KSE GRADUATE SCHOOL
BUSINESS

Abstract

Meeting Ongoing Demand for Technology Education

by

Ihor Deyneka

MS in Management, Ukrainian Catholic University, 2020

BS in Mathematics, Ivan Franko National University of Lviv, 2010

Capstone Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Master in Management

KSE Graduate Business School

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Despite the Russian invasion of Ukraine in 2022 and subsequent decline in the IT industry, demand for technology education in Ukraine persists, particularly among career switchers. This capstone project aims to address the problem of low-quality IT education offerings in Ukraine by launching a software development academy that provides personalized, high-quality training to aspiring IT professionals. The project employs a mixed-methods research design, utilizing PESTEL analysis, Porter's Five Forces analysis, and SWOT analysis to assess the external and internal factors influencing the technology education market in Ukraine. The target market is segmented, with a focus on the "Switchers" segment – individuals aged 25-45 who are motivated to change careers but have limited free time and previous failed attempts at self-study or cheap courses. The marketing mix employs a personalized approach, offering two main courses (.NET Fullstack Engineer and Power Platform Developer) that can be adapted to each student's existing skills. An income-sharing agreement pricing model is used, where students pay 30% of their income once they secure a job with a salary exceeding $1,000 until they reach a pre-agreed total amount. Promotion focuses on personal selling, targeting potential students on platforms like DOU, Djinni, and Work.ua. The key results demonstrate the financial viability of the project, with a positive Net Present Value and a high Internal Rate of Return for the pilot program targeting an initial cohort of 24 students. A four-year financial forecast shows that the academy can become self-sustaining and expand its operations by reinvesting profits. By offering high-quality, personalized training to career switchers and other aspiring IT professionals, the academy will contribute to the development of a skilled workforce that can support the growth and recovery of Ukraine's IT sector in the post-war period.

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Dedication

I dedicate this capstone project to my wife, Orysia, whose love, support, and encouragement have been the driving force behind my journey at KSE. Her sacrifices and parenthood efforts during my long evening and weekend sessions allowed me to make incremental steps towards my goals, and her wisdom often pushed me to make right decisions.

To my sons, Danylko and Marko, who may not have received enough attention from me throughout this challenging process, but who always brought smiles and positive emotions.

To my mother, Olha, whose love and perseverance helped make me the person I am today. And to my late father, Ivan, who is no longer physically with us, but who set the foundation of my career. I know you would be proud of this accomplishment, and I carry your memory with me always.

To my brother, Oleh, who taught me plenty of skills both in childhood and adulthood, from mathematics to business. His ideas always generated food for thought and our cooperation has been always fruitful. I hope this will continue with the new ideas, including those occurred during the work on this project.

To my good friend, Yaroslav, and thousands of other warriors who serve in the Ukrainian army and navy, and defend freedom against the brutal invasion right now while I write these lines.

Finally, I dedicate this project to all the individuals who helped me come to conclusions outlined in this project. I sincerely hope that my findings will help positively change some human lives, which would mean that together we are making the world a better place.

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Acknowledgments

I would like to express my deepest gratitude to all the professors who shared their knowledge and provided valuable and constructive feedback. I believe that their guidance will help advance my career and overcome the challenges on my way.

I also want to thank all the MBA program coordinators, managers, and administrative staff for being there to answer questions and offer assistance, even during late evenings.

Furthermore, I would like to thank all the members of the MBA23, MBA24, and MBA25 groups whom I met and worked with on numerous projects, case studies, and home assignments. I have learned a great deal from each of you and hope to meet you in person again in the future.

Thank you all for being a part of this incredible journey and for contributing to the successful completion of my MBA program.

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AI Disclaimer

This capstone project was initially drafted without the use of AI assistance. However, AI technology was subsequently employed to refine and enhance the document. The following prompts were utilized at various stages throughout the project:

Prompt 1: Change to use APA style. [paragraph]

Usage: This prompt was applied throughout the document to ensure compliance with APA formatting guidelines.

Prompt 2: Fix grammar, rephrase, this is for my university capstone project. [paragraph]

Usage: This prompt was used extensively to improve the grammatical accuracy and clarity of the text.

Prompt 3: [Full content of the document] Insert abstract here; it should be no more than one page long. Abstract text must be double-spaced with no paragraph indents or breaks. Describe the overall research problem being addressed in the first couple of sentences and indicate why it is important (e.g., who would care if the problem is solved). You can include a general introduction of the issue in the first sentence, but you need to move to a clear statement of the research problem being addressed. Identify the purpose and theoretical foundations, if appropriate, summarize the key research question(s), and briefly describe the overall research design, methods, and data analytic procedures. Identify the key results, one or two conclusions, and recommendations that capture the heart of the research (for the final study; do not include results and conclusions in the proposal abstract). Conclude with a statement on the implications

for positive social change. Here are some form and style tips: (a) limit the abstract to one typed page; (b) maintain the scholarly language used throughout the Capstone Project; (c) keep the abstract concise, accurate, and readable; (d) use correct English; (e) ensure each sentence adds value to the reader's understanding of the research; and (f) use the full name of any acronym and include the acronym in parentheses. Do not include references or citations in the abstract. Per APA Style, spell out numbers nine and below, and use numerals for numbers 10 and above. If a number is the first word of a sentence, always spell it out.

Usage: This prompt was employed to create a draft version of the abstract section.

Prompt 4: [Full content of the document] Based on this document write a new chapter conclusions with 15 paragraphs, summarize the project.

Usage: This prompt was used to generate a draft version of the conclusions chapter.

Chapter 1: Introduction

Prospects of the Development of IT Industry in Ukraine

Effects from Russian invasion of Ukraine

Historically, and up until Russian full-scale invasion, IT industry of Ukraine demonstrated high levels of growth. According to report by Lviv IT Cluster (2023), exports of IT services increased from $6.94 billion in 2021 to $7.35 billion in 2022, thus becoming the only industry that grew in Ukraine in the first year of Russian invasion. This result is achieved mostly because of the contracts that were signed before February 24, 2022, and so, the exports of IT services in 2023 declined to $6.73 billion.

In 2021 Ukrainian IT industry experienced huge shortage of staff, and with harsh competition on labor market IT companies faced challenges finding skilled specialists. The companies had to simplify recruitment processes to send offers to the candidates faster to avoid losing the candidates to other companies. The situation was favorable for junior and trainee specialists, as the employers were willing to train them as long as they had good foundation and satisfactory level of English. This led to active development of technical education with initiatives from IT companies, universities, and non-state education.

The situation changed dramatically after February 24, 2022. The customers quickly realized risks of doing new projects in Ukraine and many corporations started identifying Ukraine as a non-compliance location. Some other customers started dividing Ukraine by more and less safer areas, but with regular air sirens on the entire territory of Ukraine and later electricity outages in the winter of 2022-2023, the competitiveness of Ukrainian IT services deteriorated further. Mobilization efforts became another risky factor for foreign customers as the fear of

losing team members and the costs of new onboarding, training and knowledge transfer needed to be taken into account.

The loss of these customers was somewhat compensated by new customers that picked Ukraine as their development base due to solidarity with Ukrainian people and willingness to support in the form of new business opportunities. However, based on the series of discussions with several top managers of smaller IT outsourcing companies (personal communication, 2023) the number of such customers was small and the projects were not usually enterprise level.

In 2023, it became much more challenging for junior and trainee IT professionals to find employment opportunities. The rules in the job market began to be dictated not by candidates, but by employers (Pylypiv, 2023). Despite this, the total number of IT specialists in Ukraine continued to grow. The number of IT specialists was estimated to be around 250,000 in 2021 and 285,000 in 2022, with approximately 228,000 remaining in Ukraine and 57,000 working abroad. In 2023, these figures increased to 242,000 and 65,000, respectively, bringing the total number of IT specialists in the industry to 307,000.

Finally, the war in Ukraine did not stop M&A transactions in IT. Although the number of transactions decreased in 2022 and 2023 compared to 2021, this contraction is comparable to similar trends worldwide. There were acquisitions by bigger Ukrainian IT companies, such as Intellias acquiring Digitally Inspired, as well as acquisitions of smaller IT companies by foreign investors. In particular, Euvic Group, a Polish IT giant, acquired four Ukrainian outsourcing companies, spending over $10 million (Neseniuk, 2023). According to the co-founder of Euvic Group, Krzysztof Wolny, the low point of this crisis is already behind us. He is betting on the rapid recovery of business in post-war Ukraine, stating that there are many companies focused on reconstruction, so there will be a flow of money. The same logic can be applied to assume that

the growth of the IT industry in Ukraine and the need for skilled specialists will resume after the war.

Opportunities of Accession of Ukraine to the European Union and NATO

On June 23, 2022, the European Council granted Ukraine the status of a candidate for accession to the European Union, which gave a clear signal that Ukraine will become an EU member at some point in the future. On 14 December 2023, the European Council decided to open accession negotiations with Ukraine.

General opinion of the experts is that the Ukraine is still years away from EU membership and there are still many challenges to overcome. Yet, the candidate status and the reforms required on the accession path in theory should stimulate foreign direct investments, including those in IT industry, and provide access to EU funding instruments, such as the Instrument of Pre-Accession Assistance (the IPA). Similar processes were happening in Central and Eastern European countries before their accession to the EU.

With EU integration, Ukraine's IT industry is expected to grow more due to gaining access to enterprise customers, which require their outsourcing teams to be located in EU, or team members be EU citizens. For example, in the marketing emails sent out by Riviera Outsourcing between May of 2023 and December of 2023, an intermediary company operating in the European market, more than half of the advertised job positions required candidates to possess either citizenship or residency status within the European Union (personal communication, 2023). At this point, Ukraine is losing competition for such customers to countries such as Poland and Romania.

Between 2014 and 2020 some customers in defense sector terminated their operations in Ukraine, and required team members to relocate to NATO countries or chose to replace them

with new engineers. Tighter integration between Ukraine and NATO that happened after 2022, and growth of R&D in military technology, might help attract additional investments and stimulate defense and IT sectors, especially in things like production of drones, electronic warfare, electronic intelligence, and special applications of AI.

Adoption of Generative AI Tools

Initial research on AI traces back to 1940s and the works of Alan Turing when it was called Machine Intelligence. Even though the theory of neural networks was in place, it required decades before AI could truly take off. The developments of the Internet, Mobile, Big Data, cheap computing power and cloud services helped pave the way. Chat GPT rolling out in 2022 and active development of other generative tools and large language models made managers review the strategies of their organizations.

