or could potentially impact due to its capabilities?

Expert 11

I think it's again like the tool that we have created to reduce the manual work that salespeople

has to make. Like making researches like an assessments about prospects and then also generating that kind of report automatically. Other than that, during sales process, if there are some things that customers. Ask. A lot, like creating chat bots is now super easy. You can always create a chatbot for everything. Actually at this point, if you have enough data. Other than that, I don't know because I don't know sales much.

Interviewer

It's totally fine. Can you maybe explain a bit more on the chat bot? So how can generate their leverage, efficiency and probably also time.

Expert 11

Yeah, for the chatbot case, we haven't started doing the chatbot thing yet, like we are working on other projects. But even if you chat with whoever, I was talking with someone the other day, and most companies are right now trying to create, basically trying to move their customer services, at least the basic part of it, to GenAI, they are integrating this quite a lot. So there's a huge rate of companies that try to do the first part of these customer services or that kind of stuff with GenAI. And then if GenAI cannot solve or answer the questions, they can further, I don't know, send an email or call the company and so on. So I think that's a huge thing that companies are doing right now, basically to optimize the questions that their customers ask in any way.

Interviewer

So would that only be applicable for customer success or also in a sales process if, for instance, prospects have questions about the product before they even become customers?

Expert 11

Yeah, actually, yes, that's what I was trying to say. Of course it can be applicable for sales too. Or I love from top of my head, actually, in your website, you can also have a chat bot. That's when some prospect comes into your website and cannot find an information or doesn't want to read through all the pages. I don't know, maybe ask stuff about the product to get some information, like key information. I don't know how this would affect sales actually. Maybe them contacting sales is more, I don't know is better. But yeah, that's definitely also doable.

Interviewer

Perfect. And then lastly, I have some more general questions about the future outlook as well. So first of all, we've now only talked about a few use cases or areas where GenAI could be applied in a startup space. Are there any other high impact use.

Expert 11

Cases that you see for startups, high impact use cases. For me, if I had a great idea, probably I'll fund a company. But mostly I think what I see, and I think what's going to happen in the future is just really like companies are really going to automate their work as much as possible. With AI. I think there will be still some control, but that's, I think, the most applicable and the best usage right now to making things easier for the employees and the customers as well. And it also makes it fancy for the customer, but that's a different story. So yeah, I think it's mostly like task automation in the future. I don't know what can happen.

Expert 11

I still don't see GAI replacing people part because you still have to control the things and people still need human contact, I think customers and so on. So yeah, that's, other than that, I cannot think of anything.

Interviewer

And if you would were to recommend some guidance to other startups that are looking to implement generative AI into their daily operations, what would you advise mean?

Expert 11

I think I wouldn't right away recommend doing any GenAI stuff because if you just start with GenAI, I mean, if it's not your product, by the way, if it's an AI product, that's a different story. But if you are trying to adapt Gen AI to, I don't know, for some processes and so on, I don't think it makes sense to adapt them immediately before you have everything and you have a good working manual process because the output from those processes, like the data and so on, are critical for optimizing it. So if you just start by optimizing it might be a bit tricky because you don't have a baseline to compare. I think that would be the first case, first thing I would say, yeah, that would be my, based on my experience, I think this is really important to keep in mind. Like if you don't enough data or a baseline to compare, it's impossible to use it. Or yeah, it doesn't work really well just to understand. That's because I then can't properly assess the outputs or why do I need the baseline to compare, I cannot assess. The outputs or there will be no comparison points, I think. And also so the AI can just make up stuff and you wouldn't know, kind of, but even without that, for instance, for a question answer bot or stuff like that, if you don't have a set of question answers, let's say that you have accumulated before, or if you haven't start the knowledge base yet. Yeah, if you just try to use AI, you need some data for the AI, and if you haven't accumulated that data yet, it's

really hard for it to replace the processes because it doesn't have some knowledge to learn from. It's a bit tricky to explain.

Interviewer

No, but that's actually very good point. And then my last question would be, what are some ethical consideration or other potential pitfalls that startups should be mindful when adopting Gen AI.

Expert 11

Ethical. Of course, the companies that do this, it's actually not GDPR compliant and they don't care. So, for instance, when I was talking about chatbots, they just use OpenAI API like Chat GPT, because it's really easy to use. They don't use their own models, but they technically send the conversations or private information of customers or prospects to OpenAI, which is like, it's not compliant. So it's really important to keep the data that you are using because sometimes it's customer data, it can customer data or employee data, you should not leave the company or wherever you run your system. I mean, some companies already are because OpenAI is really easy to use. They are just using that and sending personal information to OpenAI. Yeah. So that's an ethical concern, I would say. Yeah, I think that's the biggest ethical concern for me.

Interviewer

Perfect then. Thanks a lot. And before we wrap it up, I have four categories that we came up with, and I would like to ask you for self assessment. So I just posted them in the chat, just briefly read over them. We have beginner, advanced proficient, expert and Pioneer. And let me know which of those categories you feel most comfortable to put yourself in.

Expert 11

I will say advanced proficient because I'm not a beginner at this point, I would say.

Interviewer

Okay, perfect then. Thank you so much for taking the time. It was super helpful. And yeah, enjoy the rest of your day. Thanks again.

Name	**Expert 12 (E12)**
Categorization	Pioneer
Description	Expert 12 is a partner and CPO of Alexander Thamm GmbH, Germany's leading data science and AI company. After studying computer engineering and holding several positions in the IT industry, he founded ParStream, a big data start-up based in Silicon Valley, which was acquired by Cisco in 2015. Expert 12 is a founding member and chairman of the German AI Association.

DISCLAIMER: Translated transcript – Original language: German

Interviewer

Do you have any experience with Gen AI in the areas I just mentioned? Have you worked there, managed any projects?

Expert 12

Yes, we do a lot with GenAI in the area of text generation, or rather we have developed our own framework with large language models using our own document base, we call it Chat with

your own corporate knowledge, uploading your own document base and then providing either employees or customers with a chat interface.

Interviewer

In what areas, in terms of industries or companies, have you used this or do you have a very broad base?

Expert 12

We actually do this for the public sector, from the Ministry of Economics to the ECB to the City of Vienna to industrial companies. So it's relatively industry-unspecific. That's very good to know.

Interviewer

Do you see text generation for start-ups being used in these areas now? That's always a big topic, especially when I look at the sales area or sending out emails. Do you see opportunities where you say it really increases the success of a startup or do you think the influence of GenAI is not so great? Yes, well, I would divide that into two areas.

Expert 12

On the one hand, startups that may also offer services based on GenAI. And startups that offer all other services but use Gen AI. Let's start with the second. Gen AI is of course a booster for getting up to speed. Both in the programming of any applications, from co-pilot to text generation. I already have an idea of what I might build with it. And with image generation or, depending on the situation, more video generation in the near future, you can of course get up to speed much faster where you used to have to create content and programming internally or

with external support. And, of course, you can also build in a few things for start-ups that are not focused on Gen AI in terms of customer communication and customer experience, which will set you apart from the crowd and generate new services. The first area is a bit difficult. But on the one hand, there are of course all kinds of new opportunities to build services with GenAI. On the other hand, the question is always how sustainable this is and, of course, hasn't the next version of ChatGPT or what Microsoft or the big players are providing basically rendered the whole business model obsolete. I recently saw a video with a headline saying that the latest version of ChatGPT is killing 10,000 start-ups because they're just going along with it and that's why it's a really difficult situation. That's a very interesting point that you mention.

Interviewer

How do you see it now that everyone has access to this tool, how can you perhaps stand out? Or will it perhaps be more difficult now because everyone is using it and ultimately generating a similar output? So at the moment you might still have a first mover advantage.

Expert 12

But first mover doesn't always mean the most successful. Sometimes it's the second mover that wins. I assume that the whole thing, i.e. what we see in this environment today, will soon become a commodity everywhere. It's like in the past, when it was said that you have to have a website, then you have to have a mobile app. You almost inevitably have to have this functionality integrated into customer communication or other activities. At some point, this will become standard. At some point, in two or three years, it will probably be difficult to differentiate yourself. Well, we don't know how fast the development will go and what will come next. It's happening so fast at the moment that even research and science can't predict what will happen next.

Interviewer

Do you have any special use cases in the area of marketing and sales where you say it is particularly well suited to this, or is this exactly what start-ups should be doing now in this area?

Expert 12

Let me say that recent developments have made the topic of chatbots relevant for the first time. It has been around for a while, but it was mostly always horrible. And I think we've now reached the point where you can have complete customer interactions operated or controlled via a chat interface. I even find it interesting, especially when it comes to mobile applications, yes, I think there is still a lot of potential to say, I just need a user interface as a chatbot. So all that, with standard web applications it might be quicker and easier to fill out a form. But on a cell phone, it might be quicker to simply guide the user through the chat, especially if I can control it by voice. I think this will give a further boost if text-to-speech systems - we have built a small demo of this - can be expanded to include text-to-speech in real time.

Interviewer

Do I even need a human being in the current situation who is involved in a lot of interaction or iterates the texts? And especially if you look at prompt engineering now and also if you look at the technical development, what will it be like in a few years' time? How do you see it?

Expert 12

In terms of customer interaction, I believe that it is already possible to build systems that can intercept 80% of customer interactions and then, let's say, call a call center or something like that and then, as is already established if you can't get any further, you have to call in a call

center agent directly. In other matters, I believe that the problem at the moment is the issue of hallucinations, because that is actually in the nature of things. Exaggerated expectations are also being stirred up. The systems simply don't have any structured knowledge. They just add one word to another. That's why it can always happen that something sounds good but isn't true. You have to be aware of that and then you can optimize it and then at some point you have to say what percentage accuracy I need so that I can release it to the customer or whoever without human control. Yes, that will vary from application area to application area.

Interviewer

Are there any ways in which, when I set up the whole thing, I can somehow say, okay, I can now achieve accuracy up to such and such a percentage, or how can I make sure that I am as accurate as possible and then let it run without always having to check the information manually?

Expert 12

There are things like Guardrails, where things are retrained for a specific area. There is the topic of retrieval augmented generation. We are involved in many projects that work a little differently. You have a large number of documents and then the document that contains the answer to your question is selected first. And then an answer is generated from the document, but at the same time the document is referenced. In other words, you can always just look at the link and check what it actually says if you have any doubts. So there are already methods and I believe that this will continue to improve. You will never achieve 100 percent, but people don't achieve 100 percent either. So you have to be aware of that. Somehow the discussion always assumes that people have the perfect truth in their neural network. But unfortunately, that's not the case. Absolutely.

Interviewer

And in terms of costs, how do you estimate that currently and perhaps also in the next few years? How expensive is it currently if I want to implement a project in the customer area, for example? Am I cheaper there? All in all, if I outsource it to AI or human-driven, it's still cheaper at the moment.

Expert 12

Yes, well, if it's cheaper in the long term, you wouldn't do it. Then you would say, why should I then? Of course you can achieve efficiency gains. Of course, you have to do the math and test it. The costs for such a system, especially the data center or computing time costs, should not be underestimated at the moment. They need quite a lot of hardware infrastructure and that is something that is currently being overlooked in the whole discussion. In other words, if I have a highly frequented system, then the GPU costs are going to hit the bottom line at some point.

Interviewer

That's great information on this whole area of customer acquisition. Maybe take a look at the other areas. Ideation, it's mainly about the classic areas. Okay, first of all, how do I come up with an idea for a startup and then how do I test my problem-solution fit? Do you think GenAI has a significant use case? Yes, you can ask ChatGPT and get a bit of inspiration.

Expert 12

I'm not a fan of the idea of "I want to found a startup and I'm looking for an idea" anyway, but rather a friend of the approach of "I've identified a problem here, for example through a customer project, I could build a solution for it and I don't need a greenfield idea". So, as I said,

you can be inspired by that, but I wouldn't overestimate it. At the end of the day, you still have to put groups of people into it yourself. Sure, definitely.

Interviewer

If I now have this idea and want to validate it with the customer through market surveys and other things, do you see a use case for GenAI? Not so much, actually.

Expert 12

Well, if I want to validate an idea like that, well, in the B2B environment I just have to find a customer who will do the first project with me to really validate it. And in the B2C environment, I just have to see whether the services, I don't know, on a website or whatever, are bought by the customer. At the end of the day, I believe that, as I said, the whole thing can help a bit with inspiration and a bit of looking and research. But that's not a game changer.

Interviewer

And if we look at the engineering sector, there are of course major challenges for start-ups, yes, finding developers, which is of course also very expensive, especially at the beginning. What does it look like if I have basic knowledge of the programming language as a founder? Can I generally use it to really build my own digital product, or is it not yet advanced enough for that?

Expert 12

I think you can approach it from two sides. On the one hand, you will probably be able to go and build prototypes very quickly, even with relatively little know-how. There will also be and these offers already exist. I think Jonas is even advertising on TV that you can create a homepage with them, support it with AI and say, I want a homepage with these features, then

the system will build it automatically. So I think there will be services. Of course, if you really go into hardcore programming, then you can definitely increase efficiency. There are programmers who claim that they already do 80 percent of the code, can be generated via Co-Pilot or something like that. Nevertheless, I still need people who really have in-depth know-how. A complex IT program that I have generated by Co-Pilot with half-knowledge and then put into production. And I wouldn't want to rely on what then goes into production.

Interviewer

Does this mean that I simply need fewer people who are familiar with the area? Will one be enough where I had a whole team before? Or would you say the number remains the same, only the work shifts?

Expert 12

Yes, it will probably be very different, but if I can have 50 to 60 percent of the code generated and then have a small team that works intensively with it, then they will probably also generate more output. Then I might only need 40% to 60% of the original, planned team size, yes.

Interviewer

And if we look at the UI-UX area, is it similar there, or would you say it's a different use case and generally not as applicable? Yes, definitely.

