

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



EDU-CLOUD: AN ENTREPRENEURIAL CASE STUDY ON HYBRID
ORGANIZATIONS AND HOW TO BRIDGE THE NON- AND FOR-PROFIT DIVIDE

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16th December 2022

ABSTRACT

ESG (environmental, social, and governmental) criteria have gained substantial prominence over recent years and are increasingly becoming a key pillar of a company's business strategy. Simultaneously, so-called "hybrid organizations" have evolved, which combine economic success with societal and economic impact, thereby blurring the line between the traditional private, public, and non-profit sectors. Based on the mission of edu-cloud – a German Education Tech startup currently run as a non-profit – this thesis presents a case study on how the non- and for-profit divide can be bridged. It provides a business plan laying out how edu-cloud can become a self-sustained business while accomplishing its non-profit mission to create new chances via contemporary education.

Keywords: Entrepreneurship, Social Entrepreneurship, Startups, Hybrid Organizations, Business Plan, Education Technology

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

1. Introduction

1.1. Business Problem and Relevance

Across geographies, industries, and company sizes, organizations are increasingly allocating more and more resources towards improving their ESG – environmental, social, and governance – footprint (Pérez et al. 2022). Closely related thereto, new forms of organizations have evolved, increasingly blurring boundaries between the public, private, and non-profit sectors. Those so-called “hybrid organizations” demonstrate ways to compete on not only the quality of goods and services but also their positive societal and environmental impact. Built on the assertion neither traditional for- nor non-profit models appropriately address current environmental and social challenges, hybrid organizations adopt a non-profit mission while generating income like for-profits to accomplish this mission without being solely reliant on grants and donations (Doherty, Haugh, and Lyon 2014; Haigh and Hoffman 2011).

This master thesis comprises a case study on how hybrid organizations can exist on either side of the non- and for-profit divide by shedding light on the mission and business model of edu-cloud. edu-cloud was founded by Verena Pausder and Louisa Strasser and provides a platform for browsing and finding digital educational tools. It currently runs as a project of the German non-profit organization Digitale Bildung für Alle e.V. (“digital education for all”). Education is a basic human right, and digital technologies have become a social necessity for ensuring access to it – especially in an ever more unpredictable environment characterized by frequent crises and conflicts. The recent educational disruption caused by the Covid19 pandemic or the Ukrainian war revealed the need to leverage technology and human resources to transform schooling models and build an open, inclusive, and resilient learning system (UNESCO 2022). This case study comprises a business plan showing how economic success can be combined with societal impact via leveraging the opportunities of digital education in an easily accessible and transparent manner.

2. Company Description

2.1. Products and Services

2.1.1. Background

In the OECD's student learning outcomes (PISA) assessment of 2000, German students' reading, mathematics, and science scores were below the OECD average. This was a wake-up call for Germany, and the government doubled its educational spending (OECD n.d.). Furthermore, the Covid19-pandemic has shown how far Germany still lies behind when it comes to the digitization of schools. Thus, the government topped up its "DigitalPakt" funding program to €6.5bn, which aims to equip all schools with the necessary hard- and software to bring digital education to the classroom (BMBF 2019). However - while schools increasingly have the necessary prerequisites - educators, teachers, and parents do not know what digital tools are available on the market. Furthermore, they are left without actionable guidance and support on how to use and bring them to the classroom in a useful manner.

To solve this, edu-cloud provides the first go-to platform for finding and using digital educational offerings via a) creating transparency as to which offerings are currently available on the market, b) making it easy for all parties to find personalized offerings quickly, and c) effectively using them. The current website is a growing collection of digital educational tools with custom filters and categories, serving as a first Minimum Viable Product (MVP). In the long term, edu-cloud aims to differentiate itself via three core offerings:

2.1.2. edu-cloud Platform

The edu-cloud website will be developed into a comprehensive platform that will serve as a personalized digital companion for finding and using digital educational tools (please see *Appendix 10.2* for a list of the envisioned features). The edu-cloud Platform is free to schools, educators, teachers, and parents, following edu-cloud's mission to foster digital education in an easily accessible and transparent way for everyone (see *Mission and Vision*). In addition, listed tool providers can become verified partners for a yearly fee of 2.999€. These partnerships

include analytics (customer insights, competitive pricing, etc.), dynamic content maintenance by providers, as well as preferred conditions for on- and offline formats included in the Bronze Sponsorship package (see *edu-cloud Ecosystem*).

2.1.3. edu-cloud Toolkits

edu-cloud will offer digital "Toolkits" for schools, educators, teachers, and parents. These are constituted by a specified number of digital educational tools which can be used for a fixed monthly fee (after a free trial month) and flexibly adjusted. Subscribers can log in to any of those tools via the Single-Sign-On (SSO) provided by their edu-cloud credentials. While the exact price depends on the negotiated discount with the different tool providers, generally, there are two kinds of packages available:

	Basic edu-cloud Toolkit	Premium edu-cloud Toolkit
Description	<ul style="list-style-type: none"> ✓ 3 educational tools ✓ Adjustable every month 	<ul style="list-style-type: none"> ✓ 4 educational tools ✓ Adjustable every month ✓ 50% discount on all on- and offline formats**
B2C Pricing for Educators & Parents	14.99€ / month	24.99€ / month
B2B Pricing for Schools*	2.499€ / year	3.499€ / year

* Average price given as final price will depend on number and size of classes (also see *Pricing and Revenue Model*)
 ** please see *edu-cloud Ecosystem* for details

Figure 1: edu-cloud Toolkits

2.1.4. edu-cloud Ecosystem

Apart from becoming a quality mark for digital education, edu-cloud will proactively build up and strengthen the digital educational system in Germany and beyond, thereby bringing digital education to the masses in a modern and effective manner. This will be achieved via online formats such as newsletters and the "Digital Education Enthusiast" podcast, as well as offline formats such as conferences, hackathons, and edu-X talks. While the revenue generated via paid placements in podcasts, event ticket sales, etc., highly depends on the exact set-up, edu-cloud will also offer exclusive sponsorship contracts for partners such as tool providers and corporates. Those packages include various perks, such as advertisements and employer

branding. While the concrete terms depend on the individual partner profile, sponsorships can be split into three kinds of packages:

	Bronze Sponsorship	Silver Sponsorship	Gold Sponsorship
Pricing	1.999€ / year	3.999€ / year	5.999€ / year

Figure 2: Sponsorship Packages

From Bronze to Gold, they offer increasing sponsorship incentives in terms of 1) discounted access to and brand presence at events, 2) preferred advertise placements, and 3) possibilities to host interactive formats under the "edu-cloud brand". Please refer to *Pricing and Revenue Model* for reasoning on product pricing.

2.2. Mission and Vision

edu-cloud's mission is to foster new chances via contemporary education and make the opportunities of digital education easily accessible for everyone by empowering educators and parents to use digital tools suitably and effectively. Ultimately, edu-cloud's vision is to become the first touchpoint and digital companion from finding to using digital educational tools in the classroom and beyond across Europe.

2.3. Team and Founders

edu-cloud's is founded by Verena Pausder and Louisa Strasser, who will both serve as Managing Directors of the company. The founding team shows a strong founder-market fit with a substantial track record in Education Tech (EdTech) and adjacent, fast-paced industries. Verena Pausder is a serial entrepreneur, investor (30+ angel investments), and best-selling author. Previously, she founded Fox & Sheep (developer and provider of children's Apps) and the HABA Digital Werkstätten (creative educational and experiential space for children, families, schools, and companies). Louisa Strasser, among others, previously worked in consulting at BCG and the pre-seed investment team at Picus Capital (leading European VC with 150+ portfolio companies). Also, both founders currently serve as board members of Digitale Bildung für Alle e.V. Furthermore, the founding team constitutes Christa Dahl (Head

of Customer Success and Partnerships) and Samuel Kuhn (Head of Digital Strategy and Web- & Cloud Development). Please see *Appendix 10.3* for detailed information on the founding team and board members.

2.4. Long-term Orientation of Business and Strategic Objectives

edu-cloud will be founded as a gUG – a non-profit entrepreneurial company. In the case of the gUG, 75% of the profits must benefit non-profit purposes. The remaining 25% is used to grow the share capital of the gUG until the gUG can be converted into a gGmbH which requires 25.000€ of seed capital and is planned to take place in 2024 (see *Financial Projections*). In terms of strategic positioning, edu-cloud has formulated three long-term objectives, which will be achieved by entering and building a solid partnership network across three key areas:

1) Establish edu-cloud as a quality mark for digital education: For this, edu-cloud will continuously build out its tool collection and enter partnerships with digital educational tool providers, Mobile Device Management (MDM) systems, Learn Management Systems (LMS), hardware providers, etc. ensuring they meet best-of-class standards.

2) Create a strong brand image and position edu-cloud as an ambassador and accelerator of contemporary digital education: For this, edu-cloud will build a network of partners and supporters from politics, foundations, and corporates. A detailed overview of the current partners of Digitale Bildung für Alle e.V. can be found in *Appendix 10.4*.

3) Build a tech-driven product showcasing state-of-the-art EdTech made in Germany: For this, edu-cloud will enter a development partnership with Merantix Labs – a leading Artificial Intelligence (AI) campus based in Berlin (Merantix 2022). They will support edu-cloud with its technological roadmap (see *Product and Technology Roadmap*) and continuous effort to provide best-in-class personalization algorithms.

edu-cloud's business model is highly dependent on direct and indirect network effects. Direct network effects are apparent if increased users lead to increased platform value for this user

group. This holds for edu-cloud users as they profit from higher user numbers through higher personalization (due to more available data points) and community exchange. Indirect network effects are applicable if the platform value for one user group goes up if a user of another group joins. In edu-cloud’s case, this describes the wider range of offers for teachers, parents, schools, and educators if more tool providers join the platform. Vice versa, tool providers benefit from a wider audience to advertise and distribute their products to (Cusumano 2022). Due to their higher value creation for each user group, indirect network effects are likely to predominate direct network effects in the case of edu-cloud. To create these network effects, gaining reach and traction¹ from the beginning presents a critical success factor, and both user groups need to be incentivized to join the platform. Thus, as a go-to-market strategy, edu-cloud will focus on building up its brand and community via Freemium campaigns for first users, referral programs, high-quality content formats, promotions, and aggressive marketing for the edu-cloud Toolkits and its freely accessible platform (see *Marketing and Sales Strategy*). To reach the vision, mission, and long-term objectives, edu-cloud identified several milestones of short, mid, and long-term strategic guidelines that will allow the company to gain efficiency, performance, and reach. They can be split into three main phases, depicted in *Figure 3*.

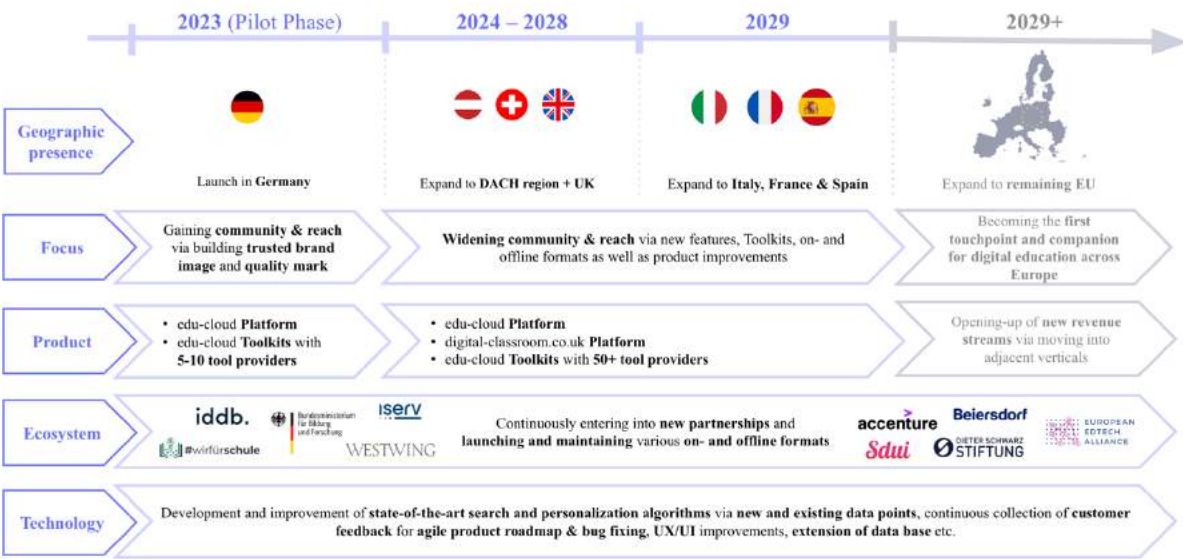


Figure 3: Roadmap and Milestones

¹ By now, edu-cloud has already been clicked 124.000+ times and its newsletter counts 2.000+ subscribers

First, edu-cloud will focus on the German market in 2023. The edu-cloud Platform constitutes its initial offering as well as the first edu-cloud Toolkits in partnership with five to ten providers. In 2024, edu-cloud will expand its operations to the DACH region (Austria and Switzerland) and the United Kingdom (UK). In the UK, an English-speaking version will be launched under the domain digital-classroom.co.uk. Once a solid user base and brand image have been created in these markets, edu-cloud will expand its operations to Italy, France, and Spain before expanding to remaining EU countries afterward. These expansion efforts are expected to be realistic from 2026 onwards. Also, a SWOT analysis was conducted which can be found in *Appendix 10.5*.

3. Market Analysis

3.1. Target Market

edu-cloud's target user profiles can be split into four main groups. First, school authorities looking for ways to relieve their staff via equipping their school with best-in-class software and tools from administration over self-organization to digital classroom education. This target group is of relevance for edu-cloud's school licensable Toolkits. Second, teachers looking for the same solutions themselves and aiming to provide their students with the best and most personalized education possible. For them, individually licensable edu-cloud Toolkits are of relevance. Third, edu-cloud targets parents who want to support their children's educational journey. Fourth, Premium Partner Profiles and Sponsorships are an attractive opportunity for high-quality EdTech providers and corporates aiming to build a reputation and extend their reach and user base. Please see the section *Customer Persona* for a more detailed analysis of pain points and value creation for each target group.

3.2. Market Sizing, Valuation, and Capture

The user group of parents will be neglected for market sizing as edu-cloud's vision is to bring digital educational tools to the class- and living rooms independently of families' financial

resources. Thus, the main target groups are the schools and teachers providing these tools and possibilities to all students, irrespective of family income. The edu-cloud Platform is accessible for free and, therefore, does also not present a part of market sizing. The edu-cloud Ecosystem will be relevant for all target users, partners, and the broader education ecosystem.

However, it will be neglected for market sizing as the activities constituting the Ecosystem are, first and foremost, not aimed at revenue generation but at building a brand

TOTAL MARKET SIZE	2023	2024-2028	2029	2029+
Nr. of Schools	30.370	76.850	183.717	354.501
Nr. of Teachers	955.000	1.808.198	3.868.242	5.200.000
Nr. of EdTech Providers	409	2.202	3.315	4.826
TOTAL MARKET SIZE	985.779	1.887.250	4.055.274	5.559.327

Figure 4: Total Market Size

TOTAL MARKET VALUATION	2023	2024-2028	2029	2029+
Market Valuation Germany	90.568.234	90.777.370	91.021.013	91.304.858
Market Valuation DACH region (excl. Germany) + UK		139.282.103	140.164.411	141.192.300
Market Valuation Italy, France & Spain			310.709.580	311.093.081
Market Valuation EU (excl. previous expansions)				487.000.961
TOTAL MARKET VALUATION	90.568.234	230.059.472	541.895.004	1.030.591.200

Figure 5: Total Market Valuation

and community. The market sizing is based on secondary data such as publicly available data sources and articles. If no reliable data source was available, numbers were approximated via available data sources from other countries and corresponding assumptions, i.e., based on relative population or teacher-student ratios. The market size of the respective target groups from 2023 to 2029 is depicted in *Figure 4* (please refer to *Appendix 10.6* for a more detailed breakdown). Considering edu-cloud’s products and prices, edu-cloud's target market is valued at 90.6€ Mio in 2023. Primarily driven by geographic expansion, the market value will increase to 230€ Mio from 2024 to 2028 and exceeds 1bn € once expanding to the EU (see *Figure 5*). Please refer to *Appendix 10.7* for detailed information on the assumed split of product packages and *Appendix 10.8* for an overview of market valuation per target group.