According to a McKinsey Global Survey on AI, around three-quarters of respondents expect that generative AI will bring transformative shifts in the competitive landscape of their industries within the next three years (McKinsey & Company, 2023). While all industries will likely be affected by some degree of disruption, the level of impact will vary. McKinsey estimates that technology companies will experience the highest impact, with added value equivalent to up to 9% of global industry revenue. Knowledge industries, such as education, are also expected to experience a significant effect, with an added value of up to 4%. These numbers suggest that the growth in technology education will continue.

The software development industry expects a significant boost in productivity. Senior software engineers will likely still have to architect the solution and break it down into smaller steps, then use AI tools to generate significant portions of code, combine them back together to produce results. However, they will be able to focus on solving the problems rather than actual

code typing. There is a variety of areas where AI could help improve productivity in day to day software engineering job including finding improvements, notifying about mistakes in near real-time, debugging code faster, automatically adding unit testing, configuring CI/CD pipelines and other.

The productivity of software engineers is likely to grow, but as AI continues to improve, there is a good chance that software engineering jobs as we know them today will disappear. Researchers at Oak Ridge National Laboratory in the United States claim that by 2040, machines, instead of humans, will write most of the code (Billings et al., 2017). We might see a shift in the human's role to activities such as architecting solutions, editing and growing datasets, or simple prompt engineering (Karpathy, 2017). Even though we do not believe that these changes will be instantaneous, but it is important to keep these ideas in mind as those pose a significant risk to any business that is operating in technology education industry.

Importance of IT Education in Ukraine

Strong scientific, engineering, and mathematical backgrounds set the foundation for the development of the IT industry in Ukraine back in the 90s. Engineers who had gained experience with older languages such as Assembler or FORTRAN during their studies were able to quickly learn new technologies. Taras Kytsmey, co-founder at SoftServe, recalls that their first project required transitioning reports from COBOL to Microsoft Access for the American company General Electric (Burdina & Sabadyshyna, 2023). Mr. Kytsmey had to learn both COBOL and Microsoft Access, build, test, and prepare visually appealing reports. The project's success boosted SoftServe during its early days and set the growth trajectory for how we know it today—a multi-million dollar software development company.

The growth of the IT sector and the fact that most experienced engineers were already employed within the industry led to businesses feeling a shortage of engineering resources. Traditional universities were unable to satisfy the demands. Unlike in many other sectors, practical hard skills became far more important than the university diploma during the recruitment process. A survey conducted by dev.ua among Ukrainian developers and IT recruiters revealed that nearly 57% of respondents stated that formal education does not matter if a candidate possesses all the necessary skills (Brovinska, 2023).

The Internet revolution accelerated the growth of new technologies and increased demand for software engineering skills. Programming languages such as Python, Java, C#, JavaScript and PHP surged in popularity. The swift evolution of technologies posed challenges for traditional universities, making it difficult for them to keep pace and update their curricula. Additionally, many knowledgeable professors in Ukraine decided to quit their university jobs for lucrative opportunities in the corporate sector, leading to a scarcity of experienced educators. Aspiring software developers had to resort to purchasing specialized literature, self-study, and insights from experienced fellow engineers.

This situation created an ideal environment for the growth of private IT education institutions. IT Step Academy stands out as a pioneer in this domain, founded in 1999 in Odesa, and now operates in over 30 cities in Ukraine and over 20 other countries. Most of the largest Ukrainian IT outsourcing companies have established their own educational entities, such as SoftServe Academy, EPAM University, and IntelliStart from Intellias. Currently, there exists a variety of academies to gain IT knowledge, ranging from free intensives to paid courses costing $3,800, and businesses utilizing income-sharing model.

In recent years traditional universities graduate approximately 20,000 students in IT specialties, some of whom choose not to work in their field of study. However, before the war, the IT market demanded an annual workforce ranging from 30,000 to 50,000 individuals. Private technology education is now also supported by the government of Ukraine, which launched the IT Generation program in 2022. It partnered with 22 schools and by July 2023, 1,877 out of 2,200 students completed their courses. Nevertheless, the demand for this program was substantial, with over 210,000 applications from approximately 50,000 individuals (Neseniuk, 2023).

Problem, Mission, Vision, and Goals

Background and Problem Statement

As mentioned in the previous sections, despite the Russian invasion of Ukraine, decline in the IT industry of Ukraine, and other factors, the demand for technology education persists. According to the results of a national youth survey (International Republican Institute, 2023), conducted by Info Sapiens and analyzed by the Center of Insights in Survey Research of the International Republican Institute, 50% of young respondents aged 13 to 15 have already chosen their future profession. Notably, the most popular career path among them is in IT, with 17%, followed by aspirations to become a doctor at 10%, a lawyer at 9%, and a designer at 8%. Additionally, there is a significant number of individuals who express an interest in becoming switchers by changing their current professions to pursue opportunities in IT.

However, the quality of IT education in Ukraine is a significant problem. Around half of graduates of IT faculties in traditional universities do not work in IT sector, and these are the numbers before the war (Ministry of Digital Transformation of Ukraine, 2021). Many courses are poorly organized and taught by junior programmers who lack both technical and teaching skills.

Consequently, aspiring software developers often struggle to gain the necessary skills to secure their desired jobs in the IT industry, which is the primary reason for enrolling in these courses. Chief Learning Officer at Sigma Software Maksym Pochebut says (2022) that he has frequently heard complaints from young people, undergraduates, and career switchers who have struggled to secure IT jobs despite completing courses. He suggests that the reasons for this could lie both with the individuals themselves and the quality of the courses they have taken.

Addressing this problem requires innovative student-centric thinking that focuses on high-quality IT education programs taught by experienced professionals. By equipping aspiring software developers with the skills and knowledge they need to succeed, we will help Ukraine build a strong, competitive IT workforce and position itself as a leader in the global technology industry.

Mission

Our mission is to be a navigator for aspiring IT professionals, to help them safely and quickly reach their goals, and achieve what they deserve. In a world where technology evolves rapidly, we want to instill a perpetual learning approach that will reignite curiosity and pave the way for continuous improvement.

Vision

Our vision is to evolve into a knowledge-absorbing community, that will pass skills to the upcoming generations of professionals and help establish a strong brand of Ukraine as a technology hub of the world. We envision how our community members become skilled professionals, co-found technology startups, and take stage at global conferences.

Goals

The strategic objective of this project is to launch a software development academy with the target of enrolling a minimum of 24 in the initial cohort, and set foundation for future growth. Achieving this goal involves developing high-quality courses, executing effective marketing campaigns, hiring and training staff, and tracking results. The academy will be under the control of a parent software development company, inheriting existing proprietary software that will enhance and streamline the learning process.

Chapter 2: Diagnostics

Environment

In 2024, Ukrainian technology education institutions operate in a dynamic environment, which is characterized by rapidly evolving technologies from one side, and Ukraine's political and economic instability from another side. To provide valuable insights into the external macro-environmental factors, and better understand competitive positioning, we will use PESTEL analysis. These results will also later be used for strategic planning and risk management activities.

PESTEL Analysis

- **Political:** Ongoing war in Ukraine affected labor market increasing interest in IT jobs, including cybersecurity jobs. Closed borders and mobilization efforts performed by Ukraine's government reduced mobility and created additional opportunities for the remote jobs. Unstable electricity and internet connectivity forced some of the students to drop their study in early 2023, and they might be induced to restore their learning. Election year in the United States brings lots of uncertainty, which might help Ukraine achieve victory, or instead result in millions of more Ukrainian refugees. On the other hand, EU candidate status contributes to overall stability and consumer confidence in Ukraine.
- **Economic:** Decrease in the number of foreign orders for IT services caused a surplus of candidates, which reduced salaries and interest in IT jobs. This was compensated by increased activity of software product companies. The sustainable difference between salaries in technology and many other sectors remains one of the main factors that pushes people to choose jobs in IT. Potential taxation changes, such as

reform of simplified tax system outlined in National Revenue Strategy might negatively impact on IT industry (Ministry of Finance of Ukraine, 2023, para. 4.3). At the beginning of 2023 some foreign countries expected to face recession in 2023, but most of them managed to avoid it and their economic outlook now looks more optimistic than a year ago. Economic activity is expected to be restored and possibly it will bring back interest in outsourcing to Ukraine.

- **Social:** Many software companies may find the need to backfill their current employees in case they get mobilized into the army. Consequently, this might heat up the IT job market slightly. On the other hand, mobilization might also affect instructors and staff of IT education institutions, which poses a risk to them. Immigration processes that started in 2022 continue changing social connections. Many of the workers who left the country before or at the beginning of the war integrate into their new societies and sever economic ties with Ukraine.
- **Technological:** Surge in usage of generative AI creates concerns about future of jobs in technology sector, thoughts of experts vary from no effect on IT industry to its complete reshaping. At the same time, digital transformation trends continue around the world which requires presence of skilled technology resources, which are limited in many developed countries. Just as AI is expected to be a newsmaker in the technology world, in Ukraine defense-tech is developing rapidly. New research and development activities in the defense sector require innovative technological solutions, which consequently stimulate the technology job market. Also, the popularity of hybrid work is supported by the rise of hybrid learning.

- **Environmental:** Green transition stimulates investments into new green projects in the developed countries, which might require technological assistance. In Ukraine, large areas of mined territories will require innovative solutions.
- **Legal:** Compliance issues force some of the corporations to stop working with Ukrainian counterparts. Special legal and tax regime Diia City creates favorable conditions for the development of IT businesses.

Competition

According to Forbes calculations (Melnyk, Neseniuk & Balashova, 2024), over the last 20 years Ukrainian IT schools have graduated over half a million students, based on responses from 36 various companies. The number of successfully employed students has reached 100,000. Table 1 below provides insights into pricing, graduates statistics and NPS regarding some of these schools, as reported to Forbes by the schools themselves.

In the competitive landscape of IT education in Ukraine, the classification of schools is characterized by a variety of offerings tailored to diverse student needs. Firstly, IT schools are distinguished by their operation mode, such as online, offline, and hybrid, each accommodating different learning preferences. Secondly, students can choose personalized one-to-one mentorships or generally less expensive group settings. Furthermore, some schools enforce a fixed learning schedule, while in other cases, students can choose their own pace and have a flexible schedule. There are schools that focus on intensive day-to-day learning to achieve results faster, while others have classes during evening hours or weekends, which works best for students with daytime jobs. Geographical considerations also play a role, with institutions either localized within specific cities or spanning multiple locations across different parts of the

country, and pure online offerings allow learning from any part of the world with an internet connection. Finally, certain schools offer free courses, but they selectively choose candidates with the intention of training and subsequently hiring them for parent outsourcing companies like EPAM, Global Logic, or Intellias. On the other hand, most other courses operate on a paid basis, employing diverse business models such as flat prices for the course, monthly payments, subscriptions to online systems, and an income-sharing model.