Expert 12

It starts with image generation, where I can do something quickly, yes, right up to the topic that there are these funny demos where I photograph the structure of a website on the whiteboard model and then I get the code out of it. You can certainly do interesting things with A-B testing,

even with different content and so on. You can scale that. But again, at the end of the day, there has to be someone who has a clue and can control and assess all these things. If I'm half-knowledgeable, I would find it very dangerous to only work with these tools. Absolutely.

Interviewer

That's it for our specific parts. Finally, I have two general questions. Firstly, we've now mainly looked at the four areas of ideation, customer acquisition and then product building, once from the engineering and UI UX side. Are there any other areas in this startup space where you say that GenAI definitely has a very big influence or will have one in the coming years? Yes, actually across the entire global value chain.

Expert 12

So the question of whether, for example, I don't know, document processing for incoming invoices or incoming orders, any research tasks, so I wouldn't just take out the elements that you just said, but look at the entire value chain and see where I can use the whole thing.

Interviewer

And if we think about 50 years from now, what do you think historians would say about the influence GenAI has had on the development of start-ups, especially now in the early 21st century or in our current times?

Expert 12

50 years would be a bit far, but... So, as I said, split between these two areas, the GenAI native startups that have this as their core business, it could be that in ten years' time people will say that Microsoft and Google have developed such market dominance through Gen AI that they

have killed the entire tech startup business. Yes, something like that. And otherwise, yes, as I said, it will become a commodity. We will see start-ups that may be able to gain market share with new services because they implement it relatively early on. But at some point, in ten years' time, we'll realize that anyone who hasn't dealt with these things in good time and used them will perhaps find it difficult to compete.

Interviewer

Those were very good insights. Thank you very much. Finally, a self-assessment. I just sent you four categories in the Chat. Where would you categorize yourself?

Expert 12

I don't do implementation myself. But when it comes to the impact on the economy and the entire structure, I would be a pioneer. This is already evident in the fact that two years ago I said that we need large AI computing centers, for example. In Germany, to build them competitively, and after two years, all the politicians and so on have realized that. Yes, so I think I was very early with the ideas and so on.

Interviewer

Thank you very much and, above all, thank you for taking the time.

Name	**Expert 13 (E13)**
Categorization	Advanced Proficient

Description	Expert 13 is Head of Sales in a B2B Tech Startup. He joined the company early on and helped to build all sales processes. Currently he is working on the implementation of the first GAI use cases across the sales function.

Interviewer

So I'm going to start with a general question. So first of all, could you please describe how you understand and use Gen AI, and particularly in relation to its function and impact within the startup ecosystem you work in?

Expert 13

So how I understand it is basically it's just speeding up things like accelerating what we're doing anyways by just training some AI on working on some tasks that we have to do. In any case, for example, I need to create some email. I just paste like three to four sentences like rough ideas into a sheet, hand it over to some chat GPT stuff or comparable things like an outlook, and it just generates that mail for me. So in the end, right now I see how AI works in that sense is it's speeding up things. I think we're at this point quite far away from actually taking over whole functions.

Expert 13

It's the fact that sales is often not a 60 30 thingy, but either it's usually a one or zero topic, meaning that either it's good enough or it's just not good enough, and that the remaining 20-30% at least from my experience, not really being deliverable by GenAI at this point. I hope that was kind of answering your question. I think your question had like two questions in it. So the first one is How I see AI, right? And the second one is how. What was the second one?

Interviewer

How it has an impact on startups in general.

Expert 13

Okay, well that's a very broad question. So I think that in general AI can be, if used properly, leverage the knowledge of leading people in a company. And by leading I do not mean the leaders or hide hierarchy, but people that are aware of the capabilities of AI, more or less leveraging their knowledge ideas by giving them the chance to create more output, strong and good output in a shorter period of time. And by that more or less, AI gives startups the chance to deliver faster, even though the quality might decrease a bit. On a couple of things, the overall impact on startups is twofold.

Expert 13

On the one hand side, it comes with a lot of chance to, if you properly use it, to speed up things, but if you are relying too much on it, this can actually decrease the quality that much, and you're not even aware of it because you're not questioning it that much that you can actually fall behind. I have an example of that. So I just work on the up on manual, and what I did there is add some very complex things that I wanted to make easy for people. And I spent like three, 4 hours and I tried to give chat GPT a very complex text and ask it to make it simpler and simple and abstract it and make it easier and so on. And in the end I thought I'd be happy because what chat GPT produces sounds very good in the end.

Expert 13

But I just slept over it for one night and I figured out that what ChetGBT made out of it in the end was absolutely not what I wanted to have. It sounded good and I thought it would be good, but it was not good. It was just going away from the original idea of what I was thinking about. So if you're not aware of that, it can easily be misused and can then lead to inefficiencies. So in other words, or summing this whole thing up, AI is definitely a game changer in terms of speeding up people and leveraging the knowledge of not only knowledge, but the impact of people who are able to use iT.

Expert 13

At the same time, it's really risky in terms of misusing it or overly relying on it without questioning the output, which is happening very fast because it's so strong at writing.

Interviewer

Are there any other limitations, do you see besides inaccuracy or not coming up with the output that you initially wanted?

Expert 13

Yes, I think that reminds me of school. So there were people in school that just try to get the best grades for the sake of getting the best grades, and other people that just really didn't care about grades at all. They were either saying, okay, I do this because I think it is important for me to understand that. And they might not even use some calculators or anything comparable just because it doesn't help them to gain more knowledge in the long term without by just using calculators, making things as easy as possible just for the sake of getting it done. And I think that AI is just some calculator on testosterone or steroids, meaning that people tend to get lazy as soon as you are able to use such things.

Expert 13

And if you are aware of that, again, you can make use of it by constantly reminding of you that could happen, but for other people it might lead to the opposite, like overly relying on it, getting lazy and not in a sense of I'm not doing anything, but I'm not questioning things. Again, I'm not creative because I'm asking for the creativity of that thingy. So I think that is a huge danger in my opinion. I see that everywhere. I see a lot of people saying the mail that chat GPT is providing makes more sense than what I could provide. Yes, that's true. But if you're never ever going to write your own mails, you will never have any chance to get better and understand if that was Chet is actually doing is good or not.

Expert 13

So they're losing the skills to evaluate the results, and I think that's a huge danger. Yeah, perfect.

Interviewer

So moving on to the more sales specific use cases, can you please share some use cases where Jenny can be of help for a startup? And please keep in mind in terms of, or evaluate these in terms of quality time and cost for the startup of the output compared to what you already did in your last answer.

Expert 13

Yeah, doing it yourself quality. Okay, if I move away from the original question, please let me know. So I think that my opinion right now, what can we do as a startup, and what can we do in sales specifically, is sales should be very easy in the end, but the underlying process is complex for people. Reps, AES, PDRs don't have endless time to study theory. They should

just execute, at least to a certain degree. Study 1020 percent execute 80% if you now want to derive compelling messaging or actually increasing the conversion rates, you need to make sure that you still understand at least a certain degree of things before you actually derive some good messaging.

Expert 13

And for that, it is necessary that the person being responsible for setting up playbooks and so on, outbound playbook, inbound manual, ultimate playbook and so on, is capable of breaking down very complex topics into simple, understandable, actionable things. And I do that usually. That's one of my main tasks, to make things actionable understandable without losing the context. And this is something that AI can, or in this case, chat GPT is brutally helpful for. So what I do is I just paste my text and I do not say make it easier, change it anyway, but I'm just giving him or not him it the task to challenge if there are logical issues or errors in between, if I'm moving from one level to the other without actually making sure that people can follow. So this is something that AI is capable of doing.

Expert 13

And this is brutally helpful for complex sales setups, because what happens a lot of times is that you have some general idea on the management level, but you have a totally different understanding on other levels, leading to friction, leading to inefficiencies and so on. And this thingy is actually capable of then reducing those inefficiencies by making sure that whatever you put in such a manual is stringent from top to bottom, and there are no logical base in between. Of course, that can also be done by other people, but it takes a lot of time for them to just think about that topic if they're not doing that on a daily basis. So it's just speeding up that

process and guaranteeing a certain level of stringency in a very relevant playbook. That's number one.

Expert 13

Number two is that, of course, if you are working in a company that speaks two different languages, or maybe even more, it's just helping tremendously. Instead of just translating some mails, you can just use chat GPT or very strong translation programs to do so, and even increase the quality by doing so. That is very strong. The next big thing is that chat GPT is about to be even better when it comes to reading PowerPoint slides and so on. So I think that what I tried is I give you PowerPoint slide one, two and three. I'm not giving you number four and I'm giving you number five. And I want it to fill the gap between three and five. And it's doing that for me. And then I can start working on that again.

Expert 13

That increases the speed and gives me sometimes nice ideas on what is actually missing. So this is another methodological thing that can be used and is definitely of advantage. Good. So what did we have so far? Speeding up things also from a sales perspective. And of course, what do the reps in sales actually do? You need to understand the business first and then generate enough interest for people giving you the content to do a discovery call with them. And so, as you know, we are able to derive some very relevant insights for a specific company by using chatGPT and a scanner and all these kind of things to create some very personalized, very individual reports that are far better than what the competition can do.

Expert 13

So again, speeding up something that we can do on our own, plus making it scalable in that way, leading to a shift of resources from doing stuff like this to other improvements. And I think one of the biggest things that AI can do in that setup is if you think about discover calls or any kind of call that happens with external people, an AI is capable of analyzing that call, giving you real time feedback, giving you real time ideas, providing you with relevant customer insight stories and so on, and also analyzing the tonality and all these kind of things. I think that is just starting that's going to come get even better in the end. These are a couple of things.

Interviewer

I hope they're super helpful. I'm nevertheless going to ask you about some other use cases that you haven't mentioned. So first of them is lead generation. How do you think can already has Geni improve the process of identifying and qualifying the leads?

Expert 13

Identifying? So the thing is that I'm a little bit skeptical about companies just name dropping AI. So a lot of companies just say we use AI. What is AI? So is it just machine learning or is it something more? At which point can we speak of AI? So if a company says they're using AI. They're not. There's nothing that says this is AI. Of course we use chat GPT, but by just using GPT data, that's the platform. It's not yet AI supportive or. So in terms of lead gen. I think what we said is that the main goal, if you reach out to companies, is to generate interest. And I think AI can support and creating individual interest by providing in no time relevant information about a certain company and or prospect. So in that sense, it helps to generate more leads.

Expert 13

I think what does not yet fully function is that you just copy paste, for example, the LinkedIn link of a person, plus some general structure for a male, plus two, three other things into one sheet until AI create a message out of that works. Yes. But then we again had that problem, as I told you at the beginning. So it might be strong, but not strong enough. So this is the thing at our company, we are kind of using a lot of things regarding, we're doing a lot of things with chat GPT, but it's hardly ever really customer facing. It's just like the step before the final version.

Interviewer

So also for generating emails or whatever content that is involved that goes out to the customer. You say that it may help, but actual humans that are super experienced in a job are already or still doing a better job at that than generative AI. Did I understand that correctly?

Expert 13

Yes and no. I would say so. Again, if a person is aware of the limitations and then properly sets up the prompt saying this is the final version, the only thing this chat GPT should change now is like 1234 things instantly. This is fine, but this is rather like Excel. You change one thing, it changes the rest. If you create something out of the blue that is very risky to be not good. But if you're smart enough, again, if you're smart enough to see that, you need to step up your awareness when it comes to that can work. I give you an example. So if you write a mail how you like it to be like, including your wording, including your typing, wording style, everything, not too complicated, not too easy, just like it was written by you, and provide that to chatt, and then provide some information below, and then create a message out of that and then read it again, that is absolutely fine. For example, if we have some discover quiz and afterwards we

send out a summary mail or so, that can work. But again, this is just speeding up. It's not making it better at this point.

Interviewer

And if you think about a startup that's just launching their sales effort, has no team whatsoever, and thinks about hiring people and also leveraging Geni to maybe need fewer people or increase the efficiency.

Expert 13

The answer is yes. But again, that person needs to be aware of. That person needs to be very strong in German. If they write in German, very strong in English, very strong in math, otherwise they will not use it properly. Again, I was just speaking to people here at the company about doing A/B test, for example, to see if version A is better. Version B is better on our website you can do that. But if you're not really into statistics and understand what you're doing there, you'll only get so far. And that's the thing, you're not limited by chat GPT, you're limited by your own awareness. And I think a lot of people don't realize that.

Interviewer

That's very good insights. Moving on to another use case I wanted to ask you about is sales forecasting. Are you already using GenAI to make more accurate forecasts? Or in your opinion, does it have the capabilities to do so?

Expert 13

It definitely has the capabilities to do so. Again, you feed that AI thingy with like 10 million different options, and it's just trying to find the best option. And the more you feed it, the better

it gets. So it's going to become better. It's machine learning in the end. We are using that only with what Salesforce is providing us. So of course, like clarity or so they have really advanced forecasting, can be used, will be used. The bigger the company gets, the more relevant a very accurate forecast becomes for this startup or scale up. I don't see that super relevant because there's so many variables at play that will not make the biggest difference. But yes, it's definitely a good use case. Perfect.

Interviewer

And then moving a bit away from the sales use case or application. Are there any other high impact use cases in a startup environment that you see where GenaI can already have a huge impact?

Expert 13

For me, by far the biggest impact, if properly used, can be about enabling yourself. Sometimes people think they know something, and the biggest problem is if people think they know something and they're not actually challenging if they actually understood it. I always ask them, can you teach that or explain that to someone else easily? And if the answer is no, they didn't get it. And instead of always asking other people, you can just do that with chat GPT. So what I personally do is I have like two or three terms, like for example in our case, information security, privacy and compliance. And I ask Chat GPT, what is the relationship between these terms? Is one of them like the baseline and the others are just additions? Are they next to each other? Are they horizontal? You know what I mean?