Y-o-Y growth rates	TOTAL MARKET CAPTURE							
	2023	2024-2028	2029	2029+	2023	2024-2028	2029	2029+
Anticipated Y-o-Y growth rate teacher willingness	10%				467.558	992.191	1.505.596	1.863.520
Anticipated Y-o-Y growth rate penetration teachers	15%					1.559.429	2.606.627	3.321.176
Anticipated Y-o-Y growth rate penetration schools	20%						3.389.455	4.123.652
Anticipated Y-o-Y growth rate penetration partners	30%							6.344.333
					467.558	2.551.620	7.501.678	15.652.681

	Germany		Germany, DACH + UK				Italy, France, Spain	Remaining EU
Penetration Rates	2023	2024	2025	2026	2027	2028	2029	2029+
Teachers willing to proactively bring digital tools to the classroom	40,00%	44,00%	48,40%	53,24%	58,56%	64,42%	70,86%	77,95%
Germany, DACH + UK								
Teacher Penetration	1,00%	1,15%	1,32%	1,52%	1,75%	2,01%	2,31%	2,66%
School Penetration	0,50%	0,60%	0,72%	0,86%	1,04%	1,24%	1,49%	1,79%
Partner Penetration	2,00%	2,60%	3,38%	4,39%	5,71%	7,43%	9,65%	12,55%
Remaining EU								
Teacher Penetration							1,62%	1,86%
School Penetration							1,05%	1,25%
Partner Penetration							6,76%	8,78%

Figure 6: Total Market Capture based on Year-on-Year Growth and Penetration Rates

Applying the assumed penetration and growth rates depicted in *Figure 6*, edu-cloud will be able to capture a market of 467.558€ in 2023, increasing to 2.5€ Mio from 2024-2028 and up to 15.7€ Mio from 2029 on. edu-cloud aims to serve both - teachers bringing in a high digital affinity and knowledge as well as teachers still unfamiliar with digital educational tools and how to use them. However, the initial users of edu-cloud are likely to belong to the first group before the latter one follows. The percentage of teachers willing to proactively bring digital tools to the classroom is based on the conducted expert interviews (see *Customer Persona*) and is expected to increase steadily. Also, initial penetration rates from 0.5% to 2% are considered reasonable assumptions for new market entrants. As schools are often quite resistant to licensing new offers and are facing budget constraints, their penetration rate is expected to be the lowest, with 0.5% in the beginning. However, the expert interviews revealed that schools become more open to such offerings once the trust of teachers has been created and the offering's quality convinces them. Thus, schools' year-on-year (Y-o-Y) growth rate is anticipated to reach 20%, whereas teacher penetration will only increase at 15%. Partners show the highest growth of penetration rate of 30% as their incentive strongly increases over time due to the kick-in of network effects (see *Customer Persona and Competitiveness*). For EU expansion, all penetration rates have been reduced by 30% to account for the large market size and corresponding challenges of market capture. Please also see *Appendix 10.9* for a detailed breakdown of market capture per target group, and refer to *Appendix 10.10* for an industry overview and market trends.

4. Customer Persona and Competitiveness

4.1. Customer Persona

To define a clear value proposition for a product, one first needs to gain an in-depth understanding of its users' needs and problems (Kirchberger, Wouters, and Anderson 2020). For this, a problem-centric, qualitative research approach was adopted by conducting 20+ user

interviews (see *Appendix 10.11*). This section aims to shed light on the revealed pain points, how edu-cloud addresses them and what value it ultimately creates for each target group.

Teachers and schools are facing several similar pain points and constraints when it comes to finding and using digital educational tools. First, they are overwhelmed by the information flood of new software, apps, and possibilities, scattered across various sources and channels. This leaves them without a structured, easily consumable go-to resource to find and compare offerings according to their needs. Furthermore, they are left without any actionable guidance and advice on how to use such tools in an effective and supportive manner. This struggle intensifies if teachers lack the necessary digital skills and knowledge. Second, schools and teachers complain about the limited flexibility of available offers as they often come with long license periods, and switching costs are high. Third, there is an increased awareness of data security or inappropriate content, but no single source of truth listing offers which can be used with a clean conscience. Fourth, teachers have very little time, and most are already working overtime, leaving no space for individual support of students lying behind. Lastly, teachers highly depend on the school authority's openness to try out and license new offerings. Otherwise, they need to pay them out of their own pocket. However, while the willingness to pay is indeed limited, it became evident during the interviews that - once convinced by the ease and quality of an offer - teachers are willing to invest between 5€ to 15€ per month for one offer. On the other hand, while facing budgetary constraints, schools become increasingly open to digital tools and - especially if the teachers are already using and convinced by an offering - are willing to invest remaining budgets or even apply for additional funds.

Parents are facing similar pain points. For instance, they are also overwhelmed with information, left without guidance and support, and often face time and budget constraints to support their children's educational journey. However, as mentioned above, edu-cloud Toolkits are primarily targeted at teachers and schools.

For EdTech providers, partnering up with edu-cloud via Premium Profiles or Sponsorship Packages tackles many challenges: They often miss the credibility and proof-of-quality to be used by schools and teachers without second thoughts. Furthermore, the scope of their offering and its limited flexibility result in diminished access to potential customers. Also, EdTech providers only have siloed insights into their customer's usage behavior and patterns as well as competitive pricing. Simultaneously, they are missing an established, quality-proof, and independent platform on which they can showcase their offer to potential users. Last but not least (esp. in Germany), they face bureaucratic hurdles due to the federalist system and varying standards and regulations across states.

As stated above, edu-cloud's Ecosystem will comprise partnerships beyond EdTech. For those partners, key concerns are building a recognizable brand and reputation going beyond the industry they are operating in via employer branding and "things money can't buy". Furthermore, they show increased intrinsic motivation to positively impact the future via partnering with social enterprises (Aflac 2019). Please see *Appendix 10.12* for edu-cloud's value propositions, competitive advantage, and value creation for each customer group.

4.2. Competition and Competitiveness

According to the literature, the failure rate of startups is over 90%. Therefore, to combat high mortality rates, entrepreneurs must look for profitable niches in which they can innovate without making substantial upfront investments while delivering distinctive products and services (Silva Júnior et al. 2022). edu-cloud's competitors can be clustered into three different groups. The main competitors of each group and their comparison with edu-cloud are depicted in *Figure 7* (*Appendix 10.13* provides an in-depth analysis of each competitor group). The first and most competitive group comprises providers offering search engines for digital educational offers such as Edugle, Mundo, or Find My Tool. However, Edugle lists tools and

Focus	Search engines & platforms				Communities & alliances			Politically initiated projects		
	edu-cloud.org	EDUGGLE	MUNDO	FindMyTool	EUROPEAN EDTECH ALLIANCE	edusiia	didacta	BIRD	VIDIS	DIRECTIONS
	Digital education	Digital education	Digital media	Digital education	EdTech hub	Education platform	Education fair	Digital education platform	Access standards	GDPR
Geography	✓	🇩🇪	🇩🇪	🇩🇪	🇪🇺	🇩🇪	🇩🇪	🇩🇪	🇩🇪	🇩🇪
High transparency on available offers	✓	✓	✓	✓	○	○	○	✓	✗	✗
Actionable online advice & guidance	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
Personalization	✓	✗	✗	✗	○	✗	○	✗	✗	✗
Strong UI/UX	✓	✗	✓	✓	○	✓	○	○	○	○
SSO	✓	✗	✗	✗	✗	✗	○	✓	✓	✗
Credibility & proof-of-quality	✓	✗	✓	✗	✗	✗	✗	✓	✓	✓
Modern & innovative image	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗
Continuous community building	✓	✗	✗	✗	✓	✓	✗	✗	✗	✗
Flexibility (i.e. edu-cloud Toolkits)	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
Already on market	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗

✗ Not Existing ✓ Existing ○ Not applicable for type of offering

Figure 7: Competitors and USP

offers in the broader education space, and Mundo only comprises digital media. While Find My Tool, as edu-cloud, focuses on digital educational offers, it lacks detailed information, actionable guidance and advice as it solely forwards users to the provider’s website. Furthermore, none of the competitors combines their search function with a high degree of personalization and intuitive User Interface and Experience Design (UI/UX). It should also be noted none of them is currently close to reaching a “critical mass” for the kick-in of network effects, and, therefore, they do not threaten edu-cloud’s market entry.

The second group is presented by existing educational brands and conferences competing with edu-cloud's ecosystem approach. While there are promising players on the European - i.e., The European EdTech Alliance - or German - i.e., Edusiia - market, none of them has a unique positioning for fostering contemporary digital education. Additionally, current "knowledge hubs" and conferences such as Didacta (Germany's most prominent education fair) often lack an innovative, state-of-the-art concept and image, as well as continuous community engagement via different formats. Thus, these companies are essential players in the wider

educational ecosystem, but this ecosystem still shows a clear white space for a modern accelerator of digital education.

Last but not least, launched political initiatives such as the BIRD, VIDIS, or DIRECTIONS project constitute the third competitive group. Here, edu-cloud differentiates itself via the comprehensiveness of its offering, as many of the initiatives only cover some of the envisioned functionalities. For instance, VIDIS only offers a SSO solution, and DIRECTIONS' anticipated certification standard would only provide proof of security and quality in terms of GDPR compliance. BIRD, by far, presents the most competitive offering as it aims to build an education platform via which products and services can be directly accessed via SSO. However, it still lacks behind in terms of flexibility as well as personalized, actionable guidance and advice. Furthermore, recent years have shown that such political projects often move very slowly - with none of them being able to make it to market yet – due to high bureaucratic hurdles. Additionally, the expert interviews showed similar existing projects barely bear any fruit.

Besides these three competitive groups, some digital educational tool providers sometimes also show some overlap with edu-cloud. For example, they might also come with actionable guidance and support for their offering. Nevertheless, end users are still missing a single source of information. These providers are viewed as future partners whose offering will, i.e., be a part of edu-cloud Toolkits (also see *Customer Persona*). Also, it should be emphasized that edu-cloud does not see itself as a direct competitor to public or private offerings but as a partner for both sides that ultimately provides end-users with the best digital offer for their individual needs.

Based on this assessment, edu-cloud has a clear Unique Selling Point (USP) over its competitors (see *Figure 7*). First, **structured, lean, and intuitive UI/UX** complemented by a **high degree of personalization** and **SSO functionality**, ultimately leading to time savings for all users.

Second, it presents the first **easily accessible, comprehensive single source of truth**, providing transparency on available offers as well as **actionable guidance and advice**. Third, it serves as a **strong brand, quality mark, and modern ecosystem partner** to accelerate digital education. Last but not least, the **flexibility** offered by edu-cloud Toolkits remains unconquered, with no similar offering existing on the market yet. While modularity and accompanying flexibility reached industries like banking or insurance years ago, edu-cloud is the first player bringing them to education.

5. Marketing and Sales Strategy

A company's marketing and sales strategy is the combination of product, price, distribution, and promotion most suited to a particular group of consumers (Peter, Olson, and Grunert 1999). In the case of edu-cloud, suitable strategies are highly dependent on the different products and services - namely, the edu-cloud Platform, Toolkits, and Ecosystem - as well as their target groups. As the build-up of a comprehensive ecosystem presents a continuous effort that will happen simultaneously to create a recognizable, established brand around edu-cloud, the following sections particularly focus on the marketing and sales strategy of the edu-cloud Platform and Toolkits.

5.1. Marketing Strategy

Brands have gone from being solely defined and managed by brand strategists to being negotiated, contested, fluid, and dynamic. This results in a brand's meaning being dependent on consumer context and audience (Hemetsberger and Mühlbacher 2014). The goal is to build an attractive brand around edu-cloud, which users can identify. Thus, edu-cloud's users are supposed to co-create the brand by actively interacting with the community via blogs and discussions on the edu-cloud Platform as well as at on- and offline events. By presenting edu-cloud as a high-quality, modern, dynamic, and authentic brand, close customer relationships and increasing customer brand loyalty will be achieved. To create a need for edu-cloud among

target customers, push and pull marketing instruments will be combined (Dackiw 2017). Push marketing tries to promote products by “pushing” them onto people, while pull marketing attempts to get the customers to come to you (Robertson 2017). Online and social media advertisements will primarily achieve the former. In terms of the latter, presence at teacher training, educational fairs and conferences, Search Engine Optimization (SEO), and topic-specific content marketing will aim to "pull" potential users to edu-cloud. A detailed description of on- and offline marketing communication is provided in *Appendix 10.14*.

5.2. Sales Strategy and Revenue Sources

edu-cloud has two primary revenue sources. First, subscription fees for edu-cloud Toolkits, which will be sold directly on the edu-cloud website. After purchase, users can see their own individual edu-cloud dashboard, from which they can access the offerings. They get directly forwarded to the sign-in at the respective tool provider, where they log in with their edu-cloud credentials (SSO). Second, edu-cloud generates revenue with B2B partnerships through a Premium Profile on edu-cloud or a Sponsorship package. Both packages can be purchased on the edu-cloud Platform as well. As they may demand some extent of individual support, prospective partners also have the possibility to be directly connected with edu-cloud's sales and partnership team first (also see *Appendix 10.17*).

Besides the edu-cloud Platform, third-party integrations will be the second key distribution channel. edu-cloud will offer a no-code plug-in with which its platform can be directly integrated into private and public LMS such as iServ (Germany's market leader for school software, in use at 6.000 schools) or BayernCloud Schule (provided by the federal state of Bavaria). These partnerships will vastly accelerate edu-cloud's adoption and present an attractive add-on for LMS providers, enabling them to provide their users with an easy way to browse and find educational offers out of "one hand".

While the edu-cloud Platform remains a freely accessible resource, the Toolkits shall become publicly sponsored in the long term. This entails governments/federal states buying a collective school license, which can then use edu-cloud Toolkits for free. This strategy has already proven successful for established offers such as the German online reading tool Antolin. Also, edu-cloud will closely cooperate with school consultancies, further accelerating its popularity and usage. Content formats such as the edu-cloud newsletter or podcasts, as well as ecosystem components such as event ticket sales, also hold substantial monetization potential in the future. However, they serve the primary purpose of building a solid community, brand, and reach, and the associated revenue potential will likely be neglectable over the first years.

5.3. Pricing and Revenue Model

As the idea of edu-cloud Toolkits does not exist on the market yet, competitor-based pricing cannot be considered a suitable pricing approach. Furthermore, since it presents a software offering with no fixed Cost of Goods Sold (COGS), cost-based pricing was also excluded. Thus, a value-based approach was adopted. For this, the user interviews provided valuable insights about willingness to pay: While teachers naturally prefer using tools via a school license, it became evident they are willing to pay between 5€ to 15€ per month for digital offers if their quality and ease of use convince them. Additionally, the interviewees stated they prefer a monthly subscription model with a lower fee over a higher one-time payment. This, combined with the possibility of canceling the subscription monthly, decreases the financial entry barrier for new customers. Considering that edu-cloud Toolkits present a discounted product bundling of digital offerings, package prices are set at 14.99€ and 24.99€ per month. Setting a fixed price for schools proved difficult due to their varying budget constraints. Considering the cost of licenses they currently use (between 500€ and 2.500€ p.a.), 2.499€ and 3.499€ are expected to present reasonable average package prices. However, prices can vary depending on the terms and conditions negotiated with the individual tool providers as well as the size and

number of classes. To further decrease entry barriers, both - teacher and school licenses - come with a free trial month. For partnership packages, competitor-based pricing was adopted, and prices of 2.999€ (Premium Platform profile), 1.999€ (Bronze Sponsorship), 3.999€ (Silver Sponsorship), and 5,999€ (Gold Sponsorship) are in line with current market standards.