Table 1

Ukrainian IT Schools

School Name	Year Founded	Price Range	Graduates	Employed Graduates	Average NPS
IT Step	1999	4,900 – 128,160 UAH	267,000	208,000	84%
ITVDN	2014	10 – 20 USD/month	68,000	55,000	85%
Hillel IT School	2012	5,500 – 30,000 UAH	60,000	8,000	84%
Prog.Academy	2012	5,500 – 92,800 UAH	40,000	N/A	80-90%
SoftServe Academy	2005	4,680 – 32,995 UAH	35,000	24,500	77%
GoIT	2014	15,200 – 49,600 UAH	24,000	5,000	65%
Beetroot Academy	2014	19,900 – 39,800 UAH	12,000	6,600	73%
robot_dreams	2020	420 – 1,400 USD	5,000	N/A	61%
Mate academy	2015	12% of income for 3y	4,000	3,300	71%
FoxmindEd	2016	2,450 – 30,400 UAH	4,000	3,600	65%
Codefinity	2021	Free	50,000	N/A	N/A
EPAM University	2011	Free	7,000	6,500	74%
GL BaseCamp	2012	Free	2,000	500	N/A
Genesis Ukraine	2016	Free	1,600	400	90%
IntelliStart	2021	Free	134	N/A	N/A

Based on a series of interviews with aspiring IT professionals, when it comes to choosing an IT school, students most often rely on word of mouth (personal communication, 2023). Hence, positive feedback from graduates is one of the most important factors, and large IT schools always monitor their Net Promoter Score (NPS). Unfortunately, the reliability of NPS

values in Table 1 is dependent on the reporting companies, and the methodology of calculations might be different. Therefore, it should be taken with a grain of salt. The ratio of employed graduates to total graduates is an alternative metric. Notably, this ratio exceeds 60% for schools affiliated with large outsourcing companies, as they primarily select and train specialists for their needs. The high ratio for IT Step can be attributed to its pioneering status, enabling many graduates to secure positions when the market had fewer candidates. Similarly, Mate academy result is also over 80%, aligning with their business model that benefits only when candidates successfully manage to find jobs in IT sector.

Competitive analysis shows that the IT education market is maturing and contains a number of companies tailored to different customer needs. A personalized approach, feedback from graduates, local presence, and affiliation with an existing software company are solid factors that could attract a segment of potential students.

To analyze the market using the Strategic Group Mapping framework, we can categorize players based on two dimensions: Pricing and Delivery Format. Pricing can be classified into four categories: free, cheap, average, and expensive. Delivery Format can be divided into three categories: online platform, instructor-led, and personalized mentorship. By combining these dimensions, we can identify distinct strategic groups within the industry, such as free online platforms, cheap instructor-led courses, or expensive personalized mentorship. This categorization allows us to better understand the competitive landscape, identify gaps in the market, and develop strategies tailored to specific target segments.

1. **Free/Instructor-led:** EPAM University, GL BaseCamp, Genesis Ukraine, IntelliStart;
2. **Cheap/Online platform:** ITVDN, Codefinity;

3. **Average/Instructor-led:** IT Step, Hillel IT School, Prog.Academy, SoftServe Academy, GoIT, Beetroot Academy;
4. **Expensive/Instructor-led:** robot_dreams, Mate Academy;
5. **Expensive/Mentorship:** FoxmindEd

Porter's Five Forces Analysis

To further assess the competitive landscape and understand the intensity of competition, we will perform Porter's Five Forces analysis of IT education market of Ukraine.

- **Threat of New Entrants: High.** The establishment of a new IT education institution does not require significant capital investments. The only resource needed is technology skills, which are abundant in Ukraine.
- **Bargaining Power of Buyers: Low.** Institutions have a steady stream of potential students, and there is no direct price negotiation with the schools. Also, school switching costs reduce students' bargaining power.
- **Bargaining Power of Suppliers: Low.** After the learning program is developed, schools enjoy the advantage of choosing suitable teachers from a large pool of IT specialists and can replace a teacher if necessary.
- **Threat of Substitute Products or Services: Medium.** Traditional IT education faces a moderate threat from self-paced learning and alternative educational models. The ability of traditional institutions to adapt to these changes will impact their competitiveness.
- **Intensity of Competitive Rivalry: Medium.** The presence of many technology education institutions suggests a competitive IT education market. However,

differentiation through various offerings and minimal price fluctuations helps ease the level of competition.

This analysis underlines the necessity of differentiation in Ukraine's technology education market, which demonstrates various levels of competition and faces challenges from international online platforms. To lower the forces outlined by Porter's Five Forces analysis, companies might employ various strategies, like innovations in course offerings or teaching methods, continuous course updates, developing lead generation through alumni networks, or introducing unique pricing options.

Consumers

The consumers of IT education institutions are students who want to secure a job in the IT industry or improve their skills to reach a new level or achieve certain goals. In Ukraine, there are two main groups of students who enroll in technology courses: those who have never worked for an IT company and are looking to enter the industry, and those who already work for an IT company and seek to enhance their existing skills.

In the first group, a significant number of consumers have no prior technology knowledge and are uncertain whether a career in IT is suitable for them. They may be exploring various career options and considering IT as one of the potential paths. Another category of consumers within this group, known as "switchers," are individuals who are currently employed in other sectors but are seeking a change. They may be dissatisfied with their current jobs or see better opportunities in the IT industry. Many consumers in this category possess basic knowledge in technology, such as familiarity with simple HTML or JavaScript. However, their skills are often limited and not sufficient for securing a job in the industry. Some of them have already

attempted courses from different schools but failed to pass job interviews due to a lack of practical experience or in-depth understanding of the subject matter. Others have gained minor experience through their studies in traditional universities or by working on pet projects in their free time. In this group, consumers carefully monitor the job market and are aware of the high competition for trainee positions. They fear they would not be able to find a job after completing the courses. The main driver of school selection is word of mouth, good advice from a friend carries a lot of weight for them. Other factors include price, online vs offline study format, and flexible schedules.

In the second group of existing IT professionals, consumers are more confident and pragmatic in their approach. They are not deterred by the possibility of failure, as they have a clear understanding of their goals and the skills they need to acquire. These students have already identified the specific technologies, frameworks, or architectures they need to master to advance in their careers or take on new responsibilities within their current organizations. They actively seek out courses that align with their learning objectives and provide in-depth coverage of the relevant topics. For this group, the quality of the course content is a critical factor in their decision-making process. They often assess the quality based on the professional experience and expertise of the mentors or instructors delivering the course. They believe that learning from industry experts who have hands-on experience in the field will provide them with valuable insights and practical knowledge. In addition to content quality, factors such as price, flexibility in learning options, and the opportunity for direct interaction with the instructors also influence their choices. However, if they cannot find a suitable local option that meets their expectations, they often turn to online platforms like Udemy or Pluralsight, which offer a wide range of technology courses in English.

Internal Audit

Organization Overview

The core team behind this project consists of two experienced technology professionals who bring a wealth of knowledge in software development, IT project management, mentoring, and doing business in IT. The project's roots can be traced back to 2010 when one of the founders embarked on a year-long journey to help a classmate transition into the IT field. Starting with the fundamentals of programming, such as variables and binary code, the training program gradually progressed to more advanced topics, including three-tier architecture of enterprise applications. As technology evolved, the program was continually updated to include modern frameworks and coding best practices, and successfully used to train several other mathematically inclined friends.

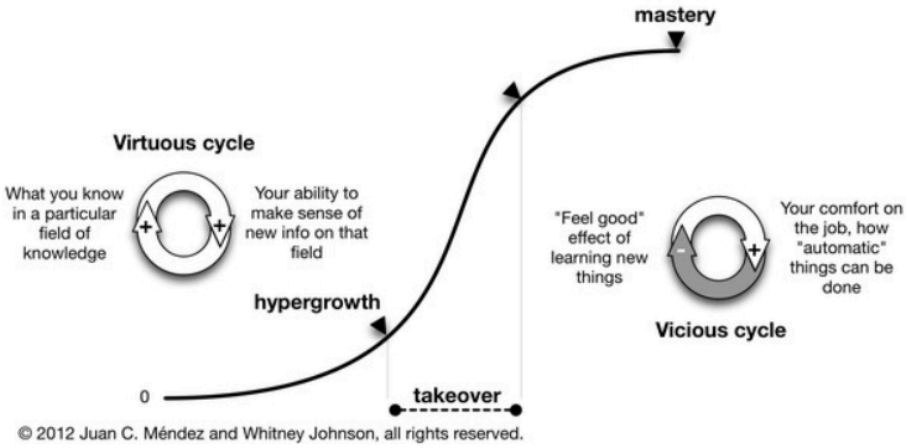
Given the program’s nature and duration, students often found it too expensive, while lower upfront prices were not financially attractive for instructors. To address this issue, an income-sharing model was adopted, allowing students to make payments after successfully completing their studies and securing employment in the IT industry. This approach has made the program appealing to both sides and it also automatically forced top quality of content due to both sides being motivated by the same goals.

The starting point for each of the students was always unique, which was based on what they remembered from school and university education, from what they tried to learn on their own, and from their friends who guided them. Hence, the first step was usually an assessment of skills, estimation of time needed to complete the program, and the cost of the program. Furthermore, each student had their own pace and learning schedule, often utilizing late evenings and weekend time. With these custom-tailored courses, instructors had to learn how to

adapt their teaching styles to different personalities and find ways to keep students motivated to succeed in their transition to the IT industry. This strong drive has been a key factor helping students stay committed to their studies and overcome obstacles along the way.

Figure 1

Personal Development S-Curve



According to Johnson (2012), who applied the S-curve theory to personal development, individuals experience slow initial progress when developing expertise in a new domain. This observation is particularly evident in the software development industry, as we identified after the graduation of several of our students. They often experience confusion and struggle to grasp the bigger picture until they acquire sufficient knowledge to combine different concepts and understand the underlying principles. Johnson emphasizes the importance of preventing feelings of disappointment, hopelessness, or lack of enthusiasm during these early stages of the learning process, highlighting the critical role of motivation. Once learners reach a certain level of understanding, they enter a phase of hypergrowth, enabling them to absorb information quickly

and independently, see Figure 1 above. We believe that the project's core team demonstrates strong leadership abilities that help students navigate the complexities and cross this confusion area.