Expert 13

And you can do that with basically everything you learn in a company from the beginning. And if you do that constantly, we will have a way more comprehensive understanding of what you're doing than if you don't do that. And no, absolutely no team lead has enough time to explain everyone everything all the time. And the more complicated and bigger a company gets, the more variables apply there are, and the more relevant it becomes to always get a sense of which level you're speaking, how relevant something is, instead of knowing just the concrete figures. To give you an example, back to that information security privacy thingy. If you're talking to someone on a sales call and you don't know hey, what is the relation between information security and privacy? You will have no chance of being credible. Zero. It's not possible.

Expert 13

But these are things that are usually not taught because these are things that people need to think about to understand, and sometimes they can't. And chat GPT allows everyone at any point to get an understanding of the relationships between things. And I think this is something that I always try to make sure that all the PDRs know and use, especially within the last couple of weeks, because chat GPT four is way stronger than the previous one. So that has a huge and brutal lever, self enablement, and that can be used by everyone in terms of impact.

Interviewer

For the entire generation. Do you have any sort of guidance for startups that are trying to implement geni applications into their operations? Anything they need to keep in mind?

Expert 13

In general, I recommend to of course, just try a lot and by default think that if the answer is not good, you probably didn't ask the right question because that thing is very smart. So from a

perception wise you need to make sure that you are aware of, you can coach that thing, you can train it. If it's not good, it's to a certain degree up to you, instead of just expecting too much from it. Besides that, I would recommend to really do a deep dive on a couple of things and don't expect from people who are not really good at German, for example, to come up with very strong German messages just by using chat GPT, but expect very strong people with having a lot of skills in German to come up with insanely good output.

Expert 13

So it's a lever for people who are aware and smart to a certain degree, knowing the limits, and it's possibly a danger for people who are not aware. And if a company doesn't realize that, you're going to have a shit ton of output with mediocre quality, maybe even worse, and people not even learning anymore because they just rely on it. But if a company realizes that if we give very strong and easy prompts to people who are just not good at these kind of things, while giving people that are aware are skilled and so on the freedom to use it however they want, they're going to make the most benefit out of it.

Interviewer

And then moving on to our last question before we come to the self assessment, what are your predictions for the role of generative AI in the evolution of startups in the near or longer future, how do you think it changes this landscape?

Expert 13

I think it's going to lead to a polarization, meaning that either you pick up and understand what you're doing and leverage it, or you're going to be left behind. It's the same thing that I observe with the Internet. Some people get smarter and smarter, and others get dumber and dumber.

Same for computers. Either you use it, leverage it, and be self reflective or not, and I think this is exactly what's going to happen. So we're going to see a huge split between different companies to cause a lot of things in between, but still yes or no. And the thing is that if you're really good at leveraging AI, your efficiency is going to increase that much that it's like absolutely not comparable anymore to anything before that. It's like 500 times faster. Also perfect.

Interviewer

Thanks a lot. Then lastly, I'm going to ask you for yourself assessment. We came up with four categories. So in terms of Geni, how would you rate yourself? We have the beginner who has some basic knowledge, advanced proficient who already used geni in a couple of use cases, but not to a big extent. Then we have an expert who's using it a lot. And then we have a pioneer who implemented use cases early setting industry standards. So these are our four categories.

Expert 13

I need to go for advanced, I guess. I mean, I'm not a complete beginner, but I'm definitely far away from an expert or a pioneer. I can't program on my own, but I know quite a lot about machine learning, so I'm not really at zero, but far away from an expert. Perfect.

Name	**Expert 14 (E14)**
Categorization	Advanced Proficient
Description	Expert 14 founded his first digital company, at the age of 15 and is since active as a serial entrepreneur and business angel. He is the Co-Founder of RightNow, a successful LegalTech startup. In 2023, he started building his

	third venture, a startup still in stealth mode. He was listed as “30 under 30” by Forbes Magazine.

Interviewer

So first of all, thank you again for participating in this interview. To give you a quick overview of what we are planning to do with our master's thesis, we are analyzing the impact of generative AI and its capabilities on the common success factors and pitfalls for startups. And there we are focusing our research on four research areas, which is ideation, then product development. One's from an engineering point of view, the other one is from a UI UX and design perspective, and then we're taking a look at customer acquisition. And our research question is how is Genai shaping the capabilities of founders to address success and failure factors when founding a startup? And just as we already mentioned before, there are no right or wrong answers. Just tell us what you think and we're super interested in your opinion and experiences.

Interviewer

And we're going to start off with some general questions, then dive deeper into the individual parts and then have a couple of wrap up questions at the end just to give you idea.

Expert 14

Sounds great.

Interviewer

First question of the four areas, ideation, MVP UI UX, and engineering and customer acquisitions. Have you ever integrated or worked with Geni in one of these areas?

Expert 14

Yes. So since I'm currently in the phase of starting a new startup, I've been recently especially been focused on ideation, MVP testing, and MVP testing is definitely an area where I already have used generative AI for starting landing pages, texting, et cetera. So that's the main focus where I have used it. So far.

Interviewer

And in which of these areas have you seen the biggest shift in capabilities and a way to approach the challenges that are special areas?

Expert 14

Yeah. So to be very honest, I'm quite critical that AI actually could have a significant impact on the ideation phase because I actually also tried to use AI in the beginning for ideation. But I think it actually comes down to two limitations. First of all, as we all know, information are not always accurate. And especially if you're trying to dive deeper, it's definitely a limitation to take into account. And second of all, I think, and I would call it like entrepreneurial judgment is something which is still probably one of their main challenges and also main capabilities a founder can bring to starting a new company and which cannot be replaced by or not be supported by AI in a way that it's actually building up new capabilities.

Expert 14

So that as a critical remark on the very first stage, the ideation, the second phase, the MVP testing, I see actually the most benefit of using it and basically it reduces the time to market the time to MVP testing. So this is what I have noticed. So be it like coming up with a nice name

for your company, or be it coming up with a logo, using it for texting, using it for at least drafting call scripts. So basically a lot of stuff which has been done manually by founders or by support staff in the past can now be done by GenAI. And I think this is a huge benefit and definitely decreases the time to test time to MVP test drastically.

Interviewer

Other from the time spent, do you also think it could increase the probability of success when founding a startup?

Expert 14

I would definitely agree, since time is the amount you spend on testing is crucial because of course time is the most limited resource we all have. And also in the founding process, I think oftentimes founders spend way too much time on testing an idea because it takes a lot of preparation, et cetera. In the end, it's always a numbers game. So basically there are some raw cases where the first idea is already the perfect business model and everything works out. But reality, in my opinion, is rather that you come up with a long list and then you start working on that long list and you're doing MVP tests. So we ended the numbers game and probably like sometimes after the fifth idea, sometimes at the 10th idea, you basically end up with a promising business model.

Expert 14

And the time you have to invest to get there is really decreased by AI because if you do MVP tests and back then, and I remember that when starting my first company, it basically took one to two weeks to come up with a proper landing page, proper text, proper name, proper logo. And nowadays I would actually come up with the, or would support the hypothesis that you

basically can do it in one day. So it's a reduction by at least ten x 15 x, which is huge. And that means that you basically can now test three, four ideas within a month compared to maybe one before.

Interviewer

Do you think that applies to someone who has no prior knowledge in Gen AI, or do you need some foundational understanding in that area to do so?

Expert 14

Well, I would actually consider myself as someone who has not that much experience with working with AI. So chat CPT is my only friend and helper here, and it already showed tremendous success in just helping me to come up with texting, with structuring pages. So I think I would describe it similar to the wave we have all experienced with the no code tools. This was also a huge factor for especially non tech founders to be capable of easily building a landing page, not looking for a freelancer to do that. And I think it's similar with AI. So the landing page or no code tools, I would consider the infrastructure. And now AI is actually adding up on that infrastructure, meaning that you also can really reduce the human resources you need to do testing, be it your own resources or the resources of others.

Interviewer

So if now all founders without even prior knowledge in that area can use these tools, what do you think, in your own opinion, how can founding teams still set themselves apart?

Expert 14

So as I said, I think what AI can support and what it already does support is the execution part. But as we discussed earlier, the ideation part, and also I described it, or I referred to that as entrepreneurial judgment is still for me the key success differentiator between startup and founding teams that succeed and those who do not succeed in the end, because I give you an example. So if you come up with a nice landing page logo, looks nice, you do nice creatives. But in the end, if you then look at, for example, conversion rate, it still needs to be analyzed with entrepreneurial judgment, at least for the time being. I think this is still a factor where it makes a difference. I know like decades ago, years ago, everyone said like in the end it's all an execution game.

Expert 14

I think a lot of VC companies actually back that hypothesis. And I would say that this actually has changed a bit, because execution is no longer only done by human resources, but also by AI resources. So that's changed and I think the brain work. So the entrepreneurial judgment has become an even bigger priority for VCs to check for. In founding teams.

Interviewer

It's actually perfect transition to ideation. We already talked a lot about it, so I'm over to JP to dive a bit deeper in that part.

Interviewer

Thank you. So coming to ideation again, we have four questions here. I would begin with a bigger question, talking about that a little bit more, and then three follow up questions. So the first one is going to be, to what extent do you see the influence of curative AI on ideation As a startup? Can you provide specific examples? I think you already touched upon it.

Expert 14

And to make it very short, I think it's nice for initial brainstorming and maybe to check what are current megatrends, et cetera. But an idea is unequal, a good business model, so it can give you some input, but in the end it's like a Google research, or what are the hottest megatrends out there? The same result you can get with AI, but then turning megatrend, turning a pain point, turning whatever you find into a business model. I think this is a business idea. This is still something AI cannot help you with, at least for the time being.

Interviewer

Okay, so if I understand it right, so idea generation, it's big topic for you, idea validation and finding a problem solution fit is then the other page of the book, right?

Expert 14

Yeah, as we discussed earlier. Also, again, checking if information are accurate, et cetera, I think this is still something to do so that AI can actually provide a good first overview inspiration. But after that it's up to the founders to validate, as you said.

Interviewer

Okay, do you have specific examples? Maybe good examples, maybe also some bad examples.

Expert 14

Yeah, so actually I'm currently looking at the skilled labor shortage in Germany, which is a huge pain point for the companies in Germany. And there actually, I did a couple of brainstorming sessions with AI, like checking what are the areas with the highest shortage,

basically like asking for statistics, but also getting a better understanding of how recruiting in different industries look like. So for that kind of information generation, that was really helpful. And that was one of the most recent specific examples I can share.

Interviewer

Okay, one question to your specific use case. At the moment, completely, it's not an augmented process, but a fully autonomous process. It's basically creating customers, but just in a generative AI system, then testing your product and validating it with a customer. Do you think this process could be a thing like in the future or at the moment also?

Expert 14

Well, actually quite hard for me to judge in the presence. I don't see it as an option. But as I said, the developments are tremendous over the last years with AI. So probably when we do the next round of interviews in a couple of years, that might have changed until then.

Interviewer

Okay, perfect. Then coming to the next question, sort of a comparative analysis. As a founder yourself, do you notice differences in ideation with or versus without generative AI? So you're also talking about minimalizing typical errors, for example, problems in idea generation, problem solution, or also the idea validation.

Expert 14

Yeah, I would describe AI here as a shortcut because as I said earlier, the alternative would be actually googling around, strolling the web and hopefully landing on the right pages. And AI for me is an information consolidator and information speed up because I can really get the

relevant information in much shorter time. Of course, as I said, it's always about just getting inspiration. And of course what is nice that what I also like to do in the past, like talking to people in person. So looking for experts from industries, I think to a certain degree, AI can also take over that part, giving you really detailed, in depth information to specific industries as we talked about, like recruiting. So for me it was quite easy to understand, oh, how does recruiting look like in it versus in construction, et cetera.

Expert 14

So that was really helpful. And the alternative would have been either really long Googling or talking to experts from that field in person. So that was definitely a shortcut. So I think the phrase shortcut is probably the most accurate description of what AI can currently deliver in terms of value in that field.

Interviewer

Okay, you already touched upon the third question. It's industry specific knowledge and democratization of knowledge. So you see a certain impact there. Where do you see exactly the boundaries? So specific question here, is industry specific knowledge essential for developing a good business?

Expert 14

Yeah, so I think the boundaries again, as of today are probably, first of all, that, as I said, you can get in depth information or more detailed information than just Googling around in shorter time. But of course it has its limits. So especially if you have very detailed follow up questions. Sometimes I don't get what I'm looking for. And that compared to the alternative, jumping on an expert call, for example, is much more useful here. So boundary one is definitely like, yes,

there is in depth knowledge available, but to a certain degree. And second of all, as said, but you have the same actually with in person interviews and expert calls, you have to validate and double check the information, which you have to do in both ways.

Expert 14

So actually this is something AI could do basically after doing an expert call with someone from that field. Of course you could double check the information you have received with AI. So I see AI as a good sparing partner to check if information you already have gathered are actually accurate or not.

Interviewer

Okay.

Interviewer

Would you see generative AI as sort of a co founder, maybe now already, or in the future potentially? Or is that still far away for you?

Expert 14

Yeah, for me, I would go with it still far away. I would rather say it could actually help to bootstrap for a longer period. So if you are a founding team, be it a solo entrepreneur or like in a team, and oftentimes soon, you reach the boundaries of your own time so that your time is limited. And I think actually AI could help you to extend that period. So the period before you have to actually hire the first intern, the first employees. This is actually, I think, something AI can do. But I think it's not only AI, it's also, again here, the reference to the no code tools, like for example, Zapier, et cetera.

Expert 14

So there are so many time savers out there considering AI as one of them, which actually helps you to extend that bootstrapping period and that period of actually being able to handle the business on your own.

Interviewer

Okay, perfect. So then I would wrap the ideation part up here and overhand to you again, Joni. Thank you.

Expert 14

Welcome.

Interviewer

So earlier you mentioned that in the MVP development or in the UI UX department, it's especially helpful for coming up with logos or creating visuals. Are there any other changes in that field that you've noticed due to the implementation of generative AI.