6. Product and Technology Roadmap

The long-term product roadmap focuses on three key areas which mutually reinforce each other: Continuous improvement of data collection and processing, the integration of new features, and opening up new revenue streams.

Generating relevant data is crucial to developing a lean and personalized user experience via search and personalization algorithms. In the short term, new data points will be created via a) introducing a log-in function, incl. profile info (e.g., role, saved offers, etc.), b) introducing more detailed information via web scraping provider pages and content clustering, and c) introducing comprehensive rating and review functionalities. This will lay the ground for developing a personalized search experience via establishing and expanding a collaborative filtering algorithm through specific user-offer mapping. Furthermore, gamification and a granular search bar will be introduced. Also, analytical partner insights on user behavior and competitive pricing will become more comprehensive, leading to higher monetization potential. In the medium to long term, the database will be further extended by cooperating with tool providers to access users' behavior on their websites and applications. This will lead to more holistic and effective learning across offerings via personalized recommendations. Please see *Appendix 11.15* for a detailed product roadmap, including current and newly generated data points as well as respective envisioned product features. Generally, edu-cloud plans to invest over 290.000€ in product improvements in the upcoming three years. The size of the product and operations team will be further increased, and all Research and Development (R&D)

processes shall be fully internalized by 2025 (please see *Financial Projections* for details and refer to *Appendix 10.16* for more information on initial technical partnerships).

7. Financial Projections (2023-2025)

7.1. Assumptions

This section outlines the key assumptions forming the basis of edu-cloud's *Financial Projections*. Especially startups underlie many uncertainties, and financial projections are likely subject to high fluctuations and must be frequently adjusted. Thus, this part only covers the first three years of edu-cloud's operations.

7.1.1. Seasonality

edu-cloud is exposed to some extent of seasonality. Demand is expected to peak at the beginning of a school year as schools and teachers are more open and motivated to try out and introduce new tools at this point. Furthermore, the yearly budget of schools is still untouched.

Seasonality	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sept 23	Oct 23	Nov 23	Dec 23
	Start of School Year											
Estimated "traffic" during the year	10%	7,5%	8%	5%	5%	5%	5%	5%	15%	12,5%	10%	12,5%

Figure 8: Seasonality

7.1.2. Sales Pipeline

Figure 9 shows edu-cloud's expected sales numbers from 2023 to 2025, divided by regions and products. All sales numbers are based on the assumptions made under *Market Sizing, Valuation, and Capture*. It can be seen that edu-cloud's sales numbers show some fluctuation due to seasonality. However, as outlined under *Profit and Loss Accounts* and *Cashflow Projections*, edu-cloud does not face liquidity risk in months showing fewer sale numbers. Total sales amount to 10.288 in 2023 and increase to 26.198 in 2023 and 34.801 in 2025.

Sales Pipeline	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sept 23	Oct 23	Nov 23	Dec 23	2023	2024	2025
Germany	398	299	299	199	199	199	199	199	597	498	398	498	3.982	5.030	6.348
School Toolkits	15	11	11	8	8	8	8	8	23	19	15	19	153	182	218
Teacher Toolkits	382	287	287	191	191	191	191	191	573	478	382	478	3.822	4.833	6.113
Partnerships	1	1	1	0	0	0	0	0	1	1	1	1	7	15	17
DACH + UK													0	4.643	5.885
School Toolkits													0	280	335
Teacher Toolkits													0	4.320	5.462
Partnerships													0	43	58
Extended Subscriptions	0	382	669	574	478	382	382	382	382	764	1.051	860	6.306	16.525	22.598
School Toolkits	0	0	0	0	0	0	0	0	0	0	0	0	0	77	231
Teacher Toolkits	0	382	669	574	478	382	382	382	382	764	1.051	860	6.306	16.441	22.302
Partnerships	0	0	0	0	0	0	0	0	0	0	0	0	0	7	65
TOTAL SALES	398	681	968	773	677	581	581	581	979	1.262	1.449	1.358	10.288	26.198	34.801

Figure 9: Sales Pipeline 2023-2025

All sales metrics are based on the sales numbers outlined in *Figure 9*. For all transactions, a Payment Service Provider (PSP) fee consisting of a fixed fee (0,10€) as well as a percentage share of transaction volume (1.5%) is deducted.

7.1.3. Customer Lifetime

The Customer Lifetime (CL) differs among user groups and is based on secondary research of similar offerings in other industries and customer interviews. Teachers are expected to have an average CL of three months. While some will stay with edu-cloud for several months as they enjoy the flexibility, to others, edu-cloud will only serve as an entry point to try out some offers before turning to a cheaper direct license of one single tool. However, the latter user type does not threaten edu-cloud Toolkits as their short CL is weighed up by highly digital-receptive teachers wanting to enjoy their flexibility and personalization long-term (also see *Competition and Competitiveness*). Therefore, three months is expected to present a reasonable average CL for both types of users. The same pattern holds for schools even though their product stickiness was revealed to be higher, and a CL of 18 months is assumed. Finally, EdTech partnerships aim to present a long-term commitment with increased network effects over time. Therefore, they are estimated to last for three years on average.

7.1.4. Personnel Expenses

Personnel expenses constitute a main cost driver for edu-cloud, and a detailed staffing plan listing paid salaries can be seen in *Appendix 10.17*. Paid salaries incl. non-wage labor costs, amount to 270.700€ in 2023, 818.500€ om 2024, and 1.382.025€ in 2025. Further indirect labor costs included in the financial projections are as follows: Cultural expenses such as team events and staff training (2023: 12.000€, 2024: 24.000€, 2025: 60.000€), travel expenses (2023: 3000€, 2024: 6.000€, 2025: 9.000€), and compensations for board members (2023: 2.500€, 2024: 5.000€, 2025: 7.500€ p.a. per member).

7.1.5. Marketing and Advertising

Another main cost driver is marketing and advertising. Costs are estimated at 150.000€ in 2023, 200.000€ for 2024, and amount to 250.000€ in 2025. 30% of the budget will be spent on online marketing in the form of Google (2%),

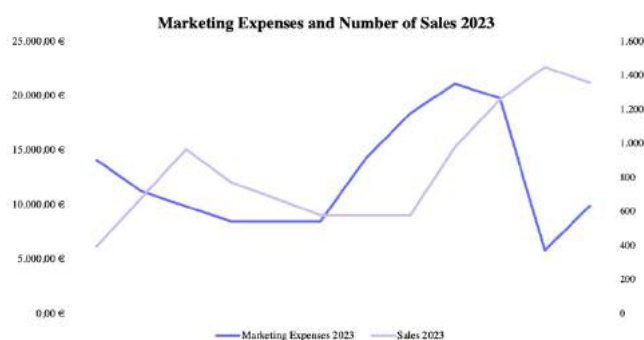


Figure 10: Marketing Expenses and Sales Numbers 2023

Facebook (11%), Instagram (11%), and LinkedIn (6%) ads. 50% is spent on offline marketing in the form of event presence (10%) and teacher ambassadors (40%) who are expected to serve as a critical accelerator for edu-cloud's popularity in schools (see *Appendix 10.14*). The remaining 20% is spent on campaigns and promotions such as Freemium and referral programs.

7.1.6. Research and Development

edu-cloud's R&D costs are calculated as a percentage of net sales. In the first year, 2.5% of net sales are projected, which will increase to 5% in 2024 and 7.5% in 2025. They amount to 12.685€ in 2023, 86.401€ in 2024, and 193.480€ in 2025.

7.1.7. Investments and Depreciation

The highest investment constitutes edu-cloud's platform development, including the English version of digital-classroom.co.uk as well as the functionalities of Toolkits such as SSO (100.000€). This price is based on providers' estimates and can be considered reasonable considering the platform's medium complexity. Further investments are intangible assets, namely laptops (4.500€) and smartphones (3.960€) every full-time employee will be provided with. A detailed overview of asset investments can be seen in *Appendix 10.18*.

Due to edu-cloud's asset-light business model, depreciation only concerns the intangible asset of the platform, which will be depreciated over ten years, and the IT hardware, which will be depreciated over five years. A detailed depreciation can be found in *Appendix 10.19* and stands in line with the IFRS accounting standards.

7.2. Profit and Loss Accounts

Figure 11 shows edu-cloud's Profit and Loss (P&L) statement for the first three years. In 2023, net revenue will reach 507.386€ and increases to 2.579.737€ in 2025. After income (15.8%) and non-profit (75%) taxes, a net income of -39.070€ is expected in the first year, increasing to 437.399€ in 2024 and 524.371€ in 2025. The net profit margin is expected to grow from -7.7% in 2023 to 25% in 2024, and 20% in 2025². In addition, from 2023 to 2025, edu-cloud will be able to invest 870.578€ for non-profit purposes such as supporting low-income families via "edu-cloud scholarships", offering free teacher training, or equipping schools with necessary hardware and digital infrastructure. Please see Appendix 10.20 for the P&L statement across various best and worst-case scenarios.

Profit and Loss Statement	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sep 23	Oct 23	Nov 23	Dec 23	2023	2024	2025
INCOME															
Block subscription teacher	5.566 €	9.381 €	13.931 €	11.148 €	9.249 €	8.138 €	7.350 €	8.259 €	13.916 €	18.091 €	20.821 €	19.077 €	147.386 €	772.993 €	461.653 €
Block subscription schools	34.038 €	24.599 €	24.939 €	18.135 €	18.135 €	18.135 €	18.135 €	18.135 €	32.143 €	43.077 €	34.008 €	42.077 €	346.800 €	1.203.814 €	1.777.077 €
Partnership	3.099 €	3.099 €	3.099 €	- €	- €	- €	- €	- €	5.099 €	3.099 €	3.099 €	3.099 €	31.404 €	143.142 €	351.427 €
Grant Revenue	42.879 €	37.917 €	42.899 €	29.205 €	27.880 €	26.487 €	26.487 €	26.487 €	46.161 €	64.271 €	37.988 €	48.472 €	116.277 €	1.536.977 €	2.622.856 €
IPF Service Fee	609 €	619 €	729 €	313 €	400 €	433 €	453 €	453 €	1.133 €	1.099 €	1.055 €	1.171 €	9.711 €	28.233 €	42.518 €
Net Revenue	41.993 €	37.532 €	41.242 €	28.708 €	27.489 €	26.832 €	26.832 €	26.832 €	46.825 €	63.884 €	36.974 €	44.521 €	307.386 €	1.738.424 €	2.579.737 €
(Class of Goods)	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
GROSS PROFIT	41.993 €	37.532 €	41.242 €	28.708 €	27.489 €	26.832 €	26.832 €	26.832 €	46.825 €	63.884 €	36.974 €	44.521 €	307.386 €	1.738.424 €	2.579.737 €
OPERATING EXPENSES															
General and Administrative Expenses															
Salaries and wages	17.807 €	17.807 €	17.807 €	17.807 €	17.807 €	17.807 €	17.807 €	18.587 €	18.587 €	18.587 €	17.867 €	17.867 €	216.500 €	434.800 €	1.140.000 €
Rent wage laborer costs	4.407 €	4.407 €	4.407 €	4.407 €	4.407 €	4.407 €	4.407 €	4.607 €	4.607 €	4.607 €	4.407 €	4.407 €	56.100 €	112.200 €	276.457 €
Capital Expenses (e.g., from Brown, Staff Training)	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	12.000 €	24.000 €	60.000 €
Compensation for Board Members	1.042 €	1.042 €	1.042 €	1.042 €	1.042 €	1.042 €	1.042 €	1.042 €	1.042 €	1.042 €	1.042 €	1.042 €	12.504 €	25.008 €	62.520 €
Marketing and Advertising	14.134 €	11.270 €	9.871 €	8.471 €	8.471 €	8.471 €	14.274 €	18.000 €	21.127 €	19.800 €	18.000 €	9.929 €	190.000 €	200.000 €	550.000 €
R&D	1.050 €	629 €	1.051 €	770 €	852 €	851 €	1.051 €	1.051 €	1.371 €	1.369 €	1.424 €	1.424 €	12.483 €	24.966 €	62.415 €
Rent	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Utilities & Communication Costs	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Office Furniture Rental	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Office supplies	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Travel	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Books and journals	311 €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	1.311 €	2.622 €	1,100 €
Books and journals	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	1,000 €	2,000 €	1,000 €
Legal/Advocacy	301 €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	3,011 €	6,022 €	3,011 €
Insurance	71 €	71 €	71 €	71 €	71 €	71 €	71 €	71 €	71 €	71 €	71 €	71 €	852 €	1,704 €	852 €
Bank Fees	23 €	23 €	23 €	23 €	23 €	23 €	23 €	23 €	23 €	23 €	23 €	23 €	276 €	552 €	276 €
Travel	209 €	209 €	209 €	209 €	209 €	209 €	209 €	209 €	209 €	209 €	209 €	209 €	2,499 €	4,998 €	2,499 €
Entertainment	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Technology	209 €	209 €	209 €	209 €	209 €	209 €	209 €	209 €	209 €	209 €	209 €	209 €	2,499 €	4,998 €	2,499 €
Microsoft 365 Business Basic	41 €	41 €	41 €	41 €	41 €	41 €	41 €	41 €	41 €	41 €	41 €	41 €	492 €	984 €	492 €
Website domain fees / Web hosting / Server expenses	228 €	228 €	228 €	228 €	228 €	228 €	228 €	228 €	228 €	228 €	228 €	228 €	2,736 €	5,472 €	2,736 €
Depreciation and amortization	974 €	974 €	974 €	974 €	974 €	974 €	974 €	974 €	974 €	974 €	974 €	974 €	11,688 €	23,376 €	11,688 €
Transfer expenses	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
TOTAL OPERATING EXPENSES	41.429 €	38.864 €	38.864 €	35.121 €	35.121 €	35.121 €	40.889 €	45.913 €	46.932 €	46.244 €	33.192 €	36.017 €	678.209 €	1,386,783 €	1,876,769 €
Net Income before taxes	565 €	- 1,012 €	- 4,376 €	- 6,386 €	- 7,720 €	- 9,054 €	- 14,857 €	- 19,884 €	- 18,334 €	- 16,841 €	- 23,742 €	- 26,015 €	- 29,127 €	- 519,241 €	- 622,253 €
Loss Carried Forward	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Provision for taxes on income (15.9%)	89 €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	4,622 €	9,244 €	4,622 €
NET INCOME AFTER TAXES BEFORE NON-PROFIT TAX	476 €	- 1,012 €	- 4,376 €	- 6,386 €	- 7,720 €	- 9,054 €	- 14,857 €	- 19,884 €	- 18,334 €	- 16,841 €	- 23,742 €	- 26,015 €	39,489 €	437,399 €	524,371 €
Non-profit tax (75%)	356 €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
NET INCOME AFTER TAXES	119 €	- 1,012 €	- 4,376 €	- 6,386 €	- 7,720 €	- 9,054 €	- 14,857 €	- 19,884 €	- 18,334 €	- 16,841 €	- 23,742 €	- 26,015 €	39,489 €	437,399 €	524,371 €
EBITDA	1,554 €	73 €	- 2,770 €	- 2,257 €	- 6,722 €	- 6,015 €	- 23,825 €	- 18,500 €	- 19,312 €	- 13,319 €	- 23,791 €	- 27,094 €	- 41,219 €	343,291 €	659,489 €
EBIT	368 €	- 147 €	- 4,011 €	- 6,382 €	- 7,495 €	- 8,829 €	- 14,822 €	- 19,829 €	- 18,319 €	- 16,962 €	- 23,802 €	- 26,430 €	- 39,427 €	319,817 €	624,214 €
EBT	79 €	- 19 €	- 176 €	- 226 €	- 276 €	- 326 €	- 376 €	- 426 €	- 476 €	- 526 €	- 576 €	- 626 €	- 676 €	9 €	20 €
Net Financing - Margin	0%	- 1%	2%	- 22%	- 28%	- 19%	- 57%	- 76%	7%	0%	9%	8%	- 30,770 €	519,417 €	622,291 €

Figure 11: Profit and Loss Statement 2023-2025

7.3. Cashflow Projections

Due to a free trial month, sales collection from Toolkits is postponed by one month. Premium partners and sponsorships packages are collected 30 days after payment. As depicted in Figure 12, declining liquidity can be observed during the first year, with high investments in edu-cloud's platform at the beginning of the year and increased expenses shortly before and during

² The decrease between 2024 and 2025 stems from substantial investments in new hires, marketing, and R&D expenses

the peak season. The final cash balance is expected to stand at 58,970€ at the end of 2023, 31.086€ in 2024, and 31.507€ in 2025. Please refer to *Appendix 10.21* for the Cashflow statement across various best and worst-case scenarios.