After students reach a certain level, they often require assistance in preparing for job interviews and refining their CVs. Given the years of interviewing experience and working with an outstaffing business model, the team knows well what various companies seek in candidates during the hiring process. These insights include which aspects should be emphasized and which should be omitted. Most students struggle in their first interview, but these experiences help them better prepare for subsequent opportunities, ultimately leading to success in securing employment.

As more students achieved their goals, they started referring the program to their friends, which required additional attention from the partners, who also manage a 50-employee IT outsourcing company. This project could now become a spinoff within the company, taking the form of a new local IT school in Lviv. The students could practice their newly acquired skills on some of the real-world projects of the company, while the company has the opportunity to directly hire the best students after the program is completed. The project development is now also dependent on other resources, such as the company's existing employees, who could participate in training sessions, and administrative personnel, who will assist in organizing sessions and generating potential leads.

Based on previous training experience, the team has prepared materials that assist in study and make the process more convenient. This includes proprietary learning software built and maintained by the students themselves, which makes the learning process more efficient. Practice in software development is critical for successful learning, and asynchronous

communication is important for students who have other jobs. The tool makes it easier to communicate, follow assignments, and work on them remotely, while the progress and roadmap are transparent for both instructor and student. An integrated AI assistant helps students make progress when an instructor is not available.

As of 2024, the program's primary technical focus is on the Microsoft technology stack, which includes C#/.NET software development, web development, cloud development, and DevOps using Microsoft Azure, Power Platform, and Dynamics 365 development. This focus aligns with the existing expertise of the parent IT company, ensuring a seamless integration between the school and the company's operations. Some of these technologies, such as Power Platform and Dynamics 365, are promising and still rarely taught in other schools, which gives an opportunity to aspiring software engineers to pick an option where job competition among juniors and trainees is not as intensive as in other cases. This category of students consists of switchers who previously worked in banks, large Ukrainian corporations, and government institutions and they are the biggest group among the graduates of the school.

Table 2 (VRIO Analysis) summarizes valuable internal resources mentioned previously. As a small organization, we acknowledge that we may not possess any resources that are impossible to imitate. However, certain items, such as our proprietary learning software, require significant time and effort to replicate, while purchasing alternatives may not offer the same level of convenience. Despite this, we have identified a number of resources, which are rarely found in other schools, and combined together they could be used as a competitive advantage in the market.

Table 2

VRIO Analysis

Internal Resource	Valuable	Rare	Inimitable	Organized
Successful track of trained specialists	Yes	No	No	No
Payment after job is secured (income sharing)	Yes	Yes	No	Yes
Flexible learning schedule	Yes	Yes	No	No
Hybrid learning format	Yes	No	No	No
Convenient learning software	Yes	Yes	No	Yes
Possibility to be hired by parent company	Yes	Yes	No	Yes
Courses adapted for students' existing skills	Yes	Yes	No	No
Direct guidance from senior-level mentors	Yes	Yes	No	No
Preparation for interviews, CVs	Yes	No	No	No
Modern AI-enabled learning experience	Yes	Yes	No	No
Unique Power Platform course	Yes	Yes	No	Yes

SWOT Analysis

Our SWOT analysis concludes the diagnostics section by combining insights from other external and internal tools described above and assessing organization's position before strategic planning and decision-making.

- **Strengths:**

  Core team members are experienced mentors;

  Synergy with parent company gives projects, mentors, jobs;

  Unique courses for job positions with lower competition;

  Income sharing model eases customers' fears;

  Student-centric learning via flexible schedule, tailored courses.

- **Weaknesses:**

  Minimal brand awareness;

  No capacity yet to train high number of students simultaneously;

Lack of experience of scaling tech courses;

If study is successful, price is high compared to alternatives.

- **Opportunities:**

  Increased turnover in IT due to mobilization and other factors;

  Ongoing high demand in IT education;

  High number of wannabe switchers;

  Grads of traditional universities lack skills to secure IT jobs.

- **Threats:**

  AI might disrupt technology job market;

  Emerging technologies might make taught skills obsolete;

  Prolonged war kills IT sector leaving no jobs for trainees;

  Competition on IT education market intensifies.

Chapter 3: Planning

Segmentation, Targeting and Positioning

Segmentation

The technology education market in Ukraine can be segmented into six main categories: middle school students, high school students, undergraduates of tech faculties, undergraduates of non-tech faculties, switchers, and existing IT professionals. By analyzing each segment's unique characteristics, needs, and motivations, we can develop a comprehensive understanding of the market landscape and position our technology school effectively. This segmentation approach will also provide insights into potential partnerships, collaborations, and expansion opportunities within the broader technology education ecosystem in Ukraine.

Segment: Middle school students

Age: 12 – 14, male – 70%, female – 30%. These students are just starting to explore their interests in technology and programming. They are curious and eager to learn, but their knowledge is limited to basic computer skills. They are influenced by their parents and teachers, who encourage them to pursue STEM subjects. This segment is interested in interactive and engaging learning experiences that make programming fun and accessible. Parents are willing to invest in their children's education to give them a head start in the tech industry.

Segment: High school students

Age: 15 – 18, male – 70%, female – 30%. These students have a strong foundation in Math and programming, and they are among the best programmers in their class. They listen to their parents' advice and are confident about starting their career in the IT sector early. However, they lack guidance on where to begin. They spend a significant amount of time learning from

YouTube and seeking opportunities from big software companies. Parents are supportive and willing to pay for their education to help them succeed in the IT industry.

Segment: Undergraduates of tech faculties

Age: 18 – 22, male – 80%, female – 20%. These students have a solid foundation in programming and knowledge of several programming languages, thanks to their university education. However, they may not be as talented as some of their peers who are already working in IT. They struggle with self-motivation and require a instructor's guidance to make progress. They need help organizing and systematizing their knowledge. Price is a crucial factor for this segment when considering additional education.

Segment: Undergraduates of non-tech faculties

Age: 18 – 22, male – 60%, female – 40%. These students realize that they may not work in their field of study but possess a strong analytical mindset. They have friends working in IT who provide advice and guidance. They have learned the basics of a programming language but lack general knowledge. They understand the need for external help, making IT courses a natural choice for this segment.

Segment: Switchers

Age: 25 – 45, male – 60%, female – 40%. This segment is highly motivated to change careers but has limited free time due to their current employment, often in finance, education, retail, or service sectors. They have attempted to learn independently and through cheap courses but have failed to achieve their goal of securing a high-paying job in IT and making significant life changes. Their current jobs earn around 25,000 UAH. Switchers are primarily interested in a guarantee that their next attempt will be successful.

Segment: Existing IT professionals

Age: 20 – 45, male – 85%, female – 15%. These individuals are already working in the IT industry but are looking to upgrade their skills or learn new technologies to advance their careers. They have a solid understanding of programming concepts and are familiar with multiple programming languages. They are self-motivated and value their time, seeking focused and efficient learning experiences. This segment is willing to invest in their education if it provides tangible benefits for their career growth and earning potential.

Targeting

Taking into account that our organization is small, we do not have capacity yet to satisfy all market segments and we need to concentrate on one of the segments. The Switchers segment appears to be the best fit for us because our model serves better motivated but less skilled people. We do not have experience working with children which significantly differs from teaching adults. Our current position also does not fit to existing IT professionals who seek to upgrade their skills, this requires knowledge of niche technologies and experience of teaching them. Undergraduates of tech faculties would rather choose cheaper ways to get into IT. On the other hand, switchers might see it as a last hope. See targeting matrix in Table 3 below.

Table 3

Targeting Matrix

Segment	Attractiveness	Serving Strength
Middle school students	Low	Weak
High school students	Average	Weak
Undergraduates of tech faculties	Average	Average
Undergraduates of non-tech faculties	Average	Strong
Switchers	Average	Strong

Existing IT professionals	High	Weak

Each switcher possesses unique skills and prior experience. Some of them excel in mathematics and have an analytical mindset, while others may have good memory and the persistence to practice tasks. Certain candidates might have already attempted other courses and gained shallow knowledge of specific topics, thus requiring less attention to these areas. It is optimal to adapt the core courses to the existing knowledge of each candidate, omitting topics the candidate is already familiar with and dedicating more attention to their weaker points. To achieve this, we will employ a customized marketing targeting strategy based on mass customization. Specific aspects of mass customization of teaching are researched by Nistor (2009) who stated, that the essence of mass customization of teaching lies in two characteristics: the point of the customer involvement in the process and the type of modularity the product offers. Hence, for mass customization to be successful it is crucial to prepare programs in a well-designed modular structure, and work together with the students on the learning plan.

Positioning

It is crucial for a new market entrant to establish a clear and compelling position, which will help differentiate the business from competitors, attract the target audience, and communicate the unique value proposition effectively. The technology education market in Ukraine is diverse, with various players targeting different segments and offering a range of services. To effectively target Switchers segment, a technology school should emphasize on flexibility and guarantee of successful results, while helping take away fears of failure.

Positioning Statement: “For all switchers who dream of getting a job in IT, our technology mentoring school helps you find a unique path built on top of existing skills and guarantees successful results, or it will cost nothing.”

This positioning statement clearly identifies the target audience (switchers), their aspirations (getting a job in IT), and the key differentiators of a school (personalized mentorship, unique path built on existing skills, and a guarantee of success).

Marketing Mix

In order to plan and execute marketing strategies effectively, marketing mix outlined below will serve as a fundamental framework for our organization. For the technology education industry, which is service-oriented, it makes sense to use the 7Ps approach. This marketing mix focuses on the target segment of Switchers, based on the analysis provided in the Segmentation, Targeting, and Provisioning section.

Product/service

Our goal is to provide tailored courses for career switchers, built upon two foundational programs: .NET Fullstack Engineer and Power Platform Developer. The .NET Fullstack Engineer course is a popular offering at many other schools, preparing students for roles frequently found in Microsoft-stack web-based projects. In contrast, the Power Platform Developer course is a specialized program focusing on developing business applications within the Microsoft ecosystem, such as Dynamics 365 Sales or Dynamics 365 Business Central. As of 2024, job market competition for Power Platform Developer positions is significantly lower compared to web-based solutions, although demand is also not as high. Each course will consist of a series of modules that students must complete to demonstrate proficiency in the subject matter. These

modules cover various concepts like variables, bytes, types, programming language syntax, and architectural principles. Based on a candidate's prior experience, certain modules may be omitted, resulting in a personalized curriculum for each student.