Expert 14

In that field? In which specific field UI UX design? Well, actually, until now, no. That would be, for me at least, the two most prominent use cases. I could think that I could also help, for example, if you analyze larger data sets of customer behavior or user behavior. So if you really track the behavior of your users and see where they drop in the conversion funnel, that is probably also something AI could help analyzing. But again, I would doubt the judgment, but

it's definitely a way to analyze or help to analyze, not necessarily help for judging what you have analyzed.

Interviewer

And you also mentioned before that it helps founders to bootstrap for a longer period of time. Do you also think that applies for the UI UX area, or do I eventually need the same amount of full time personnel that I currently need, or can I save some due to Generative AI, for example, or save costs in general?

Expert 14

Well, I think it does not have such a big impact on that specific field. I think here the reference again to the no code tools. I think this is the much more impactful field. And also take, for example, outsourcing platforms like Fiverr. I think these are the real practical influences on that Uiux part. With AI, I'm not sure, but I also would say that I did not have had enough experience with AI in.

Interviewer

That field and moving on to customer acquisition. In the beginning, you mentioned that it's helpful, for example, coming up with a sales script. Are there any other sales activities that you can imagine that are very easy to be replaced by Gen AI?

Expert 14

Yeah, so definitely, for example, for cold calling and customer support calling scripts, as we mentioned, also for writing, for example, newsletters, email templates, so standard email templates for customer communication, also marketing messages. So the messages you want to

put on your Google Ads, Facebook ads, I think is also like a nice field where AI can actually at least deliver some inspiration. And also actually, for example, for content creation, it could be also like a good guideline. So if you're really starting to produce your own creatives and having a guideline or having a storyline, this is also something I would see some, at least to a certain degree, the benefits of using AI.

Interviewer

And what would you say? Is it more like an inspiration, or can it be like a fully fledged script, or does it still need too much human to do that?

Expert 14

Well, I think it's not black or white, but I would rather see it as 80% draft always. So it's for me, if you really consider 80 20 as your principle, then it's a fully fledged draft. If you want to fine tune it a bit, I think there is definitely always potential to fine tune, and I think sometimes it's necessary, but it's always like a very good 80% draft. I actually oftentimes refer to what probably a good intern would deliver. This is a very practical reference, but this is what I noticed over the last month, that basically AI has the same capabilities and the same quality in deliverables as a good intern would have.

Interviewer

And speaking of time savings and money savings, is your answer here similar to the other areas, or do you see a difference in the customer acquisition field of time saved and money saved, for example?

Expert 14

Yeah, I would actually see it quite similar to what we have previously discussed, but it's nice of course here that you can also do it. You can actually include AI in a regular process of reviewing everything around customer acquisition, because as you know, especially when starting a new company, you are learning so much new information every day about your customers, about your products. And I think especially here, the value is that AI is basically always available and always does the job even better when you have more information to provide and this is why I think the impact of AI can actually increase over time, because you have more information and more learnings you can share speaking on over time.

Interviewer

Of course, we're now just at the beginning of Gen AI. This will probably develop a lot in the next couple of years. When you think about customer acquisition in let's say ten years, how do you think generative AI will change that field?

Expert 14

Yeah, I think we will see much more AI created creatives, meaning that it's fully fledged created by AI and there might be a human being appearing, but it's not a real human being anymore. So I think this is like customer acquisition and also marketing in particular are one of the fields. I see huge potential for AI, and also AI really being used in fully automatized solutions. So that basically AI constantly and like marketing nowadays, especially online marketing nowadays, is basically a numbers game in terms of how many new creatives you are able to launch every day. And this is how you do testing, optimizing for the cheapest click, price, et cetera. It's about new content every day. And here I think AI would be a huge time and cost saver and will have a huge impact on that.

Expert 14

And if you manage to fully optimize that, it will be really a game changer.

Interviewer

Perfect. Then coming back to the general questions to wrap it up, are there any other areas in the startup field that we haven't touched upon, but where you think Geni has a huge impact or will have a huge impact?

Expert 14

Maybe one area actually is if you do really hiring and you try to actually do active sourcing, for example on LinkedIn or other talent pools. I think here also AI has a huge impact. I actually tried it a couple of times because in active sourcing it's always about also having an individual text section about the potential candidate. And I think here AI, and this is a very specific use case, could be of great help. So actually like a talent acquisition could be one of the other fields. It's rather later stage in founding a new compAny, but since their very first employees are always a crucial success factor for a startup, this would be an additional field I would mention.

Interviewer

Do you think that also applies to lead generation and sales because it's a very similar use case?

Expert 14

Yeah, especially in B. Two B, definitely. That's quite a similar use case.

Interviewer

Yes. Perfect. And last question, if you think about in 50 years, what do you think? How will historians describe the influence of Gen AI on the early 21st century startups?

Expert 14

Probably as so insignificant to what we will see in 50 years. That it's really like if it would be a graph, it would be really down, and then we'll probably speed up very soon. And so that when we look back, say like this was just the beginning. So I think there will be use cases we can actually, the three of us would not be able to imagine today, but AI would be at some time. So I think it will be exciting, but also maybe as the last comment, of course, regulation is quite an important topic to discuss in that field. And also, I think a lot of people are actually afraid of what AI could do over the time.

Expert 14

When we always think about the positive sides, which are, I think, huge, we always have to also think about how to put it in a good framework so that it really stays on that positive side.

Interviewer

Perfect. Thanks a lot. Then, before we wrap it up, we have four categories. So if you take a look at the chat, we'd like you to self assess yourself in the area of Gena. So we have a beginner who has a basic knowledge of Gena. Then we have an advanced proficient who's a bit more advanced, the expert and the pioneer. So based on your feelings, where would you fall in?

Expert 14

Definitely advanced. So not a beginner anymore, but definitely not more than advanced.

Interviewer

Perfect. And thanks a lot.

Name	**Expert 15 (E15)**
Categorization	Pioneer
Description	Expert 15 is an experienced founder and managing director with many years of experience in setting up and managing companies. Since 2009, he has successfully built 20+ digital companies and transformed them from small teams to medium-sized organizations (500+ employees).

DISCLAIMER: Translated transcript – Original language: German

Interviewer

Have you integrated or worked with GenAI in one of our four focus areas?

Expert 15

Yes, I have already worked with generative AI in the areas of marketing, sales, ideation and engineering. The biggest success - for me personally, the biggest boost was clearly in sales and marketing for my case - and the other was in engineering. I actually think that AI will increase the probability for startups to get to product-market fit. The question is how we define "success". For me, the definition of success for a startup is to find market fit, and generative AI will definitely help with that. Founders will be able to test their hypotheses with fewer and fewer resources, making it easier to succeed. You have to spend less money to test your hypothesis.

Interviewer

Thinking of a founder do you think someone with no prior knowledge of GenAI can effectively leverage it in these areas, compared to someone with a foundational understanding?

Interviewer

In which of these areas have you seen the biggest shift in your capabilities and way to approach solving the challenges special to the areas?

Expert 15

It's actually the case that the really good founders who know how to deal with generative AI have the biggest advantage, in my opinion. Because they will multiply themselves - make a huge leap in knowledge. On the other hand, people who have no idea at all beforehand, but are then taught how to work with generative AI, have a huge advantage. These people suddenly become moderately good people very quickly and very easily. That's why they actually make the biggest leap, but the people who are already very good have the biggest head start, and that applies to every field. In my opinion, it doesn't depend on the use case.

Interviewer

People are talking about democratization of knowledge / skills through GenAI. How can a good founding team still set itself apart?

Expert 15

The question of how you can differentiate yourself from other companies is actually very crucial. I believe that although the technology is now more or less available to everyone, the

extent to which you use it well and how intelligently you use it will make a huge difference, and I think that will be crucial in the future. So those who are able to train data models correctly and apply the algorithms very specifically, who know how to set up the IT architecture so that they can work with the data effectively, will have a clear advantage and will be able to differentiate themselves.

Interviewer

Based on your experience, in which marketing and sales activities can GenAI be applied? Can you provide specific examples?

Expert 15

I believe that technology can help with research and the creation of materials in particular. This means that content can be created and corrected more quickly and that the previous limitations of online marketing campaigns were the limited amount of resources. So, if I had a performance marketing campaign with creative elements, I couldn't scale it infinitely because I would have had to keep creating new images and texts. However, the costs I have for running marketing campaigns remain the same, I just have a higher ROI. If we can also use generative artificial intelligence for automated personalization and the automated creation of images, which is already partly the case, then we will see an explosion in individual customer targeting. This will primarily happen in the areas of research and customer contact. However, founders should consider in which areas an application is suitable and where it is not.

Interviewer

Are there any specific usecases you know that are not able to be solved by GenAI?

Expert 15

Here I see the topic of personal negotiations in particular. I believe there are topics that people only want to talk about with people and where it is important that they develop trust. People won't put their trust in technology for the time being, or it will take quite a while before a tipping point is reached where people trust the machine or the machines of certain brands more than people. I also believe that we always need iterations with people. I think the output so far has been absolutely amazing, but I can still tell very quickly whether the texts were created automatically or whether they have a human touch. And for me, this human touch is what makes the approach valuable, and I believe that it will become even more valuable because machine communication is detailed but too impersonal.

Interviewer

Compared to a regular sales process, how much time could be saved by implementing GenAI, and what are big time saving areas?

Expert 15

You can definitely save time with it, and how much time - that is difficult to quantify and depends very much on the use case. But basically, I believe that we can at least halve the time spent in acquisition on preparation, analysis and preparing speeches, and probably even reduce it by a factor of four or five. The impact on the cost side depends very much on what data I use. If the data volumes are large, then it can quickly become expensive. At the same time, however, it is of course cheaper compared to what I would actually spend on people to do the same work, and that will also increase the willingness to pay, right?

Interviewer

Fast forward 50 years, how do you think historians will describe the influence of GenAI on early 21st-century startups?

Expert 15

I actually believe that we are living in a time of exponential growth and are experiencing a Cambrian explosion. The development of generative artificial intelligence is a massive driver of this. If this is combined with other factors from the last 20 to 30 years, then this will mean further acceleration. I am thinking in particular of the advances in the field of robotics. If you look at how well robots can already move and imitate human movements, and the strength they have because they are not bound or limited by our muscle power, then this is already impressive and frightening as such in the videos from robotics companies. The first tests now show that these robots with generative artificial intelligence can also be given a personality and that they are able to interact with us. I believe that these robots will also be used in areas that we at start-ups have not thought about at all so far, namely specifically in carrying out manual tasks that we have always had to do ourselves up to now, or even in everyday tasks such as taking out the garbage, which nobody likes doing too much. As a result, people will have completely new needs and consumer habits. I believe there are developments ahead of us that we absolutely cannot yet foresee. This perspective 50 years ahead to the year 2073 seems extremely difficult to me. But I think what we can say is that the early twenties were the time when the old order began to fall apart and it became increasingly clear. Geopolitically with the departure of a clear world order with the Americans as the leading power, technologically with the ever-increasing role of Asia and its openness to new technologies. The Americans still have this, but they have extreme domestic political problems, so I don't believe that they will embrace technology as an entire society as much as the young societies in Southeast Asia or East Asia, for example, will. In this respect, I see the period of the tens and twenties as a turning point. And I believe that

the emergence of generative artificial intelligence was the spark that accelerated these developments even further. For me, it really is a Cambrian explosion that we are currently experiencing. And I am very surprised why we are not talking and discussing this much more openly. In the 70s of our century, today will be described as the beginning of a new era.

Interviewer

Lastly, I would ask you to do a self-assessment. I just sent you four categories in the Chat. Where would you categorize yourself?

Expert 15

I always find it a bit difficult to categorize myself. But when I look at the criteria here, I see that, firstly, I work in consulting and training to apply artificial intelligence in the insurance industry and, secondly, that I am currently completely transforming Flexperto's business model because we are going to use generative artificial intelligence to transcribe millions of advisory conversations between insurance advisors and end customers. With the help of artificial intelligence, we analyze the conversation in terms of customer orientation, quality of advice and compliance, but also in terms of sales efficiency. In the view of many external market observers, this is actually setting a new industry standard. In this respect, I would classify myself as a pioneer.

Name	**Expert 16 (E16)**
Categorization	Expert
Description	E16 is investor in early-stage startups and software engineer, with senior experience in venture building.

DISCLAIMER: Translated transcript – Original language: German

Interviewer

All right. Then we have that. Yes, so we're taking a look at the new topic of GenAI, which is currently very much in the hype, is somehow being presented as a cure for everything and it's super exciting and we want to take a look at it. Okay, we'll look at the technology behind it, we'll look at how GenAI can actually be used in the startup environment, in the early-stage founding startup environment? And to what extent does it help founders to create a more successful startup? Or does it even help to found a more successful startup? And precisely, above all in this early-stage area, where we actually have quite clear hurdles of somehow limited resources and perhaps also limited knowledge in certain areas. And in general, we want to take a look at how different people see the role of GenAI in founding successful start-ups. What is its role in the founding team in the early stage? And exactly, I saw that you, well, we talked briefly at XXX, because XXX had to do with startups, of course. On the technical side, I'm sure you've already been involved in this and also had some dealings here and there with investments, with early stage startups. And I would be interested to hear your views on this. Then maybe we can look at a few more use cases that we focus on and then reflect a little on that and a little on the outlook for the future. Exactly, so, yes, how do you generally see the role of genitive AI in early- stage founding teams when you think about it?

Expert 16

Yes, AI is basically on everyone's lips at the moment, and that is certainly justified. Basically, yes, with ChatGPT in particular, it has come up in the last twelve months. GenAI is a form of AI that is very customer-facing and is already beginning to affect many aspects of human life and working life. And that's why it's so hyped at the moment. AI already has a very long history.