Cash Flow Statement	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sept 23	Oct 23	Nov 23	Dec 23	2024	2025
Cash Receipts														
Income from Sales														
Cash Sales	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Collections	- €	42.073 €	37.787 €	41.969 €	29.283 €	27.186 €	20.187 €	20.487 €	26.497 €	69.164 €	64.274 €	37.988 €	1.001.308 €	2.318.438 €
VAT on Sales	- €	8.108 €	7.179 €	7.974 €	5.564 €	5.298 €	5.033 €	5.033 €	5.033 €	13.141 €	12.212 €	11.018 €	304.070 €	478.507 €
Total Cash from Sales	- €	50.181 €	44.966 €	49.943 €	34.849 €	33.184 €	31.520 €	31.520 €	31.520 €	82.301 €	76.486 €	69.006 €	1.004.440 €	2.796.945 €
Income from Financing														
Interest income	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Loan proceeds	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Total Cash from Financing	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Other Cash Receipts	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Total Cash Receipts	- €	50.181 €	44.966 €	49.943 €	34.849 €	33.184 €	31.520 €	31.520 €	31.520 €	82.301 €	76.486 €	69.006 €	1.004.440 €	2.796.945 €
Cash Disbursements														
Cost of Goods	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Operating expenses (less Depreciation)	40.454 €	37.188 €	35.992 €	34.189 €	34.116 €	34.112 €	39.915 €	44.941 €	49.717 €	47.269 €	32.217 €	37.533 €	1.195.573 €	1.842.555 €
PSP Service Fee	- €	680 €	635 €	726 €	517 €	486 €	455 €	455 €	455 €	1.135 €	1.090 €	1.015 €	26.433 €	42.118 €
Loan payments	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Business tax payments	89 €	- €	893 €	- €	- €	- €	- €	- €	- €	3.763 €	- €	4.122 €	82.232 €	98.532 €
Non-Profit tax payments	356 €	- €	2.763 €	- €	- €	- €	- €	- €	- €	13.750 €	11.205 €	15.014 €	346.959 €	464.079 €
VAT Payable	- €	8.108 €	7.179 €	7.974 €	5.564 €	5.298 €	5.033 €	5.033 €	5.033 €	13.141 €	12.212 €	11.018 €	304.070 €	478.507 €
Other expenses / equipment purchase	108.460 €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	5.640 €	7.050 €	- €
Owner's drawings	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Total Cash Disbursements	149.360 €	45.977 €	47.162 €	42.881 €	40.227 €	39.896 €	45.403 €	50.429 €	67.655 €	72.750 €	64.297 €	75.749 €	1.962.328 €	3.426.641 €
Net Cash Flow	149.360 €	4.804 €	- 2.195 €	7.062 €	- 5.378 €	- 6.712 €	- 13.883 €	- 18.909 €	- 36.436 €	9.551 €	12.189 €	6.763 €	37.886 €	- 39.277 €
Opening cash flow	205.000 €	115.640 €	120.644 €	118.248 €	125.510 €	119.933 €	113.221 €	99.338 €	80.429 €	63.993 €	53.544 €	65.733 €	31.970 €	61.084 €
Cash receipts	- €	50.781 €	44.966 €	49.943 €	34.849 €	33.184 €	31.520 €	31.520 €	31.520 €	82.301 €	76.486 €	69.006 €	1.004.440 €	2.796.945 €
Cash disbursements	149.360 €	45.977 €	47.162 €	42.881 €	40.227 €	39.896 €	45.403 €	50.429 €	67.655 €	72.750 €	64.297 €	75.749 €	1.962.328 €	3.426.541 €
Ending Cash Balance	115.640 €	120.444 €	118.248 €	125.510 €	119.933 €	113.221 €	99.338 €	80.429 €	43.993 €	53.544 €	65.733 €	58.970 €	31.084 €	31.507 €

Figure 12: Cashflow Statement 2023-2025

8. Funding Requirements

8.1. Source of Funds

edu-cloud aims to collect 235.000€ in equity funding at the Seed stage. The founder's contribution amounts to 100.000€ (50.000€ each). The remaining 135.000€ are preferably collected from Business Angels, who bring in a network and, in the best case, comprehensive expertise in the EdTech industry. Furthermore, only business angels showing a high identification and long-term commitment to edu-cloud's mission and vision can invest to ensure a strong alignment between the founders and investors (Prohorovs, Bistрова, and Ten 2019).

Regarding non-equity funding, edu-cloud will apply to the German EXIST program under which the founding team receives a startup grant for 12 months. This includes a salary of 2.500€ per month and coaching expenses of 5.000€ for up to three founding members. The most important prerequisite is that the planned business idea must be an innovative, technology-oriented, or knowledge-based product with significant unique selling points and good prospects of economic success (BMWK 2022). As edu-cloud fulfills these criteria, it has a high chance of being admitted to the program. Additionally, edu-cloud will be supported by the National Endowment for Democracy (NED) foundation with a 30.000€ grant per year for three years.

The NED foundation is a private, non-profit foundation dedicated to the strengthening and growth of democratic institutions and has already agreed to support the edu-cloud project with the above-stated grant (NED Foundation 2022).

Aiming for Venture Capital (VC) funding has also been considered but was decided against due to its involved downsides of preference shares, busted convertibles, and the barriers they present to taking on new investors. Also, the business model of finding outlier deals that provide two to three-digit returns within an investment horizon of five to ten years does not match edu-cloud's growth and return-on-investment (ROI) philosophy (see *Shareholder Structure and Exit*). Furthermore, debt financing was waived as business angel funding is considered more valuable and contributes to closing existing skill gaps. If the worst-case scenario applies, revenue-based financing via companies such as Capchase and short-term unsecured business loans present viable options to bridge liquidity risks.

8.2. Use of Funds

Most Seed funding will be invested for the formation and startup costs shown in *Figure 13*. The remaining funds are used within edu-cloud's working capital to finance marketing expenses, build a user base, and create network effects early on.

Capital Expenditure	
Formation costs	301,00 €
Website & Server Costs - Annual fee	2.520,00 €
Intangible assets	100.000,00 €
<i>Platform</i>	100.000,00 €
Assets	8.460,00 €
<i>Laptops</i>	4.500,00 €
<i>Smartphones</i>	3.960,00 €
Total Formation Costs	111.281,00 €
Funding	235.000,00 €
Remaining Funding	123.719,00 €

Figure 13: Formation and Startup Costs

8.3. Shareholder Structure and Exit strategy

The shareholder structure of edu-cloud can be seen in *Figure 14*. As mentioned above, each founder contributes 50.000€ and holds an equal equity share of 37%. Initially, it is planned to bring six business angels on board who get offered a share between 2% to 2.5% depending on investment size.

Projected Shareholder Structure		
Shareholder	Equity Contribution	Shareholding
<i>CEO & MD</i>	50.000,00 €	37,0%
<i>CEO & MD</i>	50.000,00 €	37,0%
<i>Business Angel 1</i>	25.000,00 €	2,5%
<i>Business Angel 2</i>	25.000,00 €	2,5%
<i>Business Angel 3</i>	25.000,00 €	2,5%
<i>Business Angel 4</i>	20.000,00 €	2,0%
<i>Business Angel 5</i>	20.000,00 €	2,0%
<i>Business Angel 6</i>	20.000,00 €	2,0%
<i>Employee Option Pool</i>	- €	12,5%
Total	235.000 €	100 %

Figure 14: Shareholder Structure

Furthermore, an option pool for employees worth 12.5% in equity will provide a strong incentive for recruiting and retainment (Index Ventures n.d.).

Even though there is no systematical answer to how a startup can and should be valued, the Discounted Cashflow (DCF) method, Venture Capital method, or the use of multiples present some of the most popular approaches (Miloud, Aspelund, and Cabrol 2012). As edu-cloud does not present the “bread and butter” VC case, and no similar offers exist on the market yet, the two latter methods have been waived for valuation, and the DCF method was considered the most appropriate approach (see *Appendix 10.22*). Due to edu-cloud's low asset intensity and its organic generation of cash flows, no additional funding (apart from the initial 135.000€ business angel contribution in the first year) is expected to be needed to start and maintain operations. The current company value stands at 53.5€ Mio and is expected to increase to 83.9€ Mio over the next 5, 120.9€ Mio over the next ten, and 139.9€ Mio over the next 15 years. This growth trajectory is in line with edu-cloud's vision to build a long-term sustainable, profitable business without putting high growth and scale first.

Figure 15 compares investors' required Internal Rate of Return (IRR) with their actual IRR over different investment periods and, thus, company valuations. It shows that investors can expect an IRR between 10% and 118% (without follow-up investment) depending on their investment horizon. If no liquidity event happens within an investment horizon, investors and employees are offered a buy-back, financed out of organic cash flows. Thus, it will be subject to a cap depending on actual cash

flow development. This underlines the desired long-term commitment of business angels who are not eager to realize short-term, high-multiple returns but primarily see themselves as an

Actual IRR vs. required IRR (w/o FU-Investment)					
Required IRR	Investment Period				
	3	5	10	15	
10%	10%	10%	10%	10%	10%
15%	15%	15%	15%	15%	15%
20%	20%	20%	20%	20%	20%
25%	25%	25%	25%	25%	22%
30%	30%	30%	30%	30%	22%
35%	35%	35%	35%	33%	22%
40%	40%	40%	40%	33%	22%
45%	45%	45%	45%	33%	22%
50%	50%	50%	50%	33%	22%
55%	55%	55%	55%	33%	22%
60%	60%	60%	60%	33%	22%
65%	65%	65%	65%	33%	22%
70%	70%	66%	66%	33%	22%
75%	75%	66%	66%	33%	22%
80%	80%	66%	66%	33%	22%
85%	85%	66%	66%	33%	22%
90%	90%	66%	66%	33%	22%
95%	95%	66%	66%	33%	22%
100%	100%	66%	66%	33%	22%
150%	118%	66%	66%	33%	22%
200%	118%	66%	66%	33%	22%
250%	118%	66%	66%	33%	22%
300%	118%	66%	66%	33%	22%
350%	118%	66%	66%	33%	22%
400%	118%	66%	66%	33%	22%
450%	118%	66%	66%	33%	22%
500%	118%	66%	66%	33%	22%
550%	118%	66%	66%	33%	22%
600%	118%	66%	66%	33%	22%
650%	118%	66%	66%	33%	22%
700%	118%	66%	66%	33%	22%
750%	118%	66%	66%	33%	22%
800%	118%	66%	66%	33%	22%
850%	118%	66%	66%	33%	22%

Figure 15: Data Table – Actual IRR without Follow-up Investment vs. Required IRR vs. Investment Period (assumed cap at 2% of DCF valuation)

essential building block of realizing edu-cloud's vision. They will also get the opportunity to top up their equity contribution and share over the following years; however, a combined founder's share of at least 55% will always be insured. A detailed overview of returns, equity stakes, future investment values, and corresponding investment periods for different scenarios can be found in *Appendix 10.23 to 10.29*. The Appendices also demonstrate that edu-cloud's envisioned shareholder structure leaves enough equity space to onboard new investors if needed without the founders being diluted to an extent endangering majority ownership. At the same time, it still holds sufficient upside potential for existing and new investors.

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10. Appendix

10.1: Table of Contents

1.	Introduction	2
1.1.	Business Problem and Relevance	2
2.	Company Description	3
2.1.	Products and Services	3
2.1.1.	Background	3
2.1.2.	edu-cloud Platform	3
2.1.3.	edu-cloud Toolkits	4
2.1.4.	edu-cloud Ecosystem	4
2.2.	Mission and Vision	5
2.3.	Team and Founders	5
2.4.	Long-term Orientation of Business and Strategic Objectives	6
3.	Market Analysis	8
3.1.	Target Market	8
3.2.	Market Sizing, Valuation, and Capture	8
4.	Customer Persona and Competitiveness	10
4.1.	Customer Persona	10
4.2.	Competition and Competitiveness	12
5.	Marketing and Sales Strategy	15
5.1.	Marketing Strategy	15
5.2.	Sales Strategy and Revenue Sources	16
5.3.	Pricing and Revenue Model	17
6.	Product and Technology Roadmap	18
7.	Financial Projections (2023-2025)	19
7.1.	Assumptions	19
7.1.1.	Seasonality	19
7.1.2.	Sales Pipeline	19
7.1.3.	Customer Lifetime	20
7.1.4.	Personnel Expenses	20
7.1.5.	Marketing and Advertising	21
7.1.6.	Research and Development	21
7.1.7.	Investments and Depreciation	21
7.2.	Profit and Loss Accounts	22
7.3.	Cashflow Projections	22
8.	Funding Requirements	23
8.1.	Source of Funds	23
8.2.	Use of Funds	24
8.3.	Shareholder Structure and Exit strategy	24
9.	References	27
10.	Appendix	30

10.2 Company Description: Envisioned Features of the edu-cloud Platform

- Log-in function and personal spaces for saved educational offers, activity overview, personalized suggestions, and gamification (i.e., different digital expert levels based on activity, given reviews, etc.).
- Comprehensive product information, incl. ratings, reviews, demos, actionable advice for usage and best practices, direct contact possibility, etc.
- Community corner with different blogs and content corners and the possibility for discussions and best practice sharing among users.
- Search bar based on personalized search algorithms (i.e., depending on a digital native level, federal state, previously viewed/rated offers, etc.).
- App-Store: It is important to note that all listed edu-cloud offers will go through an in-depth assessment concerning 1) GDPR-compliance, 2) child/youth suitability, and 3) pedagogical impact. This ensures a high-quality curation of offers and positions edu-cloud as an education "App Store" based on which all users can download new tools to their pupil's/children's devices without having second thoughts.

10.3 Company Description: Team and Founders

Founders and Managing Directors (MD)

Verena Pausder: Founder and MD



Verena Pausder is one of the best-known faces of the German startup scene. She is an entrepreneur, investor (30+ business angel investments), digital education expert, author, and founder of Fox & Sheep (developer and provider of children's Apps) and the HABA Digital Werkstätten (creative educational and experiential space for children, families, schools, and companies). In 2017, she founded Digitale Bildung für Alle e.V. (non-profit organization with the mission to create new chances via new education). During the Corona period, she put homeschooling-

corona.com online and initiated the country's largest education hackathon, #wirfürschule ("#weforschool"). For this, she was honored by Handelsblatt (leading economic and finance newspaper in Germany) and BCG as 2020 thought leader. In 2016, she was named a Young Global Leader by the World Economic Forum. In 2018, she was included in Forbes Europe's Top 50 Women in Tech list. Furthermore, she is on the advisory board of DELIUS (textile manufacturer founded in 1722, 300 employees, 60 Mio revenue per year) and Röhlig Logistics (founded 1852, 2.300 employees, 2.5 bn revenue per year), a university counselor at CODE University in Berlin, and founder of the #stayonboard initiative.