Place

The training sessions will be conducted in a hybrid format, combining both offline and online elements. Offline sessions will take place at the parent company's office and will include group lectures on theory, personal progress reviews, code reviews, and collaborative work on training exercises and projects. When offline training is not feasible, virtual meetings will be organized through Microsoft Teams to facilitate status calls and replicate the offline training experience.

Price

As previously mentioned, an income-sharing model is proposed to meet the needs of career switchers. The core concept of this model is that the courses are entirely free until the student achieves a successful outcome and secures employment in the IT industry. This includes scenarios where a student drops out of their study after several months of training. Once a student obtains a job in the IT sector and their salary exceeds $1,000, they pay 30% of their income until a predetermined amount is reached. This amount is unique to each student and is agreed upon before the start of training. It is based on an estimate of the effort required to achieve the minimum necessary level, typically ranging from $4,000 to $8,000 in total. Although these prices appear substantially higher than those of courses offered by many other schools, this pricing model is highly appealing to career switchers because they do not incur any losses if their study is unsuccessful. Conversely, if the study is successful, even after paying the 30% share, students often experience an increase in their income compared to their previous jobs.

Promotion

The majority of switchers are not aware of the income-sharing pricing model, and without adequate explanation, the high prices may deter them. Due to that and given the customized nature of the programs, the most effective promotional approach is personal selling. Our team could find such candidates on various platforms such as DOU, Djinni, and Work.ua, specifically targeting individuals seeking trainee positions. To build credibility during sales activities, additional resources could be used. An online presence through a landing page and social media advertising focused on the Lviv region will raise awareness and could be beneficial for future enrollment cycles.

Physical Evidence

Physical evidence will include branding of the school including logo and color palette, and similar branding of learning management system. It will also include a landing page with testimonials and success stories. For graduates of the training program it also important to have tangible evidence of their accomplishments. While a certificate of completion is one of the easiest forms of recognition to obtain, many companies seeking skilled candidates do not care much about formal education, diplomas, and certificates. Well-crafted CVs and LinkedIn profiles are far more important, and they significantly increase the likelihood of being noticed by recruiters. A portfolio of completed student projects, including source code, will be instrumental in helping graduates showcase their skills and explain their experience effectively.

People

The team will consist of two co-founders, additional instructors, and an administrator. The co-founders will be responsible for conducting initial interviews and skills assessments, developing personalized learning plans, and overseeing the learning process and progress of

each student. They will also contribute to the teaching of specific complex topics. The other experienced instructors will handle the majority of the teaching, covering various subjects. It is crucial that these instructors possess not only strong technical skills but also the ability to effectively explain complex concepts to their less experienced students. The administrator will be tasked with handling other essential activities, such as generating leads, organizing training sessions, managing social media and the landing page, collecting feedback, and other administrative duties.

Processes

The administrators will initiate contact with potential candidates through various platforms, including DOU, Djinni, and Work.ua. Interested candidates will receive a briefing about the school and be invited to attend an interview. During the interview, the co-founders will assess the candidate's skills and develop a personalized learning plan, along with providing the cost of the program. Candidates who choose to proceed will become students, and a more comprehensive plan and schedule will be created and entered into the learning management software. Students will start their learning journey through one-on-one or group sessions and pair-programming activities. Following a two-week trial period, students will be required to sign the necessary documents to continue their studies. Their progress will be tracked and monitored using the learning software. Administrators will conduct regular surveys to gather feedback and proactively identify challenging topics for each student. Upon completion of all modules, students will participate in a series of internal interviews to determine if any modules or topics need to be revisited. Finally, students and instructors will collaborate on refining their CVs and preparing for real-world job interviews.

Customer Journey

The following customer journey outlines a typical path of switchers from finding out about the school to advocating its services.

Awareness

- Switchers become dissatisfied with their current jobs or see better opportunities in the IT industry.
- They reach out to friends in IT for advice about how to learn software development.
- They try learning online or through cheap low quality courses.
- They look for trainee jobs on software development resources such as DOU, Djinni or general purpose resources such as Work.ua, Rabota.ua and other.
- They are contacted by a representative of our technology education school and briefed about the terms and invited for an interview.

Consideration

- Switchers attend a meeting with school's cofounders.
- They are asked in details about their previous experience, their skills, level of English and motivation, as well as the time they could allocate for the study process.
- They are presented with a draft learning plan and estimated duration of the program, and the total program price is determined.

Decision

- Switchers evaluate the unique value proposition, such as personalized mentorship, income-sharing model, and job guarantee.
- They assess their chances to get a job in IT without such training, and their fit for the program.

- They may seek advice from friends or family before making a decision.
- They decide to start a free 2 weeks no-commitment trial of the program.

Enrollment

- Switchers familiarize themselves with AI-enabled learning management software.
- During initial training sessions they start understanding the process and learning management software better.
- They like the process and see progress, so they sign the income-sharing agreement and other necessary documents.

Learning

- Switchers engage in a series of online and offline sessions with instructors on topics they need to improve their knowledge.
- They work hard to perform home assignments and tests in the system.
- They have regular check-ins with their instructors to review progress, ask questions, and get support.
- They collaborate with other students and participate in group discussions and pair programming sessions.
- They take part in real-world projects by working on simple assignments and this way develop their understanding of the process.

Graduation

- Switchers complete all the required coursework and assessments.
- They participate in mock interviews and receive feedback on their job search strategies.
- They work with the school to refine their resumes and online profiles.

- They graduate from the program with a portfolio of projects and a certificate of completion.

Job Search

- Switchers apply for IT jobs with the support and guidance of the school.
- They have post-mortem sessions after each failed interview.
- They continue to receive job search support and interview coaching until they secure employment.

Alumni

- Switchers start their new careers in the IT industry and continue develop themselves as professionals independently.
- Their salary increases and eventually they start making income-sharing payments.
- They become part of the school's alumni network and receive advices on the market conditions including when it is a good time to ask for a raise.
- After some time, they complete their part of the contract and with high salary and no more commitments, they are happy with their decision.
- They provide feedback and testimonials to help the school improve its programs and attract new students.

Objectives and Go To Market Plan

The primary objective of our technology education school is to penetrate the IT education market of Ukraine and establish a strong presence in the Lviv region. We aim to enroll a minimum of 24 students by the end of 2024, focusing on providing high-quality education and training to aspiring IT professionals. To achieve this goal, we will develop and tune two

specialized programs, which will be designed to equip students with the necessary skills and knowledge to secure employment in the IT industry.

To increase brand awareness and attract potential students, we will launch a school landing page and promote it through social media channels targeting the Lviv region. Our goal is to achieve 500 unique visitors to the website before the end of November 2024, which will be verified using Google Analytics. This online presence will serve as a platform to showcase our unique value proposition and build credibility among prospective students.

In addition to online promotion, we will actively seek out and interview up to 100 interested candidates by the end of 2024. During these interviews, we will emphasize our organization's strengths, particularly our commitment to providing free education until the student secures a job in the IT industry. This approach ensures that our goals are aligned with those of our students, highlighting a strong sense of partnership and shared success.

To maintain a high level of student satisfaction and ensure the effectiveness of our programs, we aim to achieve an NPS (Net Promoter Score) level of 85% after all students from the first wave have graduated. This will be verified through surveys and along with the actual percentage of employed graduates will serve as a key performance indicator for our school's success.

Our strategy will initially focus on students from the Lviv region, allowing us to concentrate our resources and build a strong local presence. We will develop comprehensive training materials and rely on existing proprietary learning software to achieve an efficient study process. We are going to organize dry-run interviews and CV tuning sessions to prepare our students for successful job placement. By providing an excellent education and successful track of records, we aim to establish a reputation for excellence in the IT education market. We will

rely on this reputation and recommendations in the market where word of mouth is the most important factor, and this way we will differentiate ourselves from the competitors on the market.

As we grow and gain recognition, we will explore opportunities to expand our reach and impact. This may include partnering with local businesses and organizations to provide internship and additional employment opportunities for our graduates, as well as collaborating with industry experts to enhance our curriculum and stay at the forefront of technological advancements. To further increase our pool of potential students, we will implement a referral system and explore cooperation opportunities with traditional educational institutions. Moreover, we will closely monitor developments in the field of artificial intelligence and continue using it in our learning process to enhance the educational experience and outcomes for our students. In the future, as we get experience and a stronger position in the Lviv region, we will consider the possibility of establishing similar schools in other locations, replicating our successful model and expanding our impact on the IT education landscape in Ukraine and beyond.

Organization Strategy

Organization Structure and Culture

As mentioned earlier in this chapter, our technology education school will adopt a lean organizational structure, consisting primarily of the co-founders, experienced instructors, and an administrator. This streamlined approach will allow us to remain agile and resilient to the fast-changing technology context. We will also be able to shorten feedback loops and focus on delivering high-quality education to our students. Our goal is to maintain efficient collaboration

and decision-making. Central to our organizational strategy is the cultivation of a robust learning culture. We will inherit and build upon the parent company's culture of continuous learning and growth. We recognize that in the rapidly evolving landscape of technology, it is essential for our students to develop a lifelong learning mindset. We aim to teach them how to learn, which may become the single most important skill that will bring success to their careers.

It is important to build a supportive learning environment that will be characterized by psychological safety, where students feel comfortable taking risks, asking questions, and learning from mistakes. We will try to prepare students for future jobs in IT by promoting collaboration and peer-to-peer learning. Regular feedback sessions and opportunities for self-assessment will be integrated into our programs and proprietary software, allowing students to track their progress and identify areas for improvement. By involving students in the goal-setting process and encouraging them to make public commitments to their learning objectives, we can create a sense of ownership and accountability. Cialdini (1995) names commitment and consistency as one of the seven principles of influence. After committing themselves to specific tasks such as pet projects or reports to other students on specific topics, students should be more willing to work hard and achieve their goals. This keeps students motivated, which helps them finish their studies earlier, and that is directly linked to our organization's financial objectives.