And on the technical side, I think AI is a very exciting topic in general. And when it comes to what kind of start-ups I would invest in, I would theoretically always tend to favor technology providers that develop AI systems over those that use GenAI in their use case. Because that's just using tools. But these tools are definitely indispensable for every founder in my view. Even during the time I worked at XXX or afterwards, if I want to answer or discuss more complex questions, something like ChatGPT, for example, is extremely helpful in providing the initial structure, answering initial questions, acting creatively and when it comes to creating videos, images for a campaign or for something else or writing code for start-ups, GenAIss can also help to produce these at least a large part of the way. That doesn't prevent specialists from still having to exist in these areas at the moment. Both on the graphics side and on the coding side, there is currently still a need for a specialist who can do the fine-tuning, who can verify the validity of what has been put out there and nevertheless, all these tools increase productivity enormously in my view and that will be increasingly the case in the future. 50 percent faster with GenAI, in the future it will be 60 percent, then 70 percent, 80 percent. It will become faster and better and it will take over more and more aspects. And if I were to found a startup now, I would use GenAI to map a lot of aspects, depending on which aspect my startup focuses on.

Interviewer

Yes, exactly, okay. So in general, you see it as a kind of helper who can give you some direction, who can build something, but you wouldn't see it as a fully-fledged member of a founding team, let's just say, because it takes too much initiative on the part of founders to set the direction, right?

Expert 16

I'm currently struggling to find a case in which the founder is replaced by an AI in the current context. I do believe that every role that is needed in traditional start-ups will still be needed in the future. Perhaps not to the same extent. Maybe in certain areas you can do without one or two full-time founders and hire them part-time.

Perhaps one aspect that is traditionally seen in the founding team can be replaced by a mixture of a freelancer and an AI in the future. But so far, I haven't seen any case studies where this would make sense from my point of view. The current status, the current state of GenAI. But this will of course continue to develop over time... Exactly, and of course you don't know how it will develop.

For example, if you were to think about limitations or challenges that don't work well, do you think you can also ruin a lot if you focus too much on AI in general before we look at specific use cases? Do you think it's always a good idea to rely on AI in the start-up process?

AI helps to speed up certain aspects of a process or to take over tasks. This must always be in the context of different people who are involved and the processes must be designed in such a way that there is always a feedback loop. You can't rely on giving an AI an order and then having it carried out and sent directly to the customer. In my view, that would be negligent, but all these processes within a company have to be designed to ensure that the AI and its results are also contained or at least alone with what the founding team wants and envisions. In my view, there is no reason not to at least try out AI. But the processes must be designed in such a way that adjustments can be made at any time. To what extent you use which tool. This is also independent of AI. You should always be agile enough in your startup so that you can change processes, remove tools and add other tools. And in this startup context, AIs are simply one type of tool that can produce results. And that's why nobody should do without AI, but should think carefully about how to use it, which use cases really make sense for me. I think there is also a lot of This is a bit like the topic of blockchain a year and a half or two years ago. Everyone

who tried to get to grips with the topic of blockchain recognized blockchain as the solution to every problem. And it's the same today: anyone who wants to do anything first thinks about how I can use AI for it. But it actually has to work the other way around. You first have to think about what you want to do, how do you solve a problem, how do you offer a product or service to people. And are there aspects where existing AI tools or even a self-developed AI tool, because I have a large amount of data or something similar, can usefully help? And that's what the process step of integrating AI should actually be about.

Interviewer

Okay. Yes, I see. Yes, very interesting. I think we're focusing more on the role in the founding team, so to speak, as part of the master's thesis than, of course, what you've now also mentioned, that people often try to make everything AI-driven within the business model and, precisely, to use an AI as the core of the product and then actually also rely a lot on an API from OpenAI on the model. But I don't think that should be the focus right now, it should be more about the possibilities, the capabilities that a founder or a founding team has, so to speak, to take over the tasks, to make them easier, to improve them and so on. But yes, exactly, you've said a lot about that, which I find very exciting. And maybe we can then go further and perhaps look at specific use cases that you might already have in mind. We have identified four focus topics, because there are four of us and each of us is looking at them a bit like a use case. It's perfectly fine if you've said something to the effect that I've never done anything with it. Exactly, but that would be the task for a founding team, so to speak, ideation and conceptionalization, let's say, of the business model, yes, the beginning, somehow working out, okay, how, what do we do, how do we want to earn money and so on, what is our business plan, then on to MVP design, UI, UX design, so the, no, the experience, software development itself, especially now with a focus on digital startups and sales at the end, how do I get the product to the man. Or to the woman and

would say, maybe we start somehow with ideation, conceptionalization, if you can think of any use cases that you have seen or used yourself and if you can share something about how helpful that was or how to do it.

Expert 16

Yes, well, first of all, in general, the process you are describing is like ideation, it goes through a process. And there are various process steps within this process. And these can either be carried out by a human and the results devised or by an AI. And we've already done this in the past with Ideations by holding ideation workshops in the company where we worked together. And different teams then tried to write the best prompt to carry out an ideation. And there are different approaches, but the most promising one was to define the individual process steps that are necessary to get from the customer's briefing to a series of equipped ideas, so to speak, to define the individual process steps as precisely as possible and to give the individual process steps as task packages to the chat GPT, for example, while at the same time ensuring that creativity is enforced there by saying, for example, please use a set of different technologies and combine them with approaches that we typically use here for ideations, for example. I iterate over different versions and then at the end you have Yes, we then had a large list of different ideas for a customer that were also very creative. And this is also reflected in the other process steps or in the others, in conception, UI, UX, as you mentioned, software and others. Ultimately, operating AI tools is similar to programming software. You have to be able to break down the individual process steps into the individual work packages and then formulate them and get the right results back from the AI. From my point of view, this is basically similar to programming itself. Although programming is also one of the activities that AI can perform, so to speak. Yes, except that we're probably just programming in English or German now. Exactly. Exactly, just as it certainly makes sense for people to already have experience with Ideations to

evaluate whether what has ultimately come out of it, whether the frameworks that have been filled, for example, really correspond to the use case or best practices. Again, it is certainly helpful if someone has already had experience in the ideation area in the past. This is perhaps not quite as important as with programming in step 3, which you just mentioned. Here, you need someone who really has many years of experience to be able to judge whether what comes out of the code produced works, makes sense and has no side effects.

Interviewer

So would you say that the experience now in an ideation, so to speak, you can do less, I would say, wrong than, for example, in, well, you can do something wrong everywhere, but than now in high-skill things like programming. Or is that not comparable?

Expert 16

I would say that the more something cannot be true or false, the less important it is for a specialist to judge it, but you can simply look at it with common sense and say that it is a good, meaningful and coherent way of presenting an idea and explaining possible points. With code, it is simply more or less scientific, much more binary, whether it is right or wrong and whether it can have side effects or not. And at this stage, due to the high susceptibility to errors, it certainly makes sense to have a specialist looking at it. I assume that just as the current programming languages are the third or fourth abstraction layer of machine language, prompting via something like ChatGPT or Copilot or something similar will be the fifth or sixth layer, which really translates machines, really human language into machine code, so to speak, without the risk of many errors. And there will probably be a new profession that perhaps doesn't quite exist today. Technical product management is probably the closest thing to what supporters will have to do in the future. That's also what I've done in the past. I tried to describe

to developers exactly which functions the software should perform under certain conditions. I then had discussions with the developers because I hadn't specified everything exactly. And that's how it will be in the future, this kind of task writing will no longer be handed over to people, so to speak, but to the co-pilot or whatever the tool is to produce code.

Interviewer

Yes, that's exciting. So, while we're there, maybe we can go straight over to software engineering, where you've already said a few things about working more with text and taking on a kind of product manager role. Exactly, let's go back to that specifically, if I found a startup, let's ask, is it enough if I have, let's say, an understanding of what Yes, what I want to build somehow, or should I already have, let's say, senior experience in software engineering if I actually build such a product? So, in a nutshell, how much is this experience actually worth and what should the focus be?

Expert 16

So as a founder, of course, the more experience you have, the better it is in any case. Can someone who has no programming experience have a complex software product built using today's techniques? I don't know exactly. I don't think so. I don't think these technologies are mature enough yet. Without having your own experience in this area, you don't know what you don't know, what you don't have to tell the computer or what you have to tell the co-pilot, so to speak, for something to come out . You have to be very specific if you want to have a distributed system. You have to set up a server instance that runs certain things so that a client can access it or something similar. You can probably work that out a bit with Chat GPT, but I think that would be a very slow process. You would basically have to work out all the capabilities of the software, technology, hardware, the underlying hardware. And you could certainly do that with

Yes, ChatGPT, but it would be a very time- consuming process. Someone who is already technologically inclined and has done software development can certainly learn all these basics, which will help them to implement this very quickly, together with CoPilot.

Interviewer

Yes, yes, completely. And now, for example, you, as someone with a lot of experience in software engineering and so on, I think you can assess it quite well, if you were to go here now and found a startup, what would you say, where are the parts in software development where you say ChatGPT makes my life so much easier? What would you go straight to and say, I only need one more evening for that and I already have my solution? And where would you perhaps see points where you say I would definitely do that myself?

Expert 16

In terms of founding a startup or software development now?

Interviewer

We're not trying to explain software development in its entirety right now, but if we just look at it in terms of software development, but with a focus on bringing a product to market as quickly as possible...

Expert 16

The closer a product that you develop is to a standard product, the more likely it is that a currently available tool can help you to build an app that displays data and has a simple database behind it. This is all certainly something that can be implemented with no experience at all, but definitely with little experience. If it then becomes a more complex software-as-a-service

product, a platform that is very customized, that is not a standard product, it is probably all the more important that you understand what technical possibilities software offers you to build this complex product. I would say that's a bit of a cut-off point. Programming an app, displaying something from the database and giving the user input, maybe uploading a file, that's definitely something you can build without having to have a lot of technical experience. If you want to scale it up, you might be able to do it. But then it gets expensive. Then the default way is to set up several instances of AWS, for example, which then become very expensive very quickly. If you then want to achieve economies of scale again, perhaps because you really want to reach millions of users and don't want to afford this expensive solution, then you again need someone to build something custom. It is then helpful to bring back the specialist who can really make it scalable. At least at this point in time. But for MVP building of standard products or even the first, yes, the first version that doesn't yet need to scale, you can probably actually implement a large part of it with current tools.

Interviewer

Would you say that if we're talking about early-stage start-ups, we're probably starting with a codebase that is completely an empty folder? Does that make it easier to apply a kind of GenAI, to get on the road quickly, or would you say it's better to start with some kind of structure or with a product and then move on to the later stages of product development?

Expert 16

Yes, that's a question I can't really answer at the moment. I once thought about building an app and basically just using Copilot and other things and wanted to find out how well it works. It has to be said that I once studied computer science, but that was 15 years ago. So I could have done it in any case, the only question is that my focus was never on development, I never

enjoyed it and I didn't really want to do it myself. How much of what I don't want to do nowadays do I still have to do myself to actually build an app like this? I don't think you have to be able to do much yourself anymore and I think you can start with an empty codebase and you'll probably get results. Yes, I can well imagine that there will be a lot of inefficiency and confusion if you don't force either co-pilots or whatever kind of system to carry out refactoring on a regular basis. In other words, thinking about how you can simplify, improve and make it more efficient. That's basically a big aspect of software development that takes up a lot of space, that you always try to question whether what you've built can be read by someone else, whether someone else can understand it, whether there's a simple way to represent it, to build it, to make it scalable. And I can imagine that if you don't have this experience, don't know that you have to do something like this and just keep building it up using tools, that at some point it will no longer be maintainable, this codebase.

Interviewer

Okay. Yes, that's exciting. Looking at the time, I'd like to take a quick look at the other use cases, if you can think of anything, otherwise, because I don't think that's necessarily your focus, or, let's say, MVP, i.e. design, UI, UX and so on, can you think of anything, how you see the effects of GenAI with very limited resources, so to speak?

Expert 16

So, as far as the user experience is concerned, I can't think of much. As far as creating content and displaying it is concerned, I have already worked with a few tools, again in the context of our past work. Producing the components of a landing page, a website, for example, in Midjourney or other tools that you can tell very specifically which user should be addressed, what characteristics should be conveyed by this produced image, for example, what should be

shown there, which color code should be used and so on and so forth. All of this can be used. And then extremely good images are produced that hardly need any post-processing as long as they are static images. This was the example of a fictitious shoe store that we built, which was simply a bit colorful as a landing page and had a kind of sneaker in the middle of the picture, which basically looked a lot like a real sneaker, but couldn't be assigned to any real existing brand. Anyway, long story short. I think you can use things like that very well with Junior and other things. When it comes to the integration of functions and buttons, I have little experience. I can't say anything about how that would work, whether it would work well. Yes, but then again, you actually have a lot more speed to do something at a very manageable price. Yes, I think that's something that somehow always runs through many aspects when you talk about GenAI.

Interviewer

And then sales at the end. If I go here now and want to sell my product, can you think of anything?

Expert 16

So the approach to the customer can be written using GenAI, different derivatives or different versions of it can be produced, which can then be looked at to see which work better. And based on the better-performing variants, you can then create new versions, respond automatically to customer inquiries and customer requests with chatbots and the like. On the customer facing side. Basically, every time you set up a process yourself and you don't know exactly how to break it down, you can also ask ChatGPT, for example, how exactly does a sales person do sales? Then perhaps the GPT comes along and says that the first thing they do is produce a longlist and then qualify the individual people or companies that they write to. How do you

write to them? What tools do you use for this, for example? Do you use HubSpot or Salesforce or whatever? Or just an email tool to start with? And what are the next steps in the process? In other words, what do you actually do as a sales person? Und Sales ist aus meiner Sicht tatsächlich ein Aspekt, bei dem Fähigkeit auf der einen Seite und Kompensation auf der anderen Seite oder sagen wir es nicht so Fähigkeit, sondern Komplexität dessen, was man machen muss und Vergütung auf der anderen Seite schon aus meiner Sicht sehr stark auseinandergehen, denn Salesmenschen werden extrem gut vergütet, wenn sie extrem erfolgreich sind. It is nothing more than having internalized which attempts from the past have converted particularly well. And automating this is becoming increasingly important in many areas. And you can do this much faster with AI. And then you can map all these process steps and sales also has a high frustration tolerance, which is also part of the remuneration because you hear no so often. On the one hand, you can work on getting a "no" less often and a "yes" more often, because you can use different variations to find out how you need to structure the approach to convert better. On the other hand, there is a system that you set up in the backend, so to speak, which automatically makes this response. It doesn't get frustrated if it receives negative responses. In this respect, you can probably reduce one of the biggest cost items in your startup and increase your success rate on the sales side at the same time.