Louisa Strasser: Co-Founder and MD



Louisa Strasser holds a B.Sc. in International Management from ESB Business School (awarded #1 German university of applied sciences for International Business Management in the WirtschaftsWoche ranking (leading German economic newspaper), a B.A. in Global Business from Dublin City University, and currently pursues an M.Sc. in Business Analytics at NOVA SBE (awarded #1 executive educational institution in Portugal and #22 worldwide in the Financial Times ranking). She previously worked in Project Management at Mercedes, Business Development at EMIL Group (InsurTech scale-up), Consulting at BCG, and was part of the Pre-Seed investment team at Picus Capital (leading European VC investor with 150+ portfolio companies).

Team



Christa Dahl: Head of Customer Success and Partnerships

Christa holds a B.Sc. in Economics from the University of Göttingen and an M.Sc. in Applied Business Languages from the University of Bremen. She is an expert in digital education, a teacher, and board member of the Digitale Bildung für Alle e.V. She has 10+ years of experience in project and CSR management.

Previously, she worked as a project manager at EuroGroup (global leader in sourcing solutions), Head of the Corporate Responsibility department at Wünsche Group (international service and trading company), and Executive Assistant at BOSCH.



Samuel Kuhn: Head of Digital Strategy and Web- & Cloud Development

Samuel holds a B.Sc. in Engineering and Application Management from the dual university of Baden-Württemberg (awarded #1 in the ranking of universities of applied sciences by the management magazine) as well as an M.A. in Corporate Media from the University of Leipzig. He is a consultant on state-of-the-art solutions in the area of sales and marketing at Siemens. With his agency, qn-concept, he developed and designed 50+ web applications. Furthermore, he provides independent consultation services in social media and communication.

Please see the section *Staffing and Operations* to find more details on individual responsibilities, edu-cloud's future hiring plan, and how potential skill gaps will be filled.

Board and Advisors

The edu-cloud team is complemented by a strong set-up of advisors: serial entrepreneurs, education experts, and Tech and AI leaders. As such, they will help build up edu-cloud's momentum by supporting operational and strategic decision-making. The advisory board includes:

Max Maendler: Max is an entrepreneur, business angel, and founder of eduki (leading platform for teaching materials in German-speaking countries) and Regis24 (online credit agency). Furthermore, he co-initiated #wirfürschule.

Franziska Schmid: Franziska is a German entrepreneur and founder and managing director of Junge Tüftler (organization combining education for sustainable development with digital education).

Jürgen Möller: Jürgen is a teacher and educator who has developed a home learning training program that has already reached over 10,000 students and strengthened their future skills.

Nicole Büttner: Nicole Buettner is an AI entrepreneur, investor, and board member. She is the founder and CEO of Merantix Momentum, an IT company specializing in artificial intelligence. She is also on the management team of Merantix AG, an AI venture studio that incubates AI companies and has been named one of the top 10 AI startups multiple times by Forbes and Bilanz, among others.

10.4 Company Description: Current Partner Network of Digitale Bildung für Alle e.V.



10.5 Company Description: SWOT Analysis

S

- **Strong problem-solution fit and highly competitive product** – Differentiating USPs (*see Competiton and Competitiveness*)
- **Strong founders-market fit** – Founded by experienced entrepreneur and business student bringing in the right mixture of expertise, experience as well as a fresh but committed view of current pain points and challenges
- **Highly scalable product** – Once network effects materialize via solid partner- and user base

W

- **High initial investment necessary** – Platform development, personnel, marketing, and off- & online content production demand high upfront costs
- **Highly dependent on network effects** – Key revenue sources such as subscriptions and premium partner profiles will only substantially materialize once a trusted brand and strong community have been created
- **Niche market** – No competitors serving as comparison or orientation

O

- **Tech-driven core product** – Highly attractive and scalable technological infrastructure for extending offering and opening up new revenue streams (customer and pricing analytics, moving into adjacent verticals such as professional orientation etc.)
- **Covid-19 and increased awareness** – The pandemic increased awareness of the opportunities and current lack of digital educational offers leading to a boosted EdTech market as well as an increase in governmental spending (i.e., DigitalPakt)

T

- **Limited willingness to pay** – Schools are often facing budgetary constraints and teachers might not be willing to purchase offers themselves
- **Dependence on first-movers** – Many educators are still resistant to digital education and, thus, the edu-cloud products and ecosystem need to be “indirectly brought in” via strong enthusiasts
- **Long-term balancing of transparency and partnerships** – Careful consideration of partnerships while ensuring reliable database and neutral algorithms without preferential treatments

10.6 Market Analysis: Market Size per Geography and Target Group

Nr. of Schools (K-12 from primary to secondary education)	2023	2024-2028	2029	2029+
Market Size Germany	30.370	30.370	30.370	30.370
Market Size DACH region (excl. Germany) + UK		46.480	46.480	46.480
Market Size Italy, France & Spain			106.867	106.867
Market Size EU (excl. previous expansions)				170.784
TOTAL MARKET SIZE	30.370	76.850	183.717	354.501

Nr. of Teachers	2023	2024-2028	2029	2029+
Market Size Germany	955.000	955.000	955.000	955.000
Market Size DACH region (excl. Germany) + UK		853.198	853.198	853.198
Market Size Italy, France & Spain			2.060.044	2.060.044
Market Size EU (excl. previous expansions)				1.331.758
TOTAL MARKET SIZE	955.000	1.808.198	3.868.242	5.200.000

Nr. of EdTech Companies*	2023	2024-2028	2029	2029+
Market Size Germany	409	476	555	647
Market Size DACH region (excl. Germany) + UK		1.726	2.010	2.342
Market Size Italy, France & Spain			750	874
Market Size EU (excl. previous expansions)				964
TOTAL MARKET SIZE	409	2.202	3.315	4.826

*Assumption: 50% of companies match the criteria of being high-quality & focused on school education

10.7 Market Analysis: Assumed Product Splits

Teacher Toolkits	Price per month	Split
Tool-Kit 1	14,99 €	70%
Tool-Kit 2	24,99 €	30%

School Toolkits	Price per year	Split
Tool-Kit 1	2.499,00 €	70%
Tool-Kit 2	3.499,00 €	30%

Partnership Products	Price per year	Split
Premium Platform Profile	2.999,00 €	30%
Bronze	1.999,00 €	40%
Silver	3.999,00 €	20%
Gold	5.999,00 €	10%

10.8 Market Analysis: Market Valuation per Target Group

Schools (K-12 from primary to secondary education)	2023	2024-2028	2029	2029+
Market Valuation Germany	85.005.630	85.005.630	85.005.630	85.005.630
Market Valuation DACH region (excl. Germany) + UK		130.097.520	130.097.520	130.097.520
Market Valuation Italy, France & Spain			299.120.282	299.120.282
Market Valuation EU (excl. previous expansions)				478.023.977
TOTAL MARKET VALUATION	85.005.630	215.103.150	514.223.432	992.247.408

Teachers	2023	2024-2028	2029	2029+
Market Valuation Germany	4.295.113	4.295.113	4.295.113	4.295.113
Market Valuation DACH region (excl. Germany) + UK		3.837.258	3.837.258	3.837.258
Market Valuation Italy, France & Spain			9.265.048	9.265.048
Market Valuation EU (excl. previous expansions)				5.989.582
TOTAL MARKET VALUATION	4.295.113	8.132.371	17.397.418	23.387.000

EdTech Companies	2023	2024-2028	2029	2029+
Market Valuation Germany	1.267.491	1.476.627	1.720.270	2.004.115
Market Valuation DACH region (excl. Germany) + UK		5.347.325	6.229.633	7.257.522
Market Valuation Italy, France & Spain			2.324.250	2.707.751
Market Valuation EU (excl. previous expansions)				2.987.403
TOTAL MARKET VALUATION	1.267.491	6.823.952	10.274.154	14.956.792

10.9 Market Analysis: Market Capture per Target Group

Schools (K-12 from primary to secondary education)	2023	2024-2028	2029	2029+
Market Capture Germany	425.028	759.093	1.269.127	1.522.953
Market Capture DACH region (excl. Germany) + UK		1.161.760	1.942.346	2.330.815
Market Capture Italy, France & Spain			3.126.089	3.751.307
Market Capture EU (excl. previous expansions)				5.994.962
TOTAL MARKET CAPTURE	425.028	1.920.854	6.337.562	13.600.037

Teachers	2023	2024-2028	2029	2029+
Market Capture Germany	17.180	163.661	70.401	89.057
Market Capture DACH region (excl. Germany) + UK		146.215	62.896	79.564
Market Capture Italy, France & Spain			106.304	134.474
Market Capture EU (excl. previous expansions)				86.934
TOTAL MARKET CAPTURE	17.180	309.876	239.601	390.029

EdTech Companies	2023	2024-2028	2029	2029+
Market Capture Germany	25.350	69.437	166.068	251.511
Market Capture DACH region (excl. Germany) + UK		251.453	601.385	910.798
Market Capture Italy, France & Spain			157.062	237.870
Market Capture EU (excl. previous expansions)				262.437
TOTAL MARKET CAPTURE	25.350	320.890	924.515	1.662.616

10.10 Market Analysis: Industry Overview and Market Trends

To enhance learning and teaching in the classrooms and beyond, EdTech refers to hardware and software that is used to educate students digitally. By leveraging technology for learning and teaching, EdTech products and services help students overcome obstacles to comprehensive education and improve their educational outcomes. As a digital companion for finding such hard- and software and ultimately effectively using them, edu-cloud operates in the EdTech sector. The size of the global market for EdTech was estimated at USD 106.46 billion in 2021 and is anticipated to increase at a CAGR of 16.5% from 2022 to 2030 (Grand View Research 2021). Besides the growing awareness and experienced "tech boom" due to the Covid19 pandemic, this trend is further accelerated by the following developments:

In 2021, the K-12 sector led the market, accounting for more than 40% of worldwide sales. The large proportion is due to the rising trend of game-based learning in the K-12 sector. Most K-12 instructors support gamification projects in schools to improve students' learning skills by incorporating practical, project-based work. Integrating technology in this area also allows for immersive material and experiences, such as virtual field excursions and sophisticated lab-based experiments, resulting in an engaging learning experience (Grand View Research 2021; Future Market Insights 2022). Increasing student involvement has become one of educators' top priorities. As a result, market players addressed these concerns by introducing digital devices such as interactive whiteboards and switching from projector-based displays to touchscreen displays. Thus, these so-called "smart classrooms" are accelerating the expansion of the EdTech

business, increasing students' involvement and resulting in higher academic performance (Fortune Business Insights 2022).

However, schools must first be equipped with digital infrastructures, such as fast Wifi and tablets, before EdTech software and tools can be used. The digitization of schools differs among geographies, and Scandinavia is often seen as a pioneer in that respect. There, the corresponding infrastructure is available almost nationwide (Kreusel and Meidinger 2022). However, other EU countries are increasingly following suit by increasing government spending to equip schools with the necessary infrastructure with programs such as the 6.5bn DigitalPakt in Germany.

Concerning end-user trends, in 2021, the business segment led the market with a 65% global revenue share. This can be attributed to an upsurge in partnerships among educational institutes, EdTech firms, and content creators holding significant opportunities and increasingly becoming a critical part of the digital education sector. As described above - one of the main drivers of edu-cloud's reach and success will be the continuous build-up of partnerships. Thus, edu-cloud can take advantage of this development. At the same time, public and private offerings are increasingly competing against each other, and edu-cloud can profit from both by positioning itself as a partner for both sides (see *Competition and Competitiveness*).

Furthermore, the consumer segment of EdTech offerings is expected to experience significant growth in the following years. This will be driven by the growing awareness among students, parents, and teachers of the chances and opportunities of digital educational offerings (Grand View Research 2021). Children need to be empowered to become responsible citizens of tomorrow and learn the necessary skills and tools to live and work in a digital world in a self-determined way, regardless of their social background.

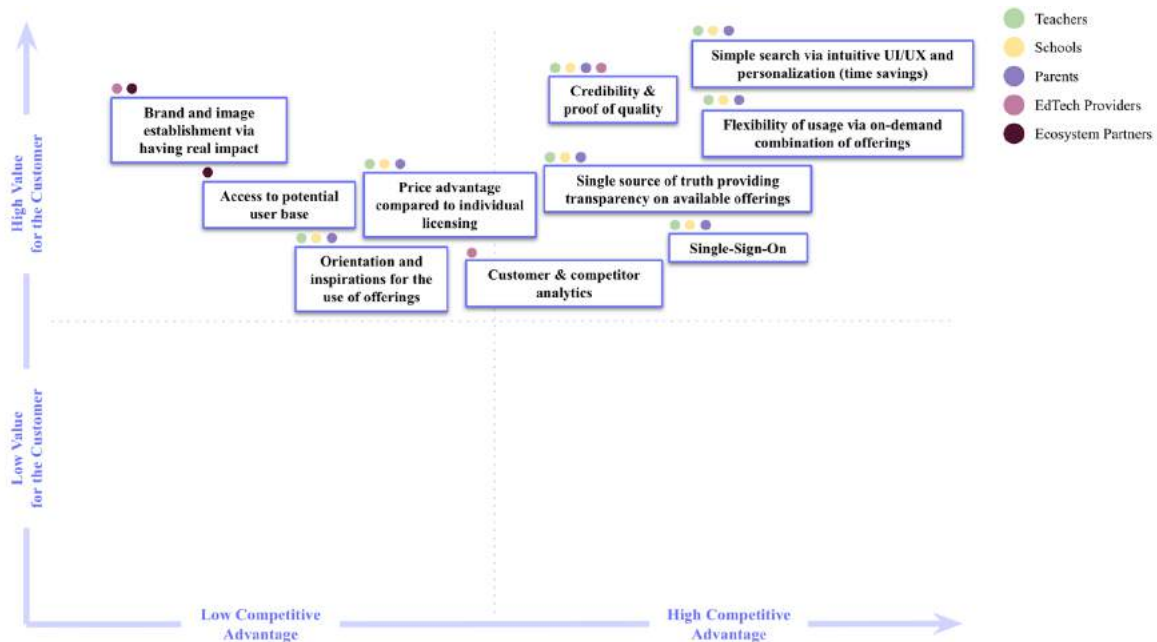
To sum up, the market conditions for edu-cloud's offering are favorable and demonstrate a clear "why now". Simultaneously, upcoming challenges such as increased immigration and teacher

shortage make the accessibility and penetration of digital educational tools indispensable (Dettmers 2022). They relieve teachers and open up new possibilities for personalization and inclusion (i.e., personalized learning paths, automatic translation services, etc.).