Another factor that helps improve students' motivation is regular appraisals, which are more closely linked to the Friendship/Liking principle in Cialdini's system. By receiving recognition, students will know they are on the right track and making progress, which means that their goal is closer than before. Behavior psychologists have long understood the power of positive reinforcement in shaping and strengthening desired behaviors, though the key to effective positive reinforcement is identifying the desired behavior and choosing an appropriate

reward. An example of such a desired behavior that aligns well with our organization's goals is completing home assignments on time, and possible rewards could range from verbal praise to recognition on a virtual achievement board. By rewarding students for engaging in specific actions, positive reinforcement increases the likelihood that these behaviors will be repeated in the future.

Human Capital and Quality of Education

In the proposed business model for a technology education school, the quality of education is vital for the school's success. High-quality education is essential for achieving positive outcomes, financial returns, and favorable reviews from graduates, which will help attract future cohorts. The organization's success relies on the co-founders' soft and hard skills, as well as their ability to select the right instructors to accelerate the learning process.

Instructors must not only be subject matter experts but also skilled educators who can break down complex concepts into simple, easy-to-understand explanations. The co-founders' previous experience has equipped them with the tools to identify instructors who excel in these scenarios. They have compiled a list of practical cases and may ask potential instructors to explain some of them. For instance, if a candidate can draw parallels between binary search and dictionary books or "guess the number" games, it is a good indication of their teaching ability. Additionally, instructors should be engaging and entertaining to keep students interested and motivated. They should also be empathetic and perceptive enough to recognize situations where students claim to understand a topic but actually do not, which is a common scenario in technology education.

To be attractive for high-quality instructors, the school must offer competitive compensation that is comparable to what they would earn in their daily engineering activities. Even though losing an instructor in the middle of program is not fatal, it is preferable to have the same instructor working with the students throughout the duration of the course, which might span several months. Ideally, instructors should also be open-minded and passionate about sharing knowledge. Research conducted at the University of York and University of Sydney suggests that a teacher's personality, based on the Big Five model, may influence their teaching effectiveness, although it is not a strong predictor. The study found that high levels of teacher neuroticism may negatively impact students' performance self-efficacy due to emotional contagion processes, causing students to absorb negative emotions from their teachers (Kim, Dar-Nimrod, & MacCann, 2018). Conducting simple personality tests with instructor candidates is a good practice for identifying potential warning signs early on, as self-doubt is one of the most significant controllable factors that can cause students to drop out of their studies. When students discontinue their education, it results in financial losses for the school. By administering these personality tests, the school can proactively screen for instructors who may be prone to exhibiting self-doubt or other traits that could negatively impact student performance and retention. This approach allows the school to make informed hiring decisions and select instructors who are more likely to foster a positive learning environment, ultimately contributing to the school's financial stability and success.

In addition to the co-founders, the school has identified a pool of promising instructors who can help advance the learning process. This pool includes skilled specialists from the parent company and a few external experts. These candidates appear to be a great fit from both technical and cultural aspects.

AI and Technology Capabilities

The development of different AI tools caused concerns about security of technology jobs in the future. However, at this point these tools are only good as assistants to humans that could amplify their performance. These tools are also very useful when learning new frameworks or technologies, or when learning to code in general. This presents a good investment to speed up the studies.

GitHub Copilot is one of such artificial intelligence-powered code completion tools. It is developed by GitHub in collaboration with OpenAI and is designed to assist developers by providing intelligent code suggestions and automating repetitive coding tasks. One of the key features of GitHub Copilot is its ability to understand the context of the code being written. It analyzes the surrounding code, comments, and project structure to provide relevant and accurate code suggestions. It is integrated into popular code editors such as Visual Studio or Visual Studio Code, and supports a wide range of programming languages, including C#, JavaScript and TypeScript, aligns well with the school's initial course offerings.

By incorporating GitHub Copilot into the curriculum, students can quickly learn syntax and explore alternative solutions. This tool enables trainees to prototype ideas and experiment with different concepts without writing every line of code from scratch. Additionally, students can learn code patterns and better understand how code is structured and organized in real-world projects, reducing frustration often associated with the challenges of coding.

However, it is crucial to emphasize that while Copilot can be a valuable learning aid, trainees should actively engage in understanding the code they write and not rely entirely on Copilot's suggestions. They should review and analyze the generated code, ask questions, and seek explanations to ensure they comprehend the underlying concepts and principles. At this

stage, GitHub Copilot cannot fully replace human instructors and should be used under their guidance.

Similarly, AI-enabled learning management software can significantly accelerate students' progress. By integrating modern AI tools through simple APIs, these platforms can greatly enhance the learning experience. One of the key advantages is the ability for students to access learning materials anytime and anywhere, allowing them to learn at their own pace and convenience.

Moreover, AI-powered systems provide immediate feedback on assignments, quizzes, and assessments. This real-time feedback helps students identify areas where they need improvement and reinforces their understanding of the subject matter. By highlighting the areas that require additional attention, students can focus their efforts on addressing knowledge gaps and strengthening their skills.

Perhaps the most significant benefit of AI-enabled learning management software is its ability to adapt the learning pace based on each student's understanding of the material. For students who quickly grasp concepts, the platform allows them to move ahead, ensuring they remain engaged and challenged. On the other hand, students who need more time to absorb the information can receive additional support, such as supplementary resources and targeted exercises, to solidify their knowledge. This personalized approach ensures that every student has the opportunity to learn at a pace that suits their individual needs, ultimately leading to better learning outcomes.

Partnerships

To further enhance the academy's impact and provide additional opportunities for our students, we will actively seek partnerships with IT companies, particularly those in the product

development space. These partnerships will be mutually beneficial, offering advantages to both our academy and the partner companies.

For our academy, collaborating with IT product companies opens up a valuable channel to help our students secure employment upon graduation. By establishing strong relationships with these companies, we can gain insights into their specific skill requirements and tailor our curriculum accordingly. This alignment ensures that our graduates are well-prepared to meet the needs of the industry and increases their chances of landing jobs within our partner companies. Moreover, as our graduates secure employment and start generating income, the academy benefits from the income-sharing agreements, creating a sustainable revenue stream to support our growth and expansion.

From the perspective of our partner companies, especially those in the product development sector, our academy offers a reliable source of high-quality junior specialists at competitive rates. Product companies in Ukraine often face the challenge of balancing cost-effectiveness with the need for skilled talent. By partnering with our academy, these companies gain access to a pool of well-trained graduates who possess a solid foundation in the latest technologies and best practices. Our rigorous curriculum, personalized mentorship, and emphasis on practical experience ensure that our graduates are equipped with the skills and knowledge necessary to contribute effectively to product development teams from day one.

To establish and nurture these partnerships, we will actively engage with the local IT community, participating in industry events, conferences, and networking opportunities. We will showcase the success stories of our graduates and highlight the value our academy brings to both students and partner companies. Additionally, we will work closely with our partners to understand their specific needs and develop customized training programs that align with their

requirements. This collaborative approach ensures that our graduates are not only technically proficient but also well-versed in the specific tools, frameworks, and methodologies used by our partner companies.

As our partnerships grow and our graduates make meaningful contributions to the success of our partner companies, we anticipate increased demand for our services. This positive feedback loop will further strengthen our reputation in the industry and attract more students and partners, ultimately contributing to the long-term sustainability and growth of our academy. By forging strategic partnerships with IT product companies, our academy will create a win-win situation, providing students with enhanced job prospects, generating sustainable revenue for our operations, and supplying our partners with a reliable source of highly skilled junior talent at competitive rates.

Financials

Pilot

With the proposed income-sharing model, it is difficult to immediately understand the financial benefits because the returns from the activities usually happen in the period between one to four years from these activities. This is because from the time a student signs up, it might take up to 12 months for the student to graduate, and then another 12 months for the student to reach the threshold level of salary to start generating returns for the organization. Then, the income is shared for a period of around two years.

Thus, in our analysis, we will start with the pilot. The goal of the pilot is to sign up 24 students based on the income-sharing model. Each student will have their own total price for the training, which usually ranges from $4,000 to $8,000. In our calculation, we would assume that

the average fee limit is $6,000. The income-sharing model will assume that the school fee is 0% until the salary reaches a certain threshold ($1,000), and then 30% when the salary exceeds this threshold.

At any point in time, the school will have a specific number of active students. This number changes whenever one of three events happens: a new student signs up, drops out, or graduates. Based on our previous experience, we assume that on average, a quarter of students will drop out from the program at various stages due to various reasons. These could be because of lost motivation, the study appearing to be too complicated for them, or major changes in life such as the birth of children, moving to another country, job promotions, etc. Hence, three quarters of students are expected to graduate, and this usually happens four to eight months from the start of their studies. Another two months might be required for them to find their first job in IT.

For the analysis of our pilot project, we would assume that we do not sign up more students when we reach our goal of 24 active students, even though the number of signed up students is expected to be more than 24 as we replace drop-outs from the first months with new sign-ups. Then we could evaluate forecasted financial parameters in this isolated scenario. In the real world, the school will not stop and continue operations by signing up more students and even grow the number of active students in the future years. We would analyze this more later in this chapter.

The expected cost structure for the pilot program is relatively straightforward and consists of several key components. Firstly, there will be costs associated with the design and development of a compelling and informative landing page, which will serve as the primary online presence for the school and a crucial tool for attracting potential students. Professional

services such as legal advisory and accounting will be another part of the cost structure. Additionally, advertising budget will be needed to promote the program.

However, the most significant portion of the costs will be allocated to the compensation of the school's personnel, namely the administrator and the instructors. Due to expected low workload for the initial phase of 24 active students, the administrator, who will be responsible for lead generation activities and overall program management, will be employed on a part-time basis with a 50% load and a monthly salary of $200.