Interviewer

Okay. Yes, mega interesting. Really cool. Then, if we summarize this and try to understand how far you would go, because you always said, okay, I'll start first and give myself, so to speak, then give me ChatGPT, a structure, give me the tools with which I can do this and I always have this human component, I say, in it. And now you're already hearing, I don't know if you are, about autonomous AI agents that communicate with each other and assign tasks to each other, so to speak. I've heard that, it's not realistic right now, but do you see that in the

future? How realistic do you think it is? And would you somehow say that I see that in one or ten years? Or are you saying that this kind of interaction with Gen AI will always remain the same, that it's a kind of companion next to you?

Expert 16

Yes, good question. So this aspect is of course that it's always a companion, that's of course relevant for everyone and that's why this type of tool will last longer, but I also believe that there will always be deeper, yes, it probably needs deeper, integrations that either have to be implemented explicitly or where the AI is asked to link you to the following tool and make sure that when I tell you something, that in Monday or whatever, when I tell you that, that a task is actually created there or something. I can't quite see yet whether a lot of explicit work is necessary in the background. And that's one of the questions I asked myself when I was thinking about building the app myself, that I don't just want ChatGPT to tell me what I have to do, but how I can ensure that as many aspects of it as possible are made explicit. Of course, the problem arises at the latest when an action that is to be initiated by me involves another party. So, or have to prompt me to decide whether I'm really prepared to spend money. At the latest then, of course, I have to get back into the loop. And if another entity, a tool, wants to conclude a contract with me, then of course I have to get back into the loop. But at the moment, I think we're still just scratching the surface of what will be possible in the future, and I'm sure we won't just say integrate with a tool in Slack, but say integrate the tool in Slack and then it's simply integrated because it's already happening in the background. I might still have to, I might still be asked for certain information that I have to disclose so that it can happen, maybe some paint information, but everything that Yes, really linking the systems together, configuring API endpoints and setting parameters there, that will probably be abstracted away more and more in the future. That's my hope and that's what I'm assuming.

Interviewer

Okay, yes, very cool. Then maybe one more question. Exactly, if we now look at these four use cases. Can you think of other use cases where you might have said, that would actually be the use case I would have thought of and not the four, or would they be important use cases that could be left as they are in the area of startup founding?

Expert 16

Yes, I think there's a reason why these process steps are carried out one after the other in venture building. That makes sense from my point of view. Basically, when I think of AI, I tend to think of the real AI tools themselves, which are able to generate an output based on a current example or input on the basis of large amounts of data because they know the millions to billions of examples from the past. Be it a search function, an internet search, self-driving cars, which will probably be based on such systems in the future, and other things. I personally think of such systems more than I think of AI. And it often frustrates me when startups say they use AI and mean that they use AI tools. When I meet a startup that wants to pitch AI, I hope it's a technology startup that builds AI because they have a business case in which they can produce a classic flywheel because they can use data to offer a service that leads to more of this data being generated and thus this service getting better and better. And that's basically what I find most exciting, which of course would also be reflected in the ideation, if it can realistically come to that in a startup that you want to build. Otherwise, no, I don't have any.

Interviewer

Fits, fits. It was just a question of whether something obvious was perhaps, precisely, not seen. Otherwise, would you basically say, we've talked about it, in the future every startup has to

think about AI to have a chance? Or do you say, I have a team, I have the experience, I do it myself, I don't necessarily need the support now, we're talking about the support now, that business models outside of AI will probably still be there, I think that's clear. How important would you rate that?

Expert 16

Yes, I believe that everyone should familiarize themselves with AI and the tools and possibilities it offers. I assume that not using AI tools in the future is just as negligent as not using internet communication, because it is an extreme efficiency boost. But the more you work on an area that hasn't been worked on yet, the less relevant it is that you bring efficiency to your company. And for me, AI is primarily about increasing efficiency in this context. And you can also implement, realize and try out ideas without a lot of technology. But as soon as you want to scale, at the latest then, you have to become efficient. And in my view, you can only do that with automation, optimization and efficiency. And that's where AI, all the tools that make use of AI, are fundamental and necessary. You can start a business without having much of this expertise, but at the latest when competitors are doing something similar, then only the one who can best satisfy the needs of their customers will either get the highest margin or be the only one to survive. And those who then use death more inefficiently, not AI, not the internet, will most likely not last.

Interviewer

Yes, perhaps as a final question, if we look at, for example, okay, we now have five startups and they all use AI, use a lot of AI, because it increases efficiency a lot, but of course the AI, perhaps it's also the model on the line, is the same. And then the question is perhaps a little

provocative: what is the competitive advantage that a startup has compared to another startup, especially in the early stage, where a lot of fundamental decisions are made?

Expert 16

So theoretically, anyone with a drill can attach images and yet one person will take longer than another and it will be the same with AI tools. It either takes longer to get the result you want or you get a worse result in the same amount of time because you're not using the tools in the way they would work best because you're not writing the right prompts. And also, from my point of view, a startup, or hopefully most startups, are people who want to produce something new and not just reproduce something that has already existed in the past. And especially when it comes to producing something new, you can't rely solely on something that is already prefabricated, you have to see new ways of linking tools that weren't previously linked, applying approaches that weren't used in the past to the same problem, but with a different technology and so on and so forth. So in my view, entrepreneurship is characterized by the fact that you don't use what you have already used in the past in exactly the same way. Instead, a new permutation, a new technology that you apply to an old problem will continue to exist in the future. Only with the help of different tools than we use today. Namely with the help of AI tools.

Name	**Expert 17 (E17)**
Categorization	Pioneer
Description	Expert 17 is a builder of early stage companies in GenAI, blockchain, data infrastructure and fintech. He has currently co-founded an AI research lab focused on developing a multi-agent-system for autonomous AI-Agent collaboration in business tasks.

Interviewer

Yeah. Okay. Perfect. So I'd like to give you a quick introduction about what we are doing how this interview should look like and then we can just quickly Just Jump Right In. Yeah, so what we are doing I think we have this new topic of GenAI which is yeah really in the hype right now and we're analyzing like what this is on the technical side looking into different like coming from AI augmentation into AI Automation and so on. Analyzing this topic and looking at early stage startups, which usually struggle with kind of the same like different problems. But also same problems meaning limited resources for example, and looking into how GenAI can actually mitigate our help found it founding teams mitigate these problems based on some use cases that we're looking at.

Interviewer

So this is essentially what we are doing and I I found your video on all this one interview on YouTube. And also I think on LinkedIn sounds very promising as I think you're dealing yourself with and kind of early stage startup, which is Happens to also be involved in to finding and creating use cases for GenAI in a very Advanced Manner and this is where I think this will be very helpful to have a quick chat with you on this topic so far so clear.

Expert 17

Yeah, yeah me totally makes sense. Yep.

Interviewer

Okay, perfect. So quick introduction to this interview, we're doing qualitative research. Therefore. We have kind of a semi-structured. Let's say interview questionna that I'd like to work through with you like to get it like first general opinion about GenAI and the role in

founding teams and your idea about it. But then like to Deep dive into some use cases where we are looking specifically at the like first ideation and business model creation design software engineering and sales and then like to recap this and get some maybe future ideas from you. So that's fine with you. I would directly jump into this quick interview.

Expert 17

Yeah, sure.

Interviewer

Yeah, perfect. So maybe you could start and talk give some sentences about how you understand and use GenAI and what you think is the role of GenAI in early stage like in a founding funding team and the founding environment.

Expert 17

Yeah, maybe I could just I like to show this screen to people just so you get a clear picture of where we're playing and how we're looking at the world. Just you see a screen says a agents autonomous software.

Interviewer

Yeah.

Expert 17

So we're very focused on the AI agent space and essentially the way we think about AI agents is well first think about existing software where you essentially have if then statements right very oversimplification, but we have if then statements and the engineer has to have thought of

everything that potentially the application, you know needs to do or wants to do right, but when it comes to faces situations or environments that it doesn't it hasn't been precoded for it. It can't handle that right or if the data is. Structured in which in the way the software needs it can't deal with it, but With AI agents.

Expert 17

Now you have this new paradigm where you can actually Leverage The llm for reasoning capability to essentially take both deterministic and non-deterministic paths, or do those not determining non-deterministic actions, which we think is really powerful and the real step function gain of GenAI a lot of people have taken LMS and they want to chat with my company or chat with my PDF and that's that's obviously powerful. But we think this next level of for lack of a better word autonomous software is what gets really interesting where you're taking the llm you're using it to, you know decide what path to take to generate some sort of output and then create that output in a machine readable format like a Jason file, for example that you know, you can now deal with external systems or apis or external databases.

Expert 17

So that's where we've been focused.

Interviewer

Yeah, great, very interesting one general question I would have on this topic. I think what you're also doing. I mean we have the one agent individual agent and we also talking about multi-agent systems and I think you're a specifically deploying multi-agent systems that can interact with each other. And I've read some papers stating that it's like better in reasoning capability to have these let's say interactions with each other and more human-like Behavior. How have you

experienced the actual impact comparing the individual agent to maybe a multi-multy and what I may.

Expert 17

Yeah.

Interviewer

Be limitations of this kind of structure.

Expert 17

Yeah, so we initially started with a single agent. It's called why agents it's also open source, you can read up on it. But the idea of why agents was can we have an agent that can Code test debug and then deploy its own tooling which essentially an agent that can create other agents, but what we found pretty quickly is that it's mandate was too broad. Right and it ran into context window issues it ran into what we call Prompt saturation and it really just didn't work and it's not something you would use in production. So that's why we created what we call genworlds which is this open source framework for multi agent systems. And the idea is you get very narrowly focused like hyper focused agents that are really narrow and focused on a single task. And that's great.

Expert 17

But then you can't accomplish more complex things. So what you really need is this framework for these narrowly focused agents to work together and that is where we start to get. Like things that are actually working right where you can start relying on these AI agents in production, so and it's not just multiple agents, but it's also things like determining the right mix of

deterministic and non-deterministic tasks. Right? A lot of the other agentic applications that are out there. They have only non-deterministic tasks, right which means you're hitting the LM for everything and that's actually not the best thing to.

Interviewer

Yeah.

Expert 17

Do because there are certain tasks where you don't want this ambiguity, right? You don't want the LM to give you a hundred different responses for 100 different queries. There are certain things where you want deterministic like paths or actions, which we think of as objects. So like A calculator for example, like we all know LMS are not that great at math. Right, but we can have an agentic system where the agent hits a programmed calculator for something right and then hits the LM for you know, maybe it's hey, llm. Should I be doing a calculation here? Okay. Yes, then I hit the object. That's the calculator do the calculation.

Expert 17

Now I have that calculated answer and now I hit the LM for a generated response and you know, maybe it's an email or maybe it's some Sort of code that needs to use that calculation or something like that. Right? And and that's how we've been coming at it.

Interviewer

Mmm Yeah, so essentially this would be then this gen World in your case are generally speaking these these multi-agent systems would be kind of an outsourced sort of let's say employees. Would you would you go so far saying.

Expert 17

Yeah, I would say.

Interviewer

This these are employees.

Expert 17

I mean, this is like how we see the world like to be clear, you know where we're not here yet. I'll just show you the slide but.

Interviewer

Yeah, okay.

Expert 17

Where you know, we're highly convicted. This is what the future is gonna look like whether it's through genworlds, which we hope but somehow we see that companies are going to be made up of teams of humans and AI agents in every function of the company. And these AI agents are going to need to work together both within the function like for example marketing, but also cross functionally right intraction. So We think like a company's marketing team or even an outsourced marketing agency. It's gonna be made up of an agent who's really good at like SEO an agent who's really good at like Google adword campaigns an agent that's really good at socials posting and so on and so forth, right and.

Expert 17

These agents are going to need to work together to come up with the best overall marketing strategy, but also they're gonna need to work with the product. Who just created some product and you know needs to explain the differentiating factors of that product and then these worlds are going to need to work. Well with the sales World which is going to actually be doing Outreach, right? And you know, when you break down these like little tasks especially like sales is really easy to visualize like there's a lot of these tests that are going on in cells that Canon will be automated and there's already lots of firms out there trying to automate it.

Expert 17

But if you've ever used any of them, they're like pretty clunky right and part of that is because You know like LinkedIn doesn't necessarily want you using Bots across the LinkedIn platform to do sales. Right but you know that then people.

Interviewer

Yeah.

Expert 17

Build their workarounds whatever but this is all stuff that we're fairly certain that AI agents like and it's not just using gen AI to create a response like to like generate a message to somebody but it's like using GenAI to understand that person's background understand the context of your relationship with them and create like way more of a human like response than just like, I'm at this company X and I'm selling to you company why you know draft the message, right? And that's what a lot of it is right now, but you know this that changes is definitely coming right because you know, the other thing is I want agents, you know for in

the sales context. I want an agent to be able to track you like if I need to sell something to you.

Expert 17

I want to know everything you've ever done off LinkedIn on LinkedIn you've posted about or you wrote an article or your company has some news, right and I want the agent to not only give me an update on that news, but also tell me okay, it's time to reach out and here's how I'd reach out right? It's hyper tailored. Right and it's not just it's not this ping pong of Go do this and then it would like, you know, I I give you a command and you return answer or something. It's more like proactive. It's autonomous. It's out there understanding my strategy and coming to me with here's who we should Target. Here's what we should say. Like, that's how we're thinking about it. That makes sense.

Interviewer

So yeah hundred percent so maybe to better understand or maybe deep to have a bit into this the sales topic because you already said it I think really thank you for the overview of how you understand it. What would you say how far are we right now into having this autonomous sales team where from my understanding what I just understood from you. You would have the specific agents then probably the one doing lead generation, for example at the wondering research background research and so on and what could be limiting factors that could could maybe stop this.