10.11 Customer Persona and Competitiveness: List of Conducted User and Expert Interviews

Name	Role	School/Company	Date	Category	Call Quality
Rupert G.	Head of BLZ	Bavarian State Center for Political Education (BLZ)	29.10.22	Expert	Medium
Nick S.	Teacher (primary education)	Grundschule Grünwald	29.10.22	User	High
Silke M.	School principal + political ambassador for digital education	Waldschule Hatten	29.10.22	User	High
Rieke S.	Teacher (secondary education)	Berufskolleg	29.10.22	User	High
Christa D.	Teacher (primary education)	DLZ Fachschaft	30.10.22	User	High
Stephan B.	Teacher (secondary education)	Staffelsee Gymnasium Murnau	04.10.22	User	High
Stephan S.	Teacher + representative school director (secondary education)	Gymnasium Weilheim	04.10.22	User	High
Julia S.	Teacher + IT administration spokesperson (secondary education)	Staffelsee Gymnasium Murnau	06.10.22	User	High
Renate K.	School principal (primary education)	Grundschule Geretsried	07.10.22	User	High
Tosca S.	Teacher (primary education)	Grundschule	07.10.22	User	High
Anna H.	Media educationist	Grundschule MUTIG	11.10.22	User	High
Sebastian P.	Teacher + media advisor (primary education)	Grundschule Grünwald	12.10.22	User	High
Jeannette K.	Teacher + media advisor (primary education)	Dr. Wilhelm Schmidt Grundschule	12.10.22	User	Medium
Julia B.	School principal (secondary education)	Buhmannschule Hildesheim	17.10.22	User	High
Anna U.	Teacher (primary education)	Albert Schweitzer Grundschule	20.10.22	User	Medium
Anita S.	CEO + former teacher	MedienLB (leading provider of digital media/content for schools)	21.10.22	Partner	High
Amruth B.	Entrepreneur in Residence	Merantix	21.10.22	User	High
Sakine Y.	Schulleiterin (primary education)	Reinhold Burger Schule	24.10.22	User	High
Sebastian L.	Project Coordinator DIRECTIONS	Karlsruher Institute of Technology (KIT)	26.10.22	Partner	High
Tracy K.	CEO	#wirfürschule	1.11.22	Partner	High
Annie D.	Founder & CEO	Scobees (LMS)	03.11.22	Partner	High
Jessica S.	Teacher (primary education)	Grundschule Hutten	10.11.22	User	High

10.12 Customer Persona and Competitiveness: Competitive Advantage and Customer Value



10.13 Customer Persona and Competitiveness: In-depth Assessment of Competitor Groups

Search Engines and Platforms

Competitiveness	Name	Geographic focus	Description
Search Engines and Platforms			
(+) Currently: Search bar enabling search for granular key words (-) no personalization (-) no nice UI/UX (very unstructured) (-) no actionable guidance/advice (-) no SSO (-) directly forwarded to websites, no superior information	Edugle	Germany	Search engine for solutions in education.
(+) Log-in Function (saving of offers) (+) ok but not stellar UI/UX (+) curation of offerings (only high-quality) (-) focus on digital media not tools/software etc. (-) no actionable guidance/advice	Mundo	Germany	Freely accessible media portal MUNDO is realized by the FWU Institut für Film und Bild in Wissenschaft und Unterricht gGmbH, the media institute of the German states, as part of the SODIX project. It is commissioned by the 16 federal states and is funded by the DigitalPakt Schule. With MUNDO, they want to support learners, teachers and educators in their daily work. To do this, they sift through digital media that are freely available on the web and check them against the educational standards for use in the classroom. This guarantees that open, licensed and quality-checked materials can be found centrally and that teachers can use them in a legally compliant manner.
(+) Currently: Search bar enabling search for granular key words (+) nice UI/UX (-) no personalization (-) no actionable guidance/advice (-) no SSO (-) directly forwarded to websites, no superior information	Find my tool	Germany	Collaborative and growing collection of digital tools.
(-) no personalization (-) no nice UI/UX (-) not as comprehensive (-) most times w/o advice (-) no access/toolkit/flexibility	Self-created help tools	International	Helpful overviews created by teachers/parents to give inspiration & orientation (e.g. this one) or official website listing digital tools.
=> No nice UI/UX, no personalization, missing actionable advice => No own product/Toolkits			

Communities and Alliances

Competitiveness	Name	Geographic focus	Description
Communities and Alliances			
(-) focused on fostering exchange w/o own product (-) no focus on edu-cloud's target group e.g. via interactive format/continuous engagement	European EdTech Alliance	EU	Consortium of national trade associations and clusters working with founders and providers of EdTech, to support the domestic and international growth of Edtech and innovation in education. Formed in 2019, the EEA meets monthly to share best practice, compare research findings, development and policy insights, discuss common challenges and concerns and highlight areas of opportunity within our respective markets and beyond.
(+) strong ecosystem/community approach incl. Premium memberships (quite similar to edu-cloud) (-) no focus on digital education (-) no own product	Edusia	Germany	Digital network connecting people and organizations from all educational sectors (Schools, universities, publishers, education startups, foundations, associations, NGOs). Permanent platform to exchange ideas, develop new ideas, and draw attention to their own events and products.
(-) no innovative/modern approach (-) no focus on edu-cloud's target group e.g. via interactive format/continuous engagement	Didacta	Germany	Germany's largest education fair.
(-) no innovative/modern approach (-) no focus on edu-cloud's target group e.g. via interactive format/continuous engagement	Expo E-Learning	Spain, Latin America	e -Learning, Edtech, ICT and HR event/conference.
(-) no innovative/modern approach (-) no focus on edu-cloud's target group e.g. via interactive format/continuous engagement	IEEE	EU, Middle East, Africa	Conference, provides an opportunity to scientists, professional engineers, and students to present their work, publish their results, exchange ideas and network for future scientific and industrial collaborations.
(-) no innovative/modern approach (-) no focus on edu-cloud's target group e.g. via interactive format/continuous engagement	EDULEARN20	International	International Conference on Education and New Learning Technologies.
(-) no innovative/modern approach (-) no focus on edu-cloud's target group e.g. via interactive format/continuous engagement	EAIE	EU	European Association for International Education hosting annual conference/exhibition.
(-) no innovative/modern approach (-) no focus on edu-cloud's target group e.g. via interactive format/continuous engagement	Frankfurt EDU	Germany	The educational format of the Frankfurt Book Fair also hosting conferences.
(-) no focus on digital education	#wirfürschule	Germany	Initiative conducting hackathons and other formats to collaboratively build the vision of the school of tomorrow.
(-) Initiative sharing the same mission but w/o offering own product/service	iddb	Germany	Initiative of German Digital Education Providers (iddb) to highlight the potential of digital education offerings. More than 60 digital education companies, initiatives and associations have joined forces to establish digital education as a relevant part of the education system, to advocate for equal opportunities for students, and to actively offer their support to policymakers.
(+) "knowledge-hub" offering best practices and orientation incl. conferences (-) no own product	DLEARN	EU	European Digital Learning Network ETS (DLEARN) and its members participate in many transnational initiatives to boost digital learning and digital skills both at the European and local level. DLEARN operates mainly through its working groups which are constantly monitoring, analyzing and promoting the latest news in terms of digital learning and skills.
=> No innovativeness, not modern, missing strong community (esp. parents/schools/teachers) via interactive formats/engagement, not known by anyone in expert interviews => Either no clear focus on digital education or not focusing on the target group of schools/parents/teachers			

Politically Initiated Projects

Competitiveness	Name	Geographic focus	Description
Politically Initiated Projects			
(+) highly competitive as a platform with SSO for digital educational offers (-) no actionable guidance/advice (-) not launched yet (-) no Toolkits/Flexibility	BIRD		The BIRD project started at the beginning of April 2021 in a network of nine partners coordinated by the University of Potsdam. The German Federal Ministry of Education and Research (BMBF) is funding BIRD as "the first prototype of a technical infrastructure for a digital education platform. According to the BMBF, the platform will "act as a hub to integrate educational platforms and services throughout Germany" and "establish common standards. In the future, the NBP will provide learners (and teachers) with access to a wide variety of digital educational offerings within a uniform platform, which will be connected to this platform or accessible via this platform without the need for renewed logins - and this with educational offerings across the entire educational lifecycle.
(+) Strong competition for SSO (-) solely SSO (-) not launched yet	VIDIS	Germany	SSO solution. VIDIS enables students and teachers to log in with their existing user account of their state portal to access a variety of digital educational offerings. VIDIS sets binding standards for educational offerings to ensure privacy-compliant access to educational offerings. VIDIS enables digital education providers to use a single technical, legal and organizational interface. The goal is to create a secure teaching and learning environment for schools, which through VIDIS have the opportunity to choose from a variety of different applications for their teaching, preparation and follow-up. Launched in 2021, not available yet.
(-) sole focus on DSGVO	DIRECTIONS	Germany	The German Federal Ministry of Education and Research (BMBF) has initiated the project "Data Protection Certification for Educational Information Systems". The aim of the DIRECTIONS project is to design, implement and test a sustainable data protection certification for school information systems in accordance with the General Data Protection Regulation (GDPR). The research project focuses in particular on learning applications and content platforms, but also takes into account necessary learning infrastructures such as virtual classrooms, video conferencing systems, and systems for supporting teaching. DIRECTIONS is being carried out by the Karlsruhe Institute of Technology, the University of Kassel, and datenschutz cert GmbH with the support of many associated partners from the education sector and is being funded by the BMBF with around 6.3 million euros.
(+) Strong competition for certification/proof-of-quality of educational offers (-) not launched yet (-) no personalization (-) no actionable advice (-) no flexibility	eduCheck digital	Germany	The federal states have launched the "eduCheck digital" project to develop a joint testing procedure for digital educational media. The aim of the project is to develop criteria, standards, procedures and technical systems for testing digital educational media so that they can be used in the classroom in a technically reliable and legally compliant manner. The Media Institute of the Federal States, FWJ - Institute for Film and Image in Science and Education, has been commissioned to implement the project. The project will be financed with funds from the DigitalPakt Schule (Digital Pact for Schools) amounting to around 2.5 million euros. The state of Rhineland-Palatinate is in charge of the project.
(+) actionable guidance and advice (+) very comprehensive (+) SSO (+) Bavaria only (-) no personalization (-) no Flexibility/direct access to offers	bayerncloud schule	Germany (Bavaria only)	BayernCloud School (ByCS) is the platform for teaching, communication, collaboration, advanced training, organization and administration. Integrated database offering concrete examples of tasks for the use of digital tools and materials in the classroom. Tasks that take into account the specific competencies and frameworks needed in the 21st century living environment.
(+) integrated into bayerncloud (+) LMS + materials + information/advice (-) materials focused on digital media (-) Interviews: Not intuitive/modern, barely used (-) no personalization (-) Bavaria only	mebis	Germany (Bavaria only)	The mebis info portal contains articles on media didactics and media education topics as well as help on all mebis sub-services. The access-protected mebis Media Library contains approximately 60,000 digital educational media. This includes video and audio content from public broadcasters and municipal media centers. The mebis learning platform is a privacy-compliant learning management system based on moodle. It represents the core of the portal, where teachers provide assignments and materials. It also includes a chat function. To create assignments, teachers have the option of creating interactive content using H5P (software for creating interactive (learning) content for the web). Available forms of content include videos or presentations with embedded quizzes of various kinds, timelines, or a memory game.
=> Each initiative only covering some part of edu-cloud's offering => Very slow and bureaucratic development, barely bearing any fruits (esp. based on expert interviews) => In competition with private offerings, edu-cloud sees itself a partner to both parties (Plug-in) => edu-cloud currently still lacks political validation/certification, would be huge level to speed up credibility/proof of quality (e.g. Cooperation with VIDIS for SSO & Extending DIRECTIONS & eduCheck (at least the goal is to achieve same credibility i.e. via using same standards)			

10.14 Marketing and Sales Strategy: Detailed Promotion and Communication Strategy

Online Marketing Communication

Pursued online marketing activities can be divided into three categories: search engine marketing, content marketing, and social media marketing. First, edu-cloud will extensively use search engine advertisements for related search engine queries. This will cover phrases such as "digital education", "digital learning", "homeschooling", and "digital classroom". The competitor analysis and keyword research showed that there is generally a low level of competition concerning the bidding for related search terms and comparably high search volume, presenting beneficial circumstances. In addition to active online measures, passive online visibility will be promoted through SEO to improve edu-cloud's organic ranking

regardless of paid ads for the abovementioned keyword searches. This is primarily driven by a content marketing strategy integrating traffic-generating keywords on its website.

The content marketing strategy supports organic ranking and provides valuable information for users and potential customers. The content marketing strategy will mainly consist of the newsletter, blogs, and social media posts in the early stages. Later on, content in video and podcast format will be added. This story-telling approach reinforces edu-cloud's key value propositions and underlines its co-creative branding process.

Social media advertisements present the third part of edu-cloud's digital marketing strategy. Primary and secondary research revealed that its primarily targeted user profile of digital-receptive teachers actively uses their social media accounts. Instagram and Facebook are the two most commonly used apps (MDR Marketing Team 2018). Therefore, besides paid ads, cooperation with Facebook groups and teacher influencers on Instagram will present key pillars for social media marketing.

Offline Marketing Communication

edu-cloud's non-digital marketing strategy focuses on representing it at teacher training, educational fairs, and conferences. edu-cloud will first stick to the biggest and most popular fairs, such as didacta, before launching its own events and formats due to limited marketing budget (see *Financial Projections*). Such representations will be supported by branded edu-cloud banners, merchandise, goodies, and flyers to build a trustful user relationship from the beginning and incentivize word-of-mouth propaganda.

Furthermore, "early adopters" will become teacher ambassadors at their schools. This can, for instance, solely involve introducing edu-cloud to the staff or entail interactive workshops covering exemplary user journeys on how it is best used and what possibilities it holds for bringing digital tools to the classroom easily and effectively.

Campaigns and Promotions

Two main campaigns will take place each year. The first is before the start of the school year, which is expected to be the peak season for edu-cloud's product (see *Financial Projections*), and the second is shortly before Christmas. Also, to build up network effects, market launches will be accompanied by Freemium campaigns for the first sign-ups, and referral programs present a key pillar of the overall marketing strategy. *Figure 16* shows the expected marketing expenses in 2023, along with the number of new sales.

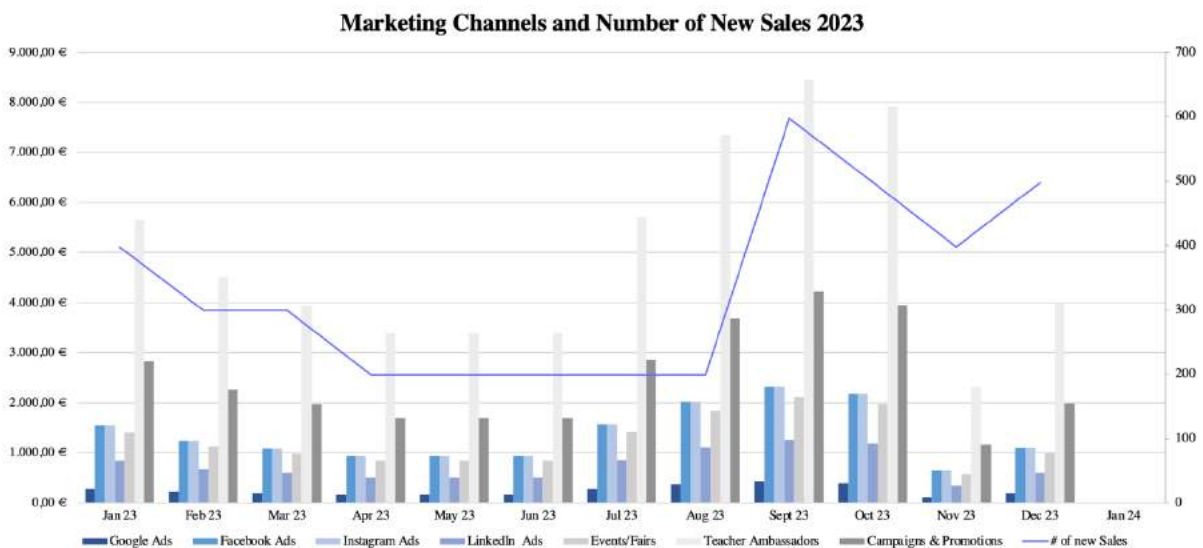


Figure 16: Marketing Channels and Number of New Sales 2023

10.15 Technology Roadmap: Details on Short- to Long-Term Generation of Data Points and Functionalities

Short term

Data Points

- Available data points
 - General
 - Filter "tags"
 - Number of clicks per filter/categories/subpages/offers
 - User-specific
 - Dwell time
 - Clicked filters/categories/subpages/offers
 - Country
 - State
 - Browser
 - Operating System