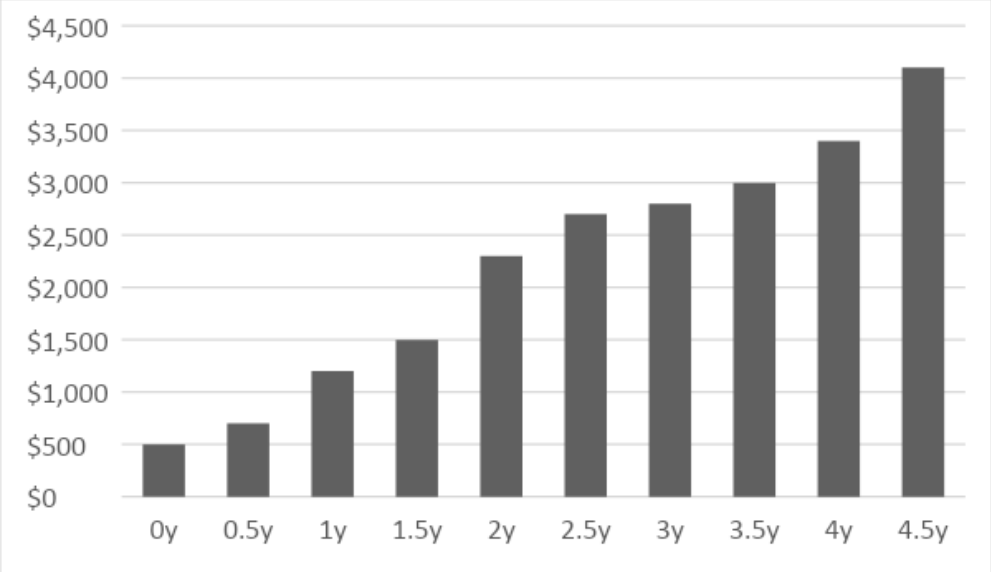
On the other hand, the instructors, who will be the backbone of the program and directly responsible for teaching and mentoring the students, will command a much larger share of the budget. Due to the high market salaries of IT specialists, particularly those with industry experience who will be performing the mentoring activities, the compensation of instructors is expected to be by far the biggest chunk of the costs, accounting for more than 90% of the total expenses. To ensure that the students receive quality education and personalized attention, the school will maintain a student-to-instructor ratio of 6:1. Based on the assumption of a $25 per hour rate and an approximate load of 40 hours per month, each instructor will receive a monthly compensation of $1,000 for managing a group of six students. With a target of 24 active students for the pilot program, the school will require four instructors, resulting in a total monthly instructor compensation of $4,000.

Another important assumption is related to the school's future revenues, which are directly correlated with the average salary in the IT sector for tech workers. We use data from DOU (2023, December) to estimate this. Figure 2 shows average salaries depending on the experience (in years) of tech software engineers. We use junior software engineer numbers for

experience levels of up to 2 years, middle software engineer numbers for 2 to 4 years, and senior software engineer numbers for 4+ years of experience.

Figure 2

Average salaries of tech workers in Ukrainian IT sector by years of experience



In this separate scenario, with the exception of accounting services the organization only incurs expenses during the study process of the initial cohort of students, which is expected to last for approximately one year from the start of the project. The estimated monthly expenses vary from $500 to $4,400, with a total amount of $27,700 for this period.

Based on the anticipated graduation schedule and estimates of salary levels for the graduates as they gain experience in the IT sector, it is possible to evaluate the revenues generated from these students. These revenues are expected to materialize in the third and fourth years after the start of the project, as the graduates begin their careers and start earning salaries above the threshold level. The revenue stream is projected to last for approximately one

and a half years, with peak monthly values reaching around $7,700. The total amount of revenue generated during this period is estimated to be $96,000 before tax. Applying a 5% income tax rate, the after-tax revenue is calculated to be $91,200.

To assess the financial viability and attractiveness of the pilot project, two key metrics are employed: Net Present Value (NPV) and Internal Rate of Return (IRR). The NPV is calculated by discounting the future cash flows (revenues and expenses) to their present value using a discount rate, which is calculated by the following formula:

$$R_e = R_f + (R_m + R_s - R_f) * B_{unlevered}$$

Here risk free rate R_f is taken at 4.5% according to average US treasury yields. $B_{unlevered}$ for the education industry is taken from Damodaran table and is equal to 0.54, similarly sovereign risk of Ukraine R_s is equal to 17.5%. Expected market return R_m is taken at 9.5%. Hence, the discounting rate is equal to 16.65%.

Based on the given scenario, the NPV of the pilot project is estimated to be $49,530, indicating that the project is expected to generate a positive net value over its lifetime, considering the time value of money. For this pilot project, the IRR is calculated to be at a 68% level, which is significantly higher than the assumed discount rate of 5%. This high IRR suggests that the project has the potential to generate substantial returns on investment, making it an attractive opportunity from a financial perspective.

Sensitivity Analysis

To identify the most critical and high-risk factors that could impact the project's success and NPV, we conduct a sensitivity analysis using the same model employed for NPV calculation. This analysis examines several key parameters, including average school fee, instructors'

compensation, tax rate, the percentage of students who successfully graduate, and future IT salary expectations when returns from the income-sharing model are anticipated.

Figure 3

A spider diagram showing how changes in various parameters affect NPV.

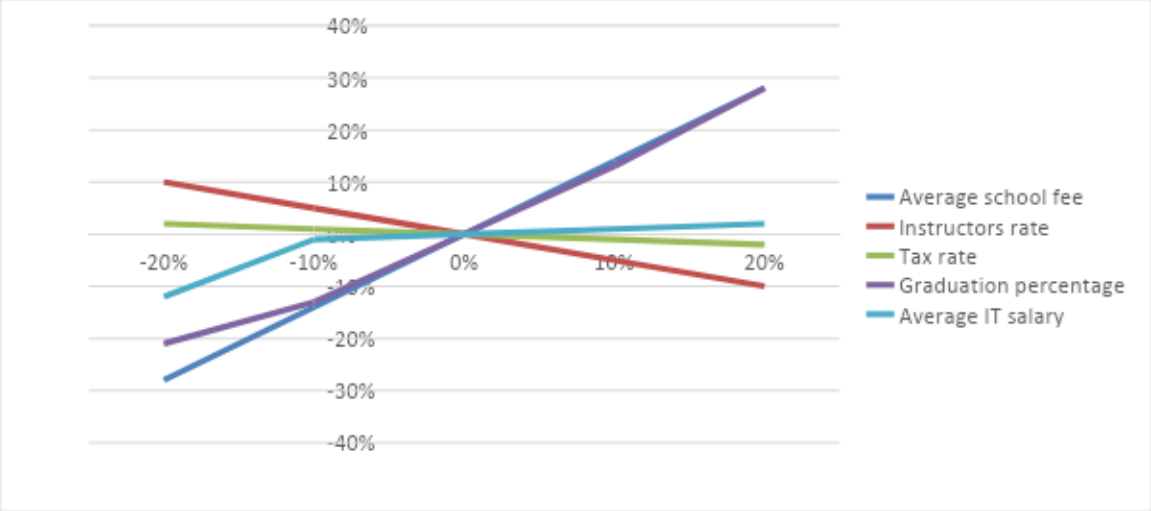


Figure 3 above presents a spider diagram illustrating how variations in these parameters might influence NPV. The lines closest to the vertical axis are considered the most risky, as even minor changes in these parameters could result in significant NPV fluctuations. Two of the five parameters appear to be the most crucial in the current model.

Firstly, the average school fee, initially assumed to be $6,000, could vary in reality. The sensitivity to this parameter emphasizes the importance of accurately assessing candidates' skills and training duration, and that we do not have enough room to decrease the price during negotiations.

Secondly, the percentage of successful graduations is a critical parameter. Our 75% estimate is based on prior experience; however, closely monitoring this metric is essential. Each incomplete training leaves the school with training costs without the opportunity to recover

them through the income-sharing agreement. To maintain this parameter at an acceptable level, the school must monitor the Net Promoter Score (NPS) and keep students motivated throughout their training.

Cashflow Forecast

If everything goes according to plan, there is no need for the school to cease operations after the initial cohort graduates. Instead, it makes sense to maintain a constant level of activity in the initial phase and then gradually increase it over time. In the cashflow forecast, we use the same assumptions and calculations as in the previous section, with the main difference being that the number of active students is consistently maintained at 24. This means that whenever a student graduates or drops out, they would be promptly replaced with a new student to keep the enrollment level stable. To sustain this level of student participation, the school plans to continue advertising through social media and maintain an active lead generation process.

This approach would still result in the first revenues being generated only when the students from the first cohort graduate, secure jobs in the IT industry, gain experience, and exceed the salary threshold. However, with this level of activity, the school is expected to burn cash at a rate of approximately $4,250 per month until that period. This is because the school will continue to incur expenses related to the compensation of the administrator and instructors, as well as ongoing advertising and lead generation efforts, without generating any revenue during this time. Our calculations indicate that initial investment of around $30,000 is needed to sustain the school's operations in 2024 and early 2025. The financing for this amount will come from the shareholders. Additional loans of $50,000 and $20,000 will be required in 2025 and 2026 correspondingly.

However, when the school continues to operate and generate revenue from the income-sharing agreements with its graduates, it will eventually reach the point where the revenues exceed the ongoing expenses. This will allow the school to become self-sustaining and expand its operations to accommodate more active students. Table 4 shows annual forecasted cash flows in US dollars.

Table 4

Forecast of cash flows, amounts in dollars

	2024	2025	2026	2027	2028
Net cash provided by operating activities	-16,300	-53,500	-22,151	69,133	82,212
Net cash used in investing activities	0	0	0	0	0
Net cash used in financing activities	30,000	50,000	20,000	-70,000	0
Net increase in cash, cash equivalents	13,200	-3,500	-2,151	-867	82,212
Cash and equivalents, beginning of period	0	13,200	9,700	7,549	6,682
Cash and equivalents, end of period	13,200	9,700	7,549	6,682	88,894

P&L Forecast

In an income-sharing model for an educational program, even though cash is not received before, during, or immediately after the learning process, it is important to recognize the revenues over time as the services are rendered. The specific terms of the income-sharing agreements should determine the timing and amount of revenue recognition. To prepare a forecast of the income statement, we will base our assumptions on an average income-sharing agreement earning $6,000 and an average student requiring six months of training. We will use the percentage-of-completion method based on the number of active students to recognize revenues. Additionally, we will assume that only 75% of students will ultimately generate

revenue, as we expect a 25% dropout rate. Therefore, each active student could be recognized as generating $750 in monthly revenue (calculated as 1/6 x 3/4 x $6,000).

Instructors' compensation will be categorized as a cost of services, while other expenses mentioned above will be classified under sales, general, and administrative expenses. Although the 5% income tax is based on cash revenues, we will adhere to accrual accounting principles and recognize these taxes similarly to revenues.

The $50,000 loan mentioned above will require three payments of $2,500 at the end of 2025, 2026 and 2027. Similarly, the $20,000 loan will require two payments of $1,000 at the end of 2026 and 2027. Table 5 presents the forecasted profit and loss statement elements for the years 2024 to 2028.