Expert 17

Yeah, so.

Interviewer

From becoming reality?

Expert 17

We're not working on it specifically, but I've talked to people in the.

Interviewer

Okay, yeah.

Expert 17

Space and I know a lot of people are working on like it's almost like a personal CRM is how they kind of think about it or like indexing across your relationship Network, right and that essentially means Gathering data from you know, telegram WhatsApp LinkedIn like your own like your company CRM, all right and trying to like use GenAI to understand that index and that Network and so that you can do some of the things that I'm saying now, I think and to be clear we're not working on this but I think some of the blockers come within this like depending on the industry.

Expert 17

You have communication that's like through your company which is like email right or maybe slack but then you also have like a text or a WhatsApp or a telegram or signal right or you know, even a LinkedIn message, right? That's my personal thing. That's not the companies and it's this blending of personal data and Company data that I think is somewhat of a barrier right now like to really get these AI applications good and you know, someone will figure out no one

has one of the things that Though we have done a fair, you know amount of work on where it's working is. Are you familiar with rag? Rag.

Interviewer

Yeah, retrieval augmented generation.

Expert 17

Yeah. Yeah, so that's like pretty clear.

Interviewer

Yeah, yeah.

Expert 17

That's a big part of the whole GenAI like system. And so we have agents that are able to like parse documents put it in different data structures, you know do that quite efficiently keep these data structures clean and then In one application we've built coursework on like very dense complex material. So an agent does the rag then an agent builds a course on top of it and then there's a Q&A agent that's hitting the rag to like give the best types of responses and then you know, the idea is that you have agents continuing to do research or work on whatever that topic is. So you're just getting this course even more and more robust that if that makes sense.

Interviewer

Hundred percent. Yeah, very interesting. I think we could also a deep-dive an hour longer into sales. But to cut this short to automate get some other use cases maybe we could go into the use case of software engineering. I think there was also similar tool called chat deaf with which is

not kind of a very generalistic one. But how is your experience with software engineering at which point are we there? What is the let's say the role of Jared to say I and maybe autonomous. Agents in software generation,

Expert 17

Yeah. I I think it's yeah, it's huge.

Interviewer

Especially with.

Expert 17

I I to be honest like our and clear. I'm not an engineer. So it's not like I have that first.

Interviewer

Yeah.

Expert 17

Hand, you knowledge of it I you know, but I know in talking to the Team, you know, we are very serious about the fact like and I'll tell you the downstream effect of this which is We don't see ourselves needing to raise tons and tons of capital to go build out these like huge engineering teams. Right? And and the part of the reason is that we think we can use GenAI to do a lot of engineering like and it's more junior level engineering from what I understand, right? You still need like Architects to. Like really build a unique senior people to figure it out, but I don't think you need armies of software Engineers, you know, at least we don't feel like we do, you know, and listen it's still early right and we're still kind of seeing how this works.

Expert 17

But so far we've been able to do you know quite a bit using general and you know from an agent perspect. If it's like the way we think about is like you have the agent very clued into what we're doing what we're building. But also like a, you know, quote unquote trained engineer that can help you think through like the next part of the build right like and the more you have that agent. Understanding what it is you're trying to do with this expertise encoding the better and better it will become but that's that's not something we've like actually built out just yet. But in terms of just normal builds, yes, they're using general of AI quite a bit.

Interviewer

Yeah, yeah. So how big of an impact would you say? This would have into a company that like, let's say pre-GenAI you're trying to build a software company and you may be don't really have an idea of software engineering into the like lowering of Entry barriers to this whole software world like right now and is it is it really making you making more startups successful or you think it's still like the let's say success rate or yeah failure rate will be.

Expert 17

I don't know from what I from what I understand like I don't think it's disrupted too many like positions right like that hasn't happened in a big way yet, like from what I see. But I can I'd be willing to bet into the next. I don't know three to five years. Again, like I'm not as familiar with software engineering per se but if I look at other let's call it.

Interviewer

Oh, yeah.

Expert 17

White collar work right where like let's say legal, right or banking or audit right? And you know in these industries you have like massive hiring of entry-level people, right and you have like big Junior workforces, especially like in legal where it's all like language based the need for that Junior type of talent is going to be less and less right and this is actually something I I've been thinking about what the ultimate effects of this are because You're going to have like and you know, I do think.

Expert 17

There will be other things we figure out for people to do but like in these spaces the need for at least the work that's done now by entry-level like lawyers, for example, a lot of that is going to be done with GenAI like I have no doubt about that and It so then what happens is these big law firms are just most law firms. They will hire less Junior people right and you know play that out over a longer term. Now, you're gonna get to a situation 15 20 years out. However long it takes but the very senior people Well, you will still need very senior people with experience that can make decisions, but you won't have them because you've just gone through this period of time where you had, you know, no Junior Talent, right?

Expert 17

You know, if that's the way this shakes out, but you know, you think about like and we're even building something in the VC space where we get agents doing the work of entry-level analysts or Associates because a lot of times like In these scenarios, you're hiring people that have no experience and what it is you're doing. And so You know, it's by its nature. It's very like repeatable programmatic work that you need, you know a level of intelligence, but you know,

you obviously don't need to be an expert because you've you haven't been doing it or you've been doing for a year or two years, right? So that by its nature tends to be.

Interviewer

Yeah.

Expert 17

Stuff that like is Taylor Made for GenAI, you know.

Interviewer

Yeah a hundred percent.

Expert 17

But but also I can tell you one thing that's like very actual like very tangible and like it almost feels so easy at this point, but like when you're a startup and you need a logo right for either your company or product that used to at least cost, you know a few thousand dollars I.

Interviewer

Yeah.

Expert 17

Could do that in two seconds now with these you know, or you know, maybe I sit down for an hour or you know, 30 minutes whatever it takes but like I could pump out logos really quickly right that's a very tangible like thing that I'm sure people who create logos for startups our word about.

Interviewer

Yeah. Sure, sure, but maybe then taking a broader perspective again. How do you see the competitive Dynamics changing if you're talking really about a lot of democratization of knowledge of skills, really? Yeah, everybody can do this and I can probably buy a sales team and virtual sales team and so on. I mean, this is I mean, we're right now already from what you said very close to but probably in the near future at the point. What what will be a good startup What will be how will start up.

Expert 17

Yeah, you know it's it.

Interviewer

Be competitive?

Expert 17

It's it's gonna be interesting right because though a lot of the value is going to accrue to because this all Based on data, right so it's like what's gonna happen is there's gonna be lots of value to people who are sitting on proprietary data that people want to get their hands on right? And so then it becomes like are you as a startup who can convince a bigger company organization that's sitting on all this data that you can build something that they can't but like on their data, right? Do you know? A combination of their field so well and how to use GenAI technology. That you can build something really great for them.

Expert 17

Right and that's what I think is gonna happen because you're still in this phase right now where There's not that many people out there who are like highly proficient and expert in GenAI like really expert in it. Right? Not just someone who could build an API on top of GPT, but like someone who could build a real robust system. There's not that many people could do it. So it like these big companies they build AI engineering teams, but like How much experience those AI Engineers have right like maybe you know, it's like who has the experience not that many people so they're sending on all the data but they're also need help building whatever it is.

Expert 17

They want to build right and Yeah, I don't know but here's the other thing which I could see playing out which is because it becomes so easy. Like let's just take coding. For example, like it's extremely easy to build out software. So I think what you're gonna have is a lot of like disruption in vertical SAS where I could come I could build some software and maybe it's like 50% as good as what's in the market but I could drop the price by 80% because I'm using you know GenAI and not humans to like build things.

Expert 17

And then I I, you know, I so I cut prices industry and then that forces that sass company that's in trenched to build out some sort of generative value and cut their price right like so I could see disruption like that happening in a big way because I think it'll be very easy to build like just good enough products to disrupt an industry with really low price if that does that make sense.

Interviewer

Yeah Yeah a hundred percent very very interesting next question because we're running a bit

out of time we talked about some use cases right now do you see other use cases that Me Maybe didn't touch upon maybe just to name them then In especially in kind of this founding startup world. Yeah. It's disruptive.

Expert 17

Yeah, I mean, I think we we like hit on a lot of them. A lot of the common denominator is.

Interviewer

Yeah, we did.

Expert 17

Like lots of data completely unstructured coming at you. How do you like? Clean it get it in a way you can use it and then like draw inferences or take action upon that yeah, I guess. I think there's like a fair bit that will get done on the like negotiation side. Where You have like past contracts. You're getting some sort of like. News or some sort of data points on what's going on within the market right? Whether that's from your salespeople. It's it's unstructured or some articles, whatever and I think you'll wind up with like a lot of like AI generated negotiation which then means like Yeah, I don't know what that means because you're gonna have that on both sides. Like what I don't know where that.

Name	Expert 18 (E18)
Categorization	Advanced Proficient
Description	Expert 18 is founder of the media agency Anagkazo which offers blog and newsletter management services to individuals and companies. He is also a software engineer at the Danske Bank

Interviewer

From my side we can start directly I found some of your articles and medium and then when the LinkedIn so that you seem to have found it. Yeah small media agency. You have some experience in software development and I thought would be very interesting for our research to speak with you quickly. Yeah again, what we are doing is to understand. Okay. There is a big hype behind GenAI everybody is using it to GPT. Probably other tools won't be anything any news for you and we.

Interviewer

Are trying to see okay for Founders that are trying to found a startup right now is this maybe just a small help or limitation or is it really? Yeah changing the way Founders can Coach building startups from ideation to designing prototypes doing being a software engineer and so on.

Interviewer

And there because it's such a new topic. It's very important to get some experiences of people really using it. So, yeah, first of all, the question would be have you ever used check GPS like a GenAI it's actually Beauty in any of the areas meaning ideating. Meaning designing something software.

Expert 18

Every single day.

Interviewer

Engineering or even selling? Yeah sales.

Expert 18

Every single day on every single thing

Interviewer

Every single day. Yeah, so very interesting. So how have you implemented? Maybe you can just quickly broadly how you have implemented inside these areas?

Expert 18

Okay. Yeah. Sure. Well, mainly what I do mainly now is writing and with writing I many times need maybe a fresh perspective on something or maybe writing something is different voice or trying to understand. So for instance just if I jumped on the call, I was trying to design a course and I was trying to one question. I always ask myself is what's the value of this? So one of the things that I actually had to go see a kind of Trinity detail in it or these are departments that I need what kind of values you think that this would give an entrepreneur trying to understand how to build an MVP or something like that. So often use it for stuff like that getting a fresh perspective. From from the year and things like that on the sales side.

Expert 18

It takes a bit more work. But I find that you can generate massive tones and other ideas that you can filter through yourself and sometimes use it for copy work which makes it easy to just ask it to generate 50 ideas and then it look through it. Oh, that's probably and then you say okay now right in the voice of it presenter on archetype or somebody that's telling the story and there's you can give me specific Frameworks like maybe something like the payoff and the progress or something like the Euros Journey or ghosts wakes up goes to some problems grocery certain challenges finally get to Point waves. He has victory From like that, and then he basically writes that form. So I really use it for writing right now, of course with my programming job.

Expert 18

What I mainly do is I ask it basic ideas on what I'm trying to view this. Give me a puller Point Step by Step list of how I would feel this. What should I go about in building this? Oh, I don't understand this concept in programming quite. Well, I need to use it to do the project. Could you explain it to better? Oh, I still don't understand what you're saying. Could you break it down a bit more than you know, so just basically things that I use it around for, you know, of course if I have errors in my code or something like that. I can't figure out sometimes I put it in sometimes it's not enough to get it. Sometimes it's too dark. Okay, so depends on how things yeah.

Interviewer

Okay. Yeah understand. So you use it a lot as a kind of body to. Whatever you think of to just yeah,

Expert 18

You can't do that yet?

Interviewer

Yes. Yeah, so this would then also probably imply that in all of these real you would say it is a good help for you, but you still have to have a certain amount of knowledge right and certain amount of experience and only.

Interviewer

Then you would need to only then it would be a good idea to use it or how would you see it? If anybody would go into yeah getting some quality content without really having an idea.

Expert 18

Well, what I believe is I mean, it's one of two things inside out. You have the knowledge before and or you're ready to do the work to verify the knowledge of AI gives you. But this is really better to have at least in basic level of knowledge because when the AI gives you certain things, of course, you could go after and then check these actually makes sense. But the thing with maybe especially something like selling to people is it's not always that why I have the right answer. It's more of how can I connect to people AI can necessarily do that, you know, so if it gives you all the facts the fact is not the facts.

Expert 18

I'm not going to help you sell your products, you know, so you still need to be able to what we can I connect this products this person's pain and things like that. And so if it's not something that you have inside about so the regular founder things. Oh, I'm just gonna be the wonderful product and the customers is going to fight which is not the case. They usually thinking this is a specific type of thing that I want. So if you do something really a doctor stick it up, You or I

don't like this part of the product why I really like this part of the product, but I want more of this and then you begin to do that. So you mean it's the same thing, you know, so you're going to AI you tell it's to you to give you certain insights.

Expert 18

It gives you those insights and if you just put that into your products, I mean, it doesn't mean that people necessarily want that but the idea is that you are getting feedback and then you can feel oh, these are some of the things that my customer said, how can I do this? How can I do that? So I would say it might not be the only way that you have the knowledge before and you can also research after the fact but it is usually the best because you have at least some industry knowledge into whatever it is that sure that you're researching here.

Interviewer

Okay. Yeah exactly. So being to able to really reevaluate what you get from the AI. Okay, perfect.

Expert 18

Yeah. Yeah.

Interviewer

So that really gives me a good basic perspective overarching perspective of how you see the topic. Maybe we can then Deep dive a bit into the focus areas. So so I can maybe better understand maybe starting with ideation. I think you talked a lot about ideation. I think also you can maybe quickly say what you do maybe with your media agency concerning ideation there and maybe then just maybe give me an idea or comparison of how you feel like your ideation

maybe was pretty like without using GenAI and how it now like impacted your ideation process in positive and negative. Is Maybe.