Functionalities

- Through currently already available data points such as stored filter categories and click behavior:
 - Relevant search
 - "Users who clicked XY also liked..."
 - "Similar offers to XY"
 - Selection option "Sort by"
 - popularity (most clicked offers/filters)
 - alphabetically

Medium-term

Data Points

- Available data points
 - User-specific (profile)
 - Introducing a log-in function incl. profile info
 - Role (student, teacher, parent, principal, other)
 - Saved offers
 - Rating and comment history
 - One-time verification of users via edu-cloud log-in (SSO), allowing them to log in automatically to all certified offers
 - Landing pages (LPs) per offer
 - Further information/descriptions/possible applications
 - Price
 - Qualitative ranking across different categories/criteria + comments
 - In cooperation with providers
 - Cookies/website behavior on the provider side/in their application
 - Other
 - Web scraping of provider pages + clustering of content

Functionalities

- "Search bar" for offers/topics and direct playout of relevant offers (alias Producthunt)
- Gamification approaches (i.e., „digital expert levels“)
- Relevant search
 - Display offers with the highest ratings first
 - Automatic pre-filtering by role
- Personalized search (user + item-based)
 - Build and expand collaborative-filtering recommendations through specific user-offer mapping (if no ratings are available, based on clicks)
 - Expansion of content-based recommendations through more content on LPs + web scraping
- Partner Insights
 - Customer insights (persona + search/completion behavior)
 - Competitive Pricing

Long-term

- Available data points
 - In collaboration with providers
 - User behavior across offerings (e.g., in learning apps, on the website, etc.).
- Functionalities
 - Students: playing out personalized recommendations to make the learning process more holistic and efficient
 - e.g., student: "you seem to be very interested in science; in teech's circles, you can take the first step into this professional field and exchange ideas with mentors")
 - e.g., "70% of your class completed the simpleclub course XY, especially fractions caused problems. Math app XY has more courses for this, and you can find extensive learning materials on this topic on XY."
 - edu-cloud as a "digital companion" that takes users individually by the hand depending on their role/needs when searching for and using offerings (e.g., in the first step through question catalog/decision tree and iterative development and expansion of a machine learning algorithm)

10.16 Product and Technology Roadmap: Technical Partners

The edu-cloud Platform will be developed with a web design development agency showing a solid track record with former high-profile customers. Especially in the beginning, a close collaboration enables the implementation of design and functional modifications quickly, which is essential to respond to customer and partner feedback effectively. Furthermore, edu-cloud will enter a development partnership with Merantix, a leading German AI venture development studio. Merantix will be a sparring partner for developing search and personalization algorithms and MVPs for A/B testing, such as a personalized teacher questionnaire based on a decision tree algorithm. However, platform development will increasingly be shifted in-house in the long term.

edu-cloud's platform presents the front end, which is connected to the cloud-based database via Application Programming Interfaces (APIs). Amazon Web Services (AWS) will become edu-cloud's cloud service provider for performance, security, and scalability reasons. It offers a data security service that includes encryption and key management, threat detection, and continuous monitoring of accounts and workloads. Furthermore, since the respective servers are located in

Ireland, the European Union's General Data Protection Regulation (GDPR) applies and protects the personal data of edu-cloud users (Amazon Web Service 2022).

10.17 Financial Projections: Staffing and Operations

Staffing

For edu-cloud to be successful, the following operational areas need to be covered: Business understanding, engineering and data analytics, marketing, sales, and customer success, as well as high-quality content generation and maintenance (incl. translation service for digital-classroom.co.uk). As the current team showed a skill gap in marketing and content management as well as technical expertise, two additional full-time employees, namely, a Head of Marketing & Content and a Senior Software Engineer, will be hired in year one. Furthermore, a Sales & Customer Success freelancer and a working student supporting the peak season will support edu-cloud's operation. To meet the envisioned expansion and growth efforts, all departments will be continuously expanded from 2024 on. A detailed staffing plan from 2023 to 2025 can be seen in *Figure 17*. A yearly salary increase of 20% for the first founding team key hires, a 10% yearly increase for full-time, and a 5% yearly increase for part-time employees is included. The two founding members are financed by the EXIST scholarship (see *Funding Requirements*) over the first year and, thus, do not receive a salary from edu-cloud itself. Additionally, 25% of non-wage labor costs are added (Eurostat 2022).

Starting Date	Position	Wage/hour	Hours/week	Salary (monthly)	Annual (Start-)Sala	Number of months	2023	2024	2025
2023	Verena Pausler (Founder & MD)		40	5.000,00 €	60.000,00 €	12	- €	60.000,00 €	72.000,00 €
2023	Louisa Strasser (Founder & MD)		40	5.000,00 €	60.000,00 €	12	- €	60.000,00 €	72.000,00 €
2023	Christa Dahl (Head of Customer Success and Partnerships)		40	3.333,33 €	40.000,00 €	12	40.000,00 €	48.000,00 €	57.600,00 €
2023	Samuel Kuhn (Head of Digital Strategy and Web & Cloud Development)		40	3.333,33 €	40.000,00 €	12	40.000,00 €	48.000,00 €	57.600,00 €
2023	Sales Manager		40	3.750,00 €	45.000,00 €	12	45.000,00 €	49.500,00 €	54.450,00 €
2023	Senior Software Engineer		40	6.250,00 €	75.000,00 €	12	75.000,00 €	82.500,00 €	90.750,00 €
2023	Freelancer Sales & Customer Success	15,00 €	20	1.200,00 €	14.400,00 €	12	14.400,00 €	15.120,00 €	15.876,00 €
2023	Working Student (Aug-Oct)	12,00 €	15	720,00 €	2.160,00 €	3	2.160,00 €	2.160,00 €	2.268,00 €
2024	Senior Software Engineer		40	6.250,00 €	75.000,00 €	12		75.000,00 €	78.750,00 €
2024	Data Analysts		40	5.416,67 €	65.000,00 €	12		65.000,00 €	68.250,00 €
2024	Marketing & Content Manager		40	2.916,67 €	35.000,00 €	12		35.000,00 €	36.750,00 €
2024	Sales Manager		40	4.583,33 €	55.000,00 €	12		55.000,00 €	57.750,00 €
2024	Intern(s)	12,00 €	15	720,00 €	8.640,00 €	12		8.640,00 €	9.072,00 €
2024	Working Student (Aug-Oct)	12,00 €	20	960,00 €	2.880,00 €	3		2.880,00 €	3.024,00 €
2024	Freelancer Marketing & Content Management	15,00 €	20	1.200,00 €	14.400,00 €	12		14.400,00 €	15.120,00 €
2024	Freelancer Software Engineering	35,00 €	20	2.800,00 €	33.600,00 €	12		33.600,00 €	35.280,00 €
2025	Senior Software Engineer		40	6.250,00 €	75.000,00 €	12			75.000,00 €
2025	Data Analysts		40	5.416,67 €	65.000,00 €	12			65.000,00 €
2025	Marketing & Content Manager		40	2.916,67 €	35.000,00 €	12			35.000,00 €
2025	Sales Manager		40	4.583,33 €	55.000,00 €	12			55.000,00 €
2025	Customer Success Manager		40	4.583,33 €	55.000,00 €	12			55.000,00 €
2025	Intern(s)	12,00 €	15	720,00 €	8.640,00 €	12			8.640,00 €
2025	Working Student (Aug-Oct)	12,00 €	20	960,00 €	2.880,00 €	3			2.880,00 €
2025	Freelancer Customer Service	13,00 €	20	1.040,00 €	12.480,00 €	12			12.480,00 €
2025	Freelancer Marketing & Content Management	35,00 €	20	2.800,00 €	33.600,00 €	12			33.600,00 €
2025	Freelancer Software Engineering	13,00 €	20	1.040,00 €	12.480,00 €	12			12.480,00 €
2025	Freelancer Data Analyst	25,00 €	20	2.000,00 €	24.000,00 €	12			24.000,00 €
Total employees							8 (6 FTE)	16 (10 FTE)	27 (14 FTE)
Wages							216.560,00 €	654.800,00 €	1.105.620,00 €
Non Wage Labour cost							54.140,00 €	163.700,00 €	276.405,00 €
Total Labour Cost							270.700,00 €	818.500,00 €	1.382.025,00 €

Figure 17: Staffing Plan

Operations

edu-cloud is a SaaS provider, which means it is not linked to a production site or any other location. Given this flexibility and the high cost of renting an office, working from home will be the favored working mode. If needed for team workshops or offsites, flexible workspaces will be rented. This operation mode allows broader recruitment options, as high-potential candidates can be employed without geographical limitations. Regarding equipment and infrastructure, each full-time employee will be provided with a work cell phone and a laptop, including the Microsoft 395 Business Basic package. Microsoft Teams will be used for intra-team communication (see *Financial Projections*).

10.20 Financial Projections: Profit and Loss Statement – Best and Worst Case Scenarios

Scenario Summary		Current Values	50% Increase	40% Increase	30% Increase	20% Increase	10% Increase	10% Decrease	20% Decrease	30% Decrease	40% Decrease	50% Decrease
Changing Cells:												
<i>Change in Sales Volume</i>		0%	50%	40%	30%	20%	10%	-10%	-20%	-30%	-40%	-50%
Result Cells:												
NET INCOME AFTER TAXES		- 39.070 €	55.228 €	41.022 €	26.116 €	6.242 €	- 14.598 €	- 65.666 €	- 97.865 €	- 135.266 €	- 177.776 €	- 228.952 €
2023	EBITDA Margin	8%	39%	35%	30%	24%	17%	-2%	-15%	-32%	-55%	-87%
	EBIT Margin	6%	38%	33%	28%	22%	14%	-5%	-18%	-36%	-59%	-92%
	Net Earnings - Margin	-7,7%	7,2%	5,7%	3,9%	1,0%	-2,6%	-14,4%	-24,2%	-38,4%	-59,1%	-91,8%
2024	NET INCOME AFTER TAXES	437.399 €	1.176.875 €	1.028.980 €	881.085 €	733.190 €	585.294 €	286.646 €	156.351 €	7.469 €	- 183.168 €	- 358.868 €
	EBITDA Margin	31%	54%	51%	47%	43%	37%	23%	13%	0%	-17%	-41%
	EBIT Margin	30%	54%	50%	46%	42%	37%	22%	12%	-1%	-18%	-42%
	Net Earnings - Margin	25%	45%	42%	39%	35%	31%	18%	11%	-1%	-18%	-42%
2025	NET INCOME AFTER TAXES	524.371 €	1.628.139 €	1.407.385 €	1.186.631 €	965.878 €	745.124 €	303.617 €	72.540 €	- 163.814 €	- 426.070 €	- 688.325 €
	EBITDA Margin	25%	50%	46%	42%	37%	32%	16%	5%	-8%	-27%	-53%
	EBIT Margin	24%	50%	46%	42%	37%	31%	16%	5%	-9%	-28%	-54%
	Net Earnings - Margin	20%	42%	39%	35%	31%	26%	13%	4%	-9%	-28%	-54%

10.21 Financial Projections: Cashflow Statement – Best and Worst Case Scenarios

Scenario Summary		Current Values	50% Increase	40% Increase	30% Increase	20% Increase	10% Increase	10% Decrease	20% Decrease	30% Decrease	40% Decrease	50% Decrease
Changing Cells:												
<i>Change in Sales Volume</i>		0%	50%	40%	30%	20%	10%	-10%	-20%	-30%	-40%	-50%
Result Cells:												
2023	Net Cash Flow	- 6.763 €	27.740 €	20.839 €	13.939 €	7.038 €	137 €	- 13.664 €	- 20.564 €	- 27.465 €	- 34.366 €	- 41.266 €
	Ending Cash Balance	58.970 €	327.008 €	273.400 €	219.793 €	166.185 €	112.577 €	5.362 €	- 48.246 €	- 101.853 €	- 155.461 €	- 209.069 €
2024	Net Cash Flow	- 57.886 €	894.334 €	703.890 €	513.446 €	323.002 €	132.558 €	- 248.330 €	- 438.774 €	- 629.218 €	- 819.662 €	- 1.010.106 €
	Ending Cash Balance	31.084 €	1.251.342 €	1.007.290 €	763.238 €	519.187 €	275.135 €	- 212.968 €	- 457.020 €	- 701.071 €	- 945.123 €	- 1.189.174 €
2025	Net Cash Flow	- 29.577 €	1.468.906 €	1.169.209 €	869.513 €	569.816 €	270.120 €	- 329.273 €	- 628.970 €	- 928.666 €	- 1.228.363 €	- 1.528.059 €
	Ending Cash Balance	31.507 €	2.750.247 €	2.206.499 €	1.662.751 €	1.119.003 €	575.255 €	- 512.241 €	- 1.055.989 €	- 1.599.737 €	- 2.143.485 €	- 2.687.233 €

10.22 Funding Requirements: Three-stage DCF Model

Input Parameters

Sales in year 0	516.157,27 €
Asset intensity in year 0	16,1%
Profitability in year 0	14,5%

Years	1-3	4-5	6-10	11-15	16+
Growth (g)	52%		32%	12%	3%
Profitability (p)		14,5%	20,3%	28,5%	39,9%
Asset intensity (a)		16,1%	16,1%	16,1%	16,1%

2023-2028

Year	2023	2024	2025	2026	2027	2028
Sales	516.157,27 €	1.756.997	2.622.556	3.459.549	4.563.671	6.020.174
g		52%	52%	32%	32%	32%
p	15%	15%	15%	15%	15%	15%
a	16%	16%	16%	16%	16%	16%
EBIAT	75.025,5	255.386,5	381.198,8	502.859,1	663.347,4	875.056,0
NOA	83.174,0	283.124,0	422.600,8	557.474,6	735.393,6	970.095,8
FCF		158.632,3	236.780,1	367.985,3	485.428,4	640.353,8
Cum. FCF		158.632,3	395.412,3	763.397,6	1.248.826,0	1.889.179,8
EV	53.451.596,2 €	58.638.123,6 €	64.265.155,8 €	70.323.686,2 €	76.870.626,4 €	83.917.335,2 €
EV/EBIAT		209,3	153,8	127,8	106,0	87,8
EV/Sales		30,4	22,4	18,6	15,4	12,8

2029-2033

Year	2023	2029	2030	2031	2032	2033
Sales	516.157,27 €	7.966.328	10.508.796	13.862.697	18.287.002	24.123.332
g		32%	32%	32%	32%	32%
p	15%	20%	20%	20%	20%	20%
a	16%	16%	16%	16%	16%	16%
EBIAT	75.025,5	1.621.111,8	2.138.492,6	2.820.996,3	3.721.322,4	4.908.989,3
NOA	83.174,0	1.283.700,5	1.693.395,8	2.233.846,2	2.946.782,2	3.887.253,1
FCF		1.310.537,0	1.728.797,2	2.280.546,0	3.008.386,4	3.968.518,4
Cum. FCF		3.199.716,8	4.928.514,0	7.209.060,0	10.217.446,4	14.185.964,7
EV	53.451.596,2 €	90.998.531,8 €	98.369.587,7 €	105.926.000,5 €	113.510.214,2 €	120.892.717,2 €
EV/EBIAT		51,8	42,6	34,9	28,5	23,1
EV/Sales		10,5	8,7	7,1	5,8	4,7