Expert 18

Mmm, okay. So well, I guess the positive is the most obvious and the most obviously really is just that it has more information that I do. It has more thinking capacity that I do at it that I want City and I usually like to get things done faster than slower. So this means essentially that tick for instance we thinking about and so for instance you in right? And also we think about writing as the start of really, you know, so we write maybe a bunch of content like hundred articles or something like that and then I begin to see where is my other audience gravitating towards? Oh, there's gravitating towards MVP development and stuff like that. Cool. Okay. So now I need to write more contact than everybody development to build an audience.

Expert 18

What I would really do in that kind of scenario free AI needs, you know, just sit down and then think of maybe 100 different fields, maybe iot then. Okay MVP and iot, okay. Now let's think of how to develop entity for iot devices. Let's develop think about to develop MVP for Mobile Solutions and things like that all other I get people to like earlier doctors to get there. So you basically the idea is you sit down and you're trying to figure out things to yourself in this kind of scenario. I can get in the same things that I would usually think about myself those same balance of Frameworks. I'll just put it into the AI and it's 100 ideas on what more contact I could write about MVP development for instance and then it gives me like 100. Okay cool.

Expert 18

That one doesn't make sense. I don't have enough expertise for that. I don't know something like that. And then I create once that makes And then oh generate an outline. Sense. Basically the idea is mix work faster. It's not actually smarter than individual in their own to me. Of course you have access to more information and then some of that I could benefit from but and basically saves me time for researching. Googling and Googling are trying to find the right page and things like that by having all the information in one place and more like somebody that cannot be conversation with negatively. Well personally I try to not allowed do much damage to me.

Expert 18

I still I think where I feel like the negatives come in is where people rely on the AI completely and you see a lot of AI written content and you can ultimately know that because this is here anything content because it's. So bad and it's not in any value and it's pretty dry and things like that. But where what I do is I read through it. I'm like no no. No you always that doesn't make any. Says, you know, and then I'm like, okay, so do it right on that based on this parameters and things like that. So I still do much of the thinking it's more. It's just more like an extension of my own mind. So I can't say that I can pinpoint negative scenarios in my own life, but I could say that those are possible negative scenarios are gonna do much more thinking for you because it really can't do much more just thinking I mean literally I just don't understand what they're doing or saying that just predicting the next possible characters or something like that, you know, so yeah.

Interviewer

Okay. Okay. Yeah, no, very interesting. So let me think. Yeah, exactly. So this is what I was

about. So let's maybe then move quickly over to software engineering because I think what you just said, I. Think of course all has implications on every certain aspect. Yeah, but then maybe going more into.

Interviewer

Into the software engineering path thinking also about Founders that want to maybe found something in software engineering Or have Adventure there and so on and you're there is a lot of yeah, like text to code AI is going on and AI is that I really taught to produce code and also and so on. I think you touched already upon earlier on how you would use it inside there. But what what part would you say has been most impacted when designing software through GenAI in your in your area.

Expert 18

Okay. Well two things one of them is ease of research much of what I still do are working research, you know, so yes, the technologies that I've never used before and the bank is like that's the best one or that's what we're going with. So even though you've never used in your life. You have to learn it and I have to learn it. You know that if you are so implementing it the Research is number one. Number two is basically creating an outline now that cuts across everything. But but the idea that I want to create. Oh, I want to create a chart to particular. And I'm like, okay, so give me step by step what I'm supposed to do. And this is okay. You have to get a luncheon model. You have to get the authentication stuff like that.

Expert 18

You have to do the front end. Oh, you should consider using this front-end stock. If you consider using this back and stand this is where you should post something give me steps. I'm like, okay.

Okay. So let's go with step one. What do I what do I need to do is step one. I'm basically it's more or less just like something that I can also verify but at the same time, I don't have to do too much of the mental work. But of course we have good generation also which make my work faster because what I have to do is be able to think I'm very fight that what is giving me is useful or is actually not for me what I need to do.

Expert 18

And so it makes it work much more facts faster introduces my own mental work by being able to just see those.

Interviewer

But then would you say if you maybe. Relied too much on the AI and like let's say the stack that it's that it proposes or the kind of software architecture what you talked about that it proposes to build up and then you really hang on to this because of course there are many different approaches. Let's say to come to the same point but maybe some approaches are better or worse. You think there are some limitations or maybe some negative impacts that could lead to if you give up too. Of the thinking on that part or how do you see that point?

Expert 18

Where many depends really if you're building a an MPT? I lived here. I can get you like you don't You MP3 in 3 days that would increase that much of a problem. If you're building within an organization like a bank you bet with their not only good they're not gonna allow you to certain things, you know, so that they're gonna be business requirements and things like that. So you have to align requirements. So I mean, it depends on what you want now, so people I feel like oh, but you won't know exactly everything and things like that, but I say, Make sure

that I just go back the fact that make sure you're bi is not with all the thinking for you like everything the AI brings out you still very fine, you know, so I would say that it might not necessarily be.

Expert 18

The bad thing but of course you can fall into certain mistakes, but mistakes are many times very obvious. Where you program. I mean where you write something maybe yeah gives you the code. I mean their situations where I'm like right it's fine. It's just the an ATM or something. Please give me the code at any gives me the code. That's right. But in doing something say for instance, I have to write and RSC are going with him or something like that. Now I would probably write to myself doing some more research even using here, but I would or maybe I just asking generally this part of the might or the function or something like that, but instead of doing saying just right the whole program.

Expert 18

I usually doesn't work with AI Not as smart as we drink it is, you know so we can just ask you to bring it out. So I feel like of course there can be problems. But for the most part you might not really matter, especially what I do, you know, so complete Reliance is always bad it you will get results that are not the best but results that are not interested on your field. If you're an MVP development results are not the best it's not the worst thing you could do. Your product is pretty probation. Anyways, you know, but if you're writing code for an organization like a bank you are probably not going to pass. Well the reviews that you're going to get so and you're gonna go back and have to write it.

Expert 18

So I feel like it depends on the situation, you know. In some situations you can be free.

Expert 18

And just go forward in some situations. You can invest a bit more in understand what the AI is giving me, right?

Interviewer

So for early rapid prototyping let's say this is a really good thing, but then let's say Seeing an early stage founder he builds a prototype using yeah using Ai and then maybe moving into more of the scaling phase. You see problems there probably with what you started off with what they I proposed or you think it will be not much of a problem to Pivot over to much more scalable. Let's say code base or.

Expert 18

No, actually no. One of the devices I and I mean everybody in the industry gives people startups Founders is do things that don't scale. You know, so I mean the idea I think. Everybody gets stuck on the idea that oh, I want to build things that you know by the time I get it's gonna skill. Well, even if you do that spark, you're not going to scale because you don't fully understand it demands of the product yet. Number one number two, and this is I think even program popular investor said this, you know, so the idea you do things. I don't skill so people like strike for instance.

Expert 18

We're still using Google forms to take orders for processing fire and transactions and manually doing it by themselves writing up Finance forms and taking it to the bank many people who are still adding users to their data. This is manually, you know, just right SQL and I think you did

so you do a lot of things. I don't scale anyways at the start. I think Facebook actually, yeah to write like a program to transparency code to like PHP or something after they had got into certain level. So really rights are fine. Yeah many companies that did completely rights of your system after I decided so It doesn't really matter that much. But when you're rapid prototyping mode, yeah, I speak to the way to go get you there faster.

Interviewer

Okay. Yeah interesting then maybe combining this software engineering part with the design part. That is a oftentimes there was I think historically very split you had UI ux design and software Engineers implementing this we seeing a lot of no codes AI tools. Let's say coming up. How do you see how do you see this whole part maybe blurring the line between design and software engineering and also in terms of scalability then again?

Expert 18

Okay. Well again, I mean no code tools are awesome. You know, there's a level that you can get you to and for knuckle 12 for AI tools, you know, where your rapid prototyping please get where you need to get to as fast as you can get there, you know putting an entity in front of people put an MVP in front of these stores, you know, but. I would say that I don't think he.

Expert 18

Keeps that much problems. We write that we write a pretty common in the industrial into the second level of skill. When you start no code is fine. I feel the problems with no code can be that you know, sometimes people can neglect and thinking with AI people can neglect the proper processes of building a startup maybe get your feedback from customers. I'm just kind of things and they're just Beauties features and Beauty features that nobody wants to use those

are no important that can be a downfall, you know, but in most cases if you are Binding the speed and basically the speed that local and AI grants you and you're combining that with following the normal. Well the best MP3 practices sort of practices. We only good path. You can write your code base Twitter, so probably.

Interviewer

Okay. Yeah. Yeah, very interesting. So would you then say if you were to evaluate the skills the founder needs to build up a software based product. Let's say have dropped now. Or is it just mainly would you say the speed in which this let's say digital product can be developed that change but the skills needed inside of founding team remained. Yeah similar.

Expert 18

I would say excuse me similar. Actually, I mean well, if you bring.

Expert 18

No code into it, then of course some.

Expert 18

Skills can be done away with yeah, but if you just talking about AI the skills are still more or less, you know, maybe you could find somebody that you eat less competence to do the work like maybe programming things up, but I wouldn't say still the best approach because even though it's an mvpn. We all know that's not going to be the best and it's not going to work properly and it's going to break down even when you're presenting it which is fine at the same

time. I feel you at least somebody that I'll still be able to understand what he is giving back today if you have That can understand the code all the ideas that he has given back to them. I think that's more than enough.

Expert 18

So maybe some level it brings it down a notch, but if you have no coding and it brings it down a lot because now you can easily just remember start bubble or something like that at your front end back and the matter of hours and you're good. So depends on which your company yeah.

Interviewer

Mmm, okay. Yeah interesting, but you would say still software Engineers will writing code will play a role or would can you give everything let's say to no code?

Expert 18

Nope you I mean at the start there's a lot of solutions that you can easily get with no code, you know, there's even stuff with API where you can play game because apis into something like bubble. I think you know, so no code can go pretty far and it's fine for he is a startup for instance. I just give you something and work. It's fine for many products, you know, but then when you start when you get to the point where you want to start Skilling you will probably throw away a lot of local because you want to build in our Solutions at that point some you might not be like go with them. Sorry, you know, so.

Interviewer

Okay. Yeah, just one last question in this bucket before moving on just to clarify. So about the quality would do you feel through AI I mean, we already covered that you're much faster. Do

you feel like a better developer especially? Yeah in designing in designing things or how does this impact?

Expert 18

I didn't get the question well.

Interviewer

If you if you are a better developer now with AI.

Expert 18

It's the same thing with every developer when we start out, you know, so one of the things to tell us is okay. Yeah, it's fine for you to copy code from tutorials. When you start out where you get a setting point. You should be understanding. Why does that could work that way, you know for you to be able to build more solutions because what were you for sleep to solve problems or just like cool, you know, so in the same way with AI what AI is there for is not just spit out good for you to copy and peace the idea is that are you using it to understand this Concepts?

Expert 18

Because ultimately can you solve problems in the long run so it can make you better developer if you use it in that way, but if you just copy code, of course, you're not going to become better.

Interviewer

Yeah, yeah, okay. Okay, perfect. So then maybe just if you have do you have five minutes more so we can.

Expert **18**

Maybe maybe okay. Yeah. Yeah five.

Interviewer

Okay. Okay. Yeah perfect so I can just touch upon one thing and then so talking about sales. I think this also is a lot about you said copywriting and ideation which sales activities specifically would Say it uplifted your your skills or your efficiency, or did it?

Expert 18

Well, so for me mainly what I use it for is understanding certain Concepts in sales, you know, so I've only a bunch of newsletter. So I feel like psychology of marketing and things like that much of sales is psychology understanding how people think you know, AI doesn't understand that now but I can ask. Oh there's a paper that was written by and I don't remember the name of the people.

Expert 18

I was eating by the people talk about this and then you can come in the name of people and then I can go search the people so mainly what I use AI for as many research not really giving me what right now I can give tell it to write me a rough draft and then modified based on my own ideas, but then ultimately I still do a read through edit each read it out to myself again boiling down into the actual message that I want to pass across. So yeah, I wouldn't say you can't share don't think you can write good cooking with Of AI well so far.

Expert 18

You'd have to do a lot of work to get it where you want it to be. Yeah.

Interviewer

Still limitations. Yeah, definitely understand. Yeah, so let's conclude everything we talked about. I think we talked about Aviation MVP design software development say it's a copyrighting you said, is there I think do you think there are any areas we didn't touch upon where Are in founding process of a startup Jhene Aiken really help you.

Expert 18

I guess in you know in getting an audience for instance like building an audience for a product and things like that. You can use it mainly with research really psychographics of it to buy demographics people buy your product and things like that, but maybe serious research tell me that people that person Road or tell me that article that person wrote How what are the idea maybe? I have this post that I wrote on medium already. Can you draw out five points for it? And then I'll just post that on my Twitter my LinkedIn or something like that. Oh, can you summarize this old article into five or three points? But I can post you know, so in getting an audience. Yeah, but much more than that. I don't think that much more than a I just remember of my right. Bigger. Yeah.

Interviewer

Okay, perfect. So last question overarching how would you say or how would you think maybe fast forward in 50 years when we look back? Okay, there was coming this AI. How did it how did it transform? What would be in the history books? Let's say of or in teaching books of how transformed building up startups. Yeah in yes. I.

Expert 18

Oh, I expect that in 50 and 50 years. You'll be able to build start of your mind. I'm joking, but also not joking but.

Expert 18

Like you the speed to building it with faster for one reason because your thoughts can become reality much faster another reason because you can't you can do multiple experiments at the same time. So someone that's right. So because you can do multiple experiments at the same time number one and number two because the speed to see your thoughts become reality because very much more faster. I feel that would that would definitely be the books by 50 years. I mean 50 years is quite far maybe even 15 or 10 years.