2034-2040

Year	2023	2034	2035	2036	2037	2038	2039	2040
Sales	516.157,27 €	26.997.670	30.214.492	33.814.603	37.843.674	42.352.817	24.847.032	25.592.442
g		12%	12%	12%	12%	12%	3%	3%
p	15%	28%	28%	28%	28%	28%	40%	40%
a	16%	16%	16%	16%	16%	16%	16%	16%
EBIAT	75.025,5	7.691.465,9	8.607.918,0	9.633.567,1	10.781.424,0	12.066.050,3	9.910.267,5	10.207.575,5
NOA	83.174,0	4.350.426,4	4.868.787,6	5.448.912,5	6.098.160,3	6.824.767,1	4.003.870,7	4.123.986,9
FCF		7.228.292,6	8.089.556,8	9.053.442,2	10.132.176,2	11.339.443,4	9.793.649,9	10.087.459,4
Cum. FCF		21.414.257,4	29.503.814,2	38.557.256,4	48.689.432,6	60.028.876,0	69.822.525,9	79.909.985,3
EV	53.451.596,2 €	125.753.696,3 €	130.239.509,1 €	134.210.017,8 €	137.498.843,4 €	139.909.284,3 €	144.106.562,9 €	148.429.759,8 €
EV/EBIAT		15,7	14,6	13,5	12,4	11,4	14,1	14,1
EV/Sales		4,5	4,2	3,9	3,5	3,2	5,6	5,6

Key Output Parameters

Cost of capital	10,0%
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NPV of terminal value	31.361.786,7
Enterprise Value	53.451.596,2
Funding needed	- €

Free Cash Flow



10.23 Funding Requirements: Data Table – Equity Share without Follow-up investment vs. Actual IRR vs. Investment Period (external equity stake capped at 2% of DCF valuation)

Equity stake vs. Actual IRR (w/o FU-Investment)				
Actual IRR	Investment Period			
	3	5	10	15
10 %	0,26%	0,26%	0,29%	0,40%
15 %	0,29%	0,32%	0,45%	0,79%
20 %	0,33%	0,40%	0,69%	1,49%
25 %	0,37%	0,49%	1,04%	2,00%
30 %	0,42%	0,60%	1,54%	2,00%
35 %	0,47%	0,72%	2,00%	2,00%
40 %	0,53%	0,87%	2,00%	2,00%
45 %	0,59%	1,03%	2,00%	2,00%
50 %	0,65%	1,22%	2,00%	2,00%
55 %	0,71%	1,44%	2,00%	2,00%
60 %	0,79%	1,69%	2,00%	2,00%
65 %	0,86%	1,97%	2,00%	2,00%
70 %	0,94%	2,00%	2,00%	2,00%
75 %	1,03%	2,00%	2,00%	2,00%
80 %	1,12%	2,00%	2,00%	2,00%
85 %	1,22%	2,00%	2,00%	2,00%
90 %	1,32%	2,00%	2,00%	2,00%
95 %	1,42%	2,00%	2,00%	2,00%
100 %	1,54%	2,00%	2,00%	2,00%
150 %	2,00%	2,00%	2,00%	2,00%
200 %	2,00%	2,00%	2,00%	2,00%
250 %	2,00%	2,00%	2,00%	2,00%
300 %	2,00%	2,00%	2,00%	2,00%
350 %	2,00%	2,00%	2,00%	2,00%
400 %	2,00%	2,00%	2,00%	2,00%
450 %	2,00%	2,00%	2,00%	2,00%
500 %	2,00%	2,00%	2,00%	2,00%
550 %	2,00%	2,00%	2,00%	2,00%
600 %	2,00%	2,00%	2,00%	2,00%
650 %	2,00%	2,00%	2,00%	2,00%
700 %	2,00%	2,00%	2,00%	2,00%
750 %	2,00%	2,00%	2,00%	2,00%
800 %	2,00%	2,00%	2,00%	2,00%
850 %	2,00%	2,00%	2,00%	2,00%

10.24 Funding Requirements: Data Table – Future Value of Investment without Follow-up Investment vs. Actual IRR vs. Investment Period

Future value of investment vs. Actual IRR (w/o FU-Investment)				
	Investment Period			
	3	5	10	15
10%	179.685 €	217.419 €	350.155 €	563.929 €
15%	205.318 €	271.533 €	546.150 €	1.098.503 €
20%	233.280 €	335.923 €	835.884 €	2.079.948 €
25%	263.672 €	411.987 €	1.257.285 €	2.798.186 €
30%	296.595 €	501.246 €	1.861.090 €	2.798.186 €
35%	332.151 €	605.345 €	2.417.854 €	2.798.186 €
40%	370.440 €	726.062 €	2.417.854 €	2.798.186 €
45%	411.564 €	865.314 €	2.417.854 €	2.798.186 €
50%	455.625 €	1.025.156 €	2.417.854 €	2.798.186 €
55%	502.723 €	1.207.792 €	2.417.854 €	2.798.186 €
60%	552.960 €	1.415.578 €	2.417.854 €	2.798.186 €
65%	606.437 €	1.651.024 €	2.417.854 €	2.798.186 €
70%	663.255 €	1.678.347 €	2.417.854 €	2.798.186 €
75%	723.516 €	1.678.347 €	2.417.854 €	2.798.186 €
80%	787.320 €	1.678.347 €	2.417.854 €	2.798.186 €
85%	854.769 €	1.678.347 €	2.417.854 €	2.798.186 €
90%	925.965 €	1.678.347 €	2.417.854 €	2.798.186 €
95%	1.001.008 €	1.678.347 €	2.417.854 €	2.798.186 €
100%	1.080.000 €	1.678.347 €	2.417.854 €	2.798.186 €
150%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
200%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
250%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
300%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
350%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
400%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
450%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
500%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
550%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
600%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
650%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
700%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
750%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
800%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €
850%	1.406.474 €	1.678.347 €	2.417.854 €	2.798.186 €

10.25 Funding Requirements: Data Table – ROI without Follow-up Investment vs. Actual IRR vs. Investment Period

ROI vs. Actual IRR (w/o FU-Investment)				
Actual IRR	Investment Period			
	10 %	33%	61%	159%
15 %	52%	101%	305%	714%
20 %	73%	149%	519%	1441%
25 %	95%	205%	831%	1973%
30 %	120%	271%	1279%	1973%
35 %	146%	348%	1691%	1973%
40 %	174%	438%	1691%	1973%
45 %	205%	541%	1691%	1973%
50 %	238%	659%	1691%	1973%
55 %	272%	795%	1691%	1973%
60 %	310%	949%	1691%	1973%
65 %	349%	1123%	1691%	1973%
70 %	391%	1143%	1691%	1973%
75 %	436%	1143%	1691%	1973%
80 %	483%	1143%	1691%	1973%
85 %	533%	1143%	1691%	1973%
90 %	586%	1143%	1691%	1973%
95 %	641%	1143%	1691%	1973%
100 %	700%	1143%	1691%	1973%
150 %	942%	1143%	1691%	1973%
200 %	942%	1143%	1691%	1973%
250 %	942%	1143%	1691%	1973%
300 %	942%	1143%	1691%	1973%
350 %	942%	1143%	1691%	1973%
400 %	942%	1143%	1691%	1973%
450 %	942%	1143%	1691%	1973%
500 %	942%	1143%	1691%	1973%
550 %	942%	1143%	1691%	1973%
600 %	942%	1143%	1691%	1973%
650 %	942%	1143%	1691%	1973%
700 %	942%	1143%	1691%	1973%
750 %	942%	1143%	1691%	1973%
800 %	942%	1143%	1691%	1973%
850 %	942%	1143%	1691%	1973%

10.26 Funding Requirements: Data Table – Actual IRR with Follow-up Investment vs. Required IRR vs. Investment Period (external equity stake capped at 45% of DCF valuation)

Actual IRR vs. required IRR (w FU-Investment)					
Required IRR	Investment Period				
	3	5	10	15	
	10%	10%	10%	10%	10%
15%	15%	15%	15%	15%	15%
20%	20%	20%	20%	20%	20%
25%	25%	25%	25%	25%	25%
30%	30%	30%	30%	30%	30%
35%	35%	35%	35%	35%	35%
40%	40%	40%	40%	40%	40%
45%	45%	45%	45%	45%	45%
50%	50%	50%	50%	50%	50%
55%	55%	55%	55%	55%	51%
60%	60%	60%	60%	60%	51%
65%	65%	65%	65%	65%	51%
70%	70%	70%	70%	70%	51%
75%	75%	75%	75%	75%	51%
80%	80%	80%	80%	80%	51%
85%	85%	85%	82%	82%	51%
90%	90%	90%	82%	82%	51%
95%	95%	95%	82%	82%	51%
100%	100%	100%	82%	82%	51%
150%	150%	150%	82%	82%	51%
200%	200%	200%	82%	82%	51%
250%	250%	209%	82%	82%	51%
300%	300%	209%	82%	82%	51%
350%	350%	209%	82%	82%	51%
400%	400%	209%	82%	82%	51%
450%	450%	209%	82%	82%	51%
500%	500%	209%	82%	82%	51%
550%	517%	209%	82%	82%	51%
600%	517%	209%	82%	82%	51%
650%	517%	209%	82%	82%	51%
700%	517%	209%	82%	82%	51%
750%	517%	209%	82%	82%	51%
800%	517%	209%	82%	82%	51%
850%	517%	209%	82%	82%	51%

10.27 Funding Requirements: Data Table – Equity Share with Follow-up investment vs. Actual IRR vs. Investment Period (external equity capped to 45%)

Equity stake vs. Actual IRR (w FU-Investment)				
Actual IRR	Investment Period			
	3	5	10	15
	10 %	0,26%	0,26%	0,29%
15 %	0,29%	0,32%	0,45%	0,79%
20 %	0,33%	0,40%	0,69%	1,49%
25 %	0,37%	0,49%	1,04%	2,74%
30 %	0,42%	0,60%	1,54%	4,94%
35 %	0,47%	0,72%	2,25%	8,70%
40 %	0,53%	0,87%	3,23%	15,01%
45 %	0,59%	1,03%	4,59%	25,41%
50 %	0,65%	1,22%	6,44%	42,25%
55 %	0,71%	1,44%	8,94%	45,00%
60 %	0,79%	1,69%	12,28%	45,00%
65 %	0,86%	1,97%	16,70%	45,00%
70 %	0,94%	2,28%	22,51%	45,00%
75 %	1,03%	2,64%	30,08%	45,00%
80 %	1,12%	3,04%	39,87%	45,00%
85 %	1,22%	3,49%	45,00%	45,00%
90 %	1,32%	3,98%	45,00%	45,00%
95 %	1,42%	4,54%	45,00%	45,00%
100 %	1,54%	5,15%	45,00%	45,00%
150 %	3,00%	15,71%	45,00%	45,00%
200 %	5,18%	39,09%	45,00%	45,00%
250 %	8,23%	45,00%	45,00%	45,00%
300 %	12,29%	45,00%	45,00%	45,00%
350 %	17,49%	45,00%	45,00%	45,00%
400 %	24,00%	45,00%	45,00%	45,00%
450 %	31,94%	45,00%	45,00%	45,00%
500 %	41,47%	45,00%	45,00%	45,00%
550 %	45,00%	45,00%	45,00%	45,00%
600 %	45,00%	45,00%	45,00%	45,00%
650 %	45,00%	45,00%	45,00%	45,00%
700 %	45,00%	45,00%	45,00%	45,00%
750 %	45,00%	45,00%	45,00%	45,00%
800 %	45,00%	45,00%	45,00%	45,00%
850 %	45,00%	45,00%	45,00%	45,00%

10.28 Funding Requirements: Data Table – Future Value of Investment with Follow-up Investment vs. Actual IRR vs. Investment Period (external equity capped at 45%)

Future value of investment vs. Actual IRR (w FU-Investment)				
Actual IRR	Investment Period			
	3	5	10	15
	10%	179.685 €	217.419 €	350.155 €
15%	205.318 €	271.533 €	546.150 €	1.098.503 €
20%	233.280 €	335.923 €	835.884 €	2.079.948 €
25%	263.672 €	411.987 €	1.257.285 €	3.836.931 €
30%	296.595 €	501.246 €	1.861.090 €	6.910.096 €
35%	332.151 €	605.345 €	2.714.385 €	12.171.393 €
40%	370.440 €	726.062 €	3.904.938 €	21.001.693 €
45%	411.564 €	865.314 €	5.546.433 €	35.551.162 €
50%	455.625 €	1.025.156 €	7.784.780 €	59.115.675 €
55%	502.723 €	1.207.792 €	10.805.646 €	62.959.178 €
60%	552.960 €	1.415.578 €	14.843.407 €	62.959.178 €
65%	606.437 €	1.651.024 €	20.191.715 €	62.959.178 €
70%	663.255 €	1.916.807 €	27.215.918 €	62.959.178 €
75%	723.516 €	2.215.767 €	36.367.568 €	62.959.178 €
80%	787.320 €	2.550.917 €	48.201.308 €	62.959.178 €
85%	854.769 €	2.925.448 €	54.401.723 €	62.959.178 €
90%	925.965 €	3.342.734 €	54.401.723 €	62.959.178 €
95%	1.001.008 €	3.806.333 €	54.401.723 €	62.959.178 €
100%	1.080.000 €	4.320.000 €	54.401.723 €	62.959.178 €
150%	2.109.375 €	13.183.594 €	54.401.723 €	62.959.178 €
200%	3.645.000 €	32.805.000 €	54.401.723 €	62.959.178 €
250%	5.788.125 €	37.762.801 €	54.401.723 €	62.959.178 €
300%	8.640.000 €	37.762.801 €	54.401.723 €	62.959.178 €
350%	12.301.875 €	37.762.801 €	54.401.723 €	62.959.178 €
400%	16.875.000 €	37.762.801 €	54.401.723 €	62.959.178 €
450%	22.460.625 €	37.762.801 €	54.401.723 €	62.959.178 €
500%	29.160.000 €	37.762.801 €	54.401.723 €	62.959.178 €
550%	31.645.659 €	37.762.801 €	54.401.723 €	62.959.178 €
600%	31.645.659 €	37.762.801 €	54.401.723 €	62.959.178 €
650%	31.645.659 €	37.762.801 €	54.401.723 €	62.959.178 €
700%	31.645.659 €	37.762.801 €	54.401.723 €	62.959.178 €
750%	31.645.659 €	37.762.801 €	54.401.723 €	62.959.178 €
800%	31.645.659 €	37.762.801 €	54.401.723 €	62.959.178 €
850%	31.645.659 €	37.762.801 €	54.401.723 €	62.959.178 €

10.29 Funding Requirements: Data Table – ROI with Follow-up Investment vs. Actual IRR vs. Investment Period

ROI vs. Actual IRR (w FU-Investment)				
Actual IRR	Investment Period			
	10%	15%	20%	25%
10%	33%	61%	159%	318%
15%	52%	101%	305%	714%
20%	73%	149%	519%	1441%
25%	95%	205%	831%	2742%
30%	120%	271%	1279%	5019%
35%	146%	348%	1911%	8916%
40%	174%	438%	2793%	15457%
45%	205%	541%	4008%	26234%
50%	238%	659%	5667%	43689%
55%	272%	795%	7904%	46536%
60%	310%	949%	10895%	46536%
65%	349%	1123%	14857%	46536%
70%	391%	1320%	20060%	46536%
75%	436%	1541%	26839%	46536%
80%	483%	1790%	35605%	46536%
85%	533%	2067%	40198%	46536%
90%	586%	2376%	40198%	46536%
95%	641%	2720%	40198%	46536%
100%	700%	3100%	40198%	46536%
150%	1463%	9666%	40198%	46536%
200%	2600%	24200%	40198%	46536%
250%	4188%	27872%	40198%	46536%
300%	6300%	27872%	40198%	46536%
350%	9013%	27872%	40198%	46536%
400%	12400%	27872%	40198%	46536%
450%	16538%	27872%	40198%	46536%
500%	21500%	27872%	40198%	46536%
550%	23341%	27872%	40198%	46536%
600%	23341%	27872%	40198%	46536%
650%	23341%	27872%	40198%	46536%
700%	23341%	27872%	40198%	46536%
750%	23341%	27872%	40198%	46536%
800%	23341%	27872%	40198%	46536%
850%	23341%	27872%	40198%	46536%