Table 5

Income Statement forecast, amounts in dollars

	2024	2025	2026	2027	2028
Revenues					
Income sharing	61,500	216,000	368,250	492,000	647,250
Total Revenues	61,500	216,000	368,250	492,000	647,250
Cost of services	14,000	48,000	84,000	112,000	144,000
Gross profit	47,500	168,000	284,250	380,000	503,250
SG&A	2,800	3,000	6,150	7,400	8,400
EBIT	44,700	165,000	278,100	372,600	494,850
Interest	0	2,500	3,500	3,500	0
EBT	44,700	162,500	274,600	369,100	494,850
Tax	3,075	10,800	18,413	24,600	32,363
Net income	41,625	151,700	256,188	344,500	462,488

Balance Sheet Forecast

In the income-sharing business model, the expected future income from graduated students can be considered a form of asset, specifically a "contract asset". This is because the school has a contractual right to receive a portion of the graduates' future earnings based on the income-sharing agreements signed with the students. To construct a forecasted balance sheet at the end of 2028, we can use the values from the forecasted cash flows and income statement. At this point, it is expected that any loans taken by the school to fund its operations during the initial years will have been repaid. The only liabilities remaining on the balance sheet would be current liabilities, which primarily include salaries payable to the school's staff.

On the equity side of the balance sheet, there will be two components: contributed capital and retained earnings. The contributed capital of $30,000 represents the initial investment made by the school's founders to kickstart the operations. The retained earnings, on the other hand, will include the cumulative profits generated by the school from 2024 to 2028, which sum up to a significant value.

Moving to the asset side of the balance equation, the school's assets will consist of two main components: cash and equivalents, and contract assets. The cash and equivalents portion represents the liquid funds available to the school for its day-to-day operations and any future investments or expansions. However, the larger portion of the assets will be recognized as contract assets, which represent the future payments expected from the graduates based on their income-sharing agreements. These contract assets are essentially the future cash flows that the school anticipates receiving from its graduates in the future. These values depend on many assumptions outlined earlier in this chapter, such as average program duration and percentage

of dropouts, so the school may need to periodically assess and adjust the value of these contract assets based on the actual performance of its graduates and any changes in the underlying assumptions.

Table 6

Forecast of balance sheet as of 31 December 2028, amounts in dollars

Assets	
Cash and equivalents	88,894
Contract assets	1,210,356
Total assets	1,299,100
Liabilities	
Accounts Payable	12,600
Total liabilities	12,600
Equity	
Contributed capital	30,000
Retained earnings	1,256,500
Total equity	1,286,500

Table 6 above presents a forecasted balance sheet based on the current assumptions and forecasted performance of the school.

Chapter 4: Implementation

Resources

Resource allocation decisions are central to the strategic management of a company, as they cumulatively direct the organization's long-term direction and prosperity. According to Marko Seppänen (2009) current business model conceptualizations often fail to provide explicit consideration for the composition and structures of resource configurations, limiting their usefulness in aiding decision-making. By adopting a comprehensive framework suggested by

Marko, we could receive a holistic view of resources, considering not only tangible aspects but also intangible ones such as relationships, knowledge, and legal rights.

Human Resources

Skills, experience, and personal attributes of the instructors are by far the most important factors that will affect the quality of the educational process. Fortunately, the co-founders of the school possess years of experience in the IT industry, including mentoring junior specialists. This experience has also helped grow a network of other instructors who could join as instructors or guest speakers. The school will also invest in the continuous professional development of its instructors to ensure they stay up to date with the latest industry trends and teaching methodologies. In addition to core team members the school will use services of third parties such as legal, accounting, design, etc.

Organizational Resources

The technology education school can enjoy synergy with the parent IT software development company. In particular, some students after graduation could be hired by the parent company, providing a direct talent pipeline. The lean organizational structure helps save costs and speed up decision-making processes. The school will also capitalize on the parent company's established brand reputation and industry connections to attract students and forge partnerships with IT companies for internships and job placements. Furthermore, the school will develop a strong organizational culture that fosters innovation, collaboration, and continuous improvement.

Physical Resources

The school benefits from access to the parent company's office space, which can be utilized for educational purposes during non-working hours, such as evenings and weekends,

which is most often the case when teaching switchers. Teaching IT is 80% practice, and performant hardware is essential for effective programming sessions. However, the school does not plan to provide laptops to all students and instead relies on the students' personal machines, so hardware is going to be one of the requirements before admission.

Financial Resources

The school will require an initial investment for the first two years of operations, sourced from the co-founders' contributed capital and loans from fellow IT entrepreneurs. As the school matures, a significant portion of its revenue will come from the income-sharing model, where graduates contribute a percentage of their income. To diversify its revenue streams, the school will explore opportunities such as other grants from the government or alternative business models for full-online study.

Legal Resources

To protect the school from potential breaches of the income-sharing agreement, student contracts will be carefully drafted, clearly outlining the terms and conditions. As for the intellectual property, the parent company's IP on the custom learning management software will be leveraged to enhance the learning process, with regular updates for continuous improvement. On the other hand, Microsoft community licenses could be utilized for classroom learning environments. Additionally, the school will establish policies and procedures to safeguard intellectual property, student privacy, and ethical conduct.

Informational Resources

The custom learning management software will provide valuable insights into student performance, identifying areas that require additional attention. The school will maintain a comprehensive repository of assessments and practical assignments, continuously updated

based on practical demands. The co-founders' experience in managing an IT software development company will guide the program structure, ensuring alignment with the skills sought by potential employers. The school will actively gather and analyze data on industry trends, job market demands, and student feedback to refine its offerings and teaching methods. Moreover, the school will establish a knowledge management system to capture and share best practices among instructors and staff.

Relational Resources

The school will foster a robust alumni network, actively monitoring the progress and achievements of former students. This network will serve as a valuable resource for current students, facilitating mentorship, job referrals, and industry insights. The school will cultivate strong relationships with IT companies, industry associations, and educational institutions to create opportunities for collaboration, knowledge sharing, and student exposure to real-world projects. These relationships will also help the school stay attuned to the evolving needs of the industry and adapt its curriculum accordingly. Additionally, the school will prioritize building a strong brand reputation and positive word-of-mouth, leveraging satisfied students and successful alumni as brand ambassadors.

Project Plan

Implementation Roadmap

The proposed project planning approach is stage-gate with several phases, which are required for the successful implementation of the pilot program that includes the development of two courses, enrollment, and graduation of the first cohort of students. Each phase could be executed in agile approach.

Phase 1: Course content preparation

This phase is considered complete when the plans for both courses are prepared, approved by co-founders, and entered into a learning management system. The content should include a comprehensive list of topics and dependencies between them, a suggested order of topics, practical cases, and a list of quizzes and assessments. Initial agreements with instructors and administrator must be achieved to progress to the next steps.

Phase 2: Launch of marketing campaigns

The goal of this phase is to attract potential students. It should start with some branding work, purchasing an internet domain, and setting up social media accounts. With these basic things in place, the next part would be to prepare UI/UX mockups of the landing page and further implementation, SEO configuration and website optimization, and development and printing of collaterals. This should be followed by the launch of social media marketing campaigns. In parallel, communication scripts should be confirmed with administrators who will then perform lead generation activities.

Phase 3: Program kick-off

Before the program can be kicked off, the school must finalize the recruitment of instructors and administrative staff, preparation of income-sharing agreement templates, and

establishment of administrative processes. This will also include preparation for interviews and negotiations with potential students. This phase is complete when the first student completes the trial period and signs the contract.

Phase 4: Graduation of cohort of 18

The educational process with the students needs to be thoroughly monitored. Students' performance should be regularly assessed, and feedback gathered from both students and instructors. Process optimization and resource allocation plans should be discussed.

Phase 5: Preparation of expansion plan

This phase is considered complete when the expansion plan is prepared and approved by the co-founders. This may include onboarding new instructors, analysis of alternative branch locations, development of an alumni network, securing partnerships with other IT companies, or development of additional course offerings.

RACI Matrix

By using a work breakdown structure as outlined above with five milestones and specific tasks to complete those milestones, we compile a list of all work items and use RACI matrix to define and clarify the roles and responsibilities of team members for these tasks, see Table 7 below. It includes the following roles: co-founders (COF), instructors (INS), administrator (ADM), SEO consultants (SEO), UI/UX designer (UI), developer (DEV) and legal adviser (LAW).

Table 7

RACI Matrix

Project Tasks	COF	INS	ADM	SEO	UI	DEV	LAW
Phase 1							
Recruit instructors	R, A		I				
Hire administrator	R, A	I					
Identify topic dependencies	R, A	C					
Draft Fullstack course	R, A	C	I				
Draft Power Platform course	R, A	C	I				
Configure courses in LMS	A	I	R				
Prepare practical cases	A	R	I				
Prepare assignments	A	R	I				
Phase 2							
Hire SEO specialist	R, A				I	I	
Hire UI/UX designer	R, A			I		I	
Hire developer	R, A			I	I		
Develop brand book	C	I	I		R, A		
Purchase internet domain	R, A	I	I	I	I	I	
Design landing page	A	I	I	C	R	C	
Implement landing page	A	I	I	C	C	R	
Optimize website for SEO	A	I	I	R	C	C	
Setup Google Analytics	A			R	I	R	
Develop SMM campaigns	A, C		R				
Phase 3							
Hire legal adviser	R, A						
Draft income-sharing contracts	C		I				R, A
Split content across instructors	R, A	C	I				
Prepare for interviews	R, A						
Generate leads	A		R				
Phase 4							
Perform teaching activities	A	R	I				
Monitor performance	A	R	I				
Prepare satisfaction surveys	A		R				
Optimize processes	R, A	I	I				
Organize test interviews	R, A	R	I				
Phase 5							
Analyze market	R, A						

Prepare expansion plan	R, A	I	I				

Plan Overview

With work breakdown structure in place and understanding of assignments of the work items, it is possible to estimate the duration of specific assignments and the duration of phases in general. This is represented in Table 8 below.

Table 8

Expected duration of phases

Phase	Expected Start	Expected End
Course content preparation	June 2024	July 2024
Launch of marketing campaigns	July 2024	August 2024
Program kick-off	August 2024	September 2024
Graduation of cohort of 18	September 2024	June 2025
Preparation of expansion plan	June 2025	December 2025

To ensure that financial results and growth metrics align with the project plan, we are going to establish and track specific key performance indicators (KPIs) to quantify and assess progress towards desired outcomes:

- **Website Visitors.** Track the number of unique individuals who visit our website using Google Analytics. The target is to reach 500 unique visitors by the end of August 2025.
- **Enrollment Numbers.** Monitor the total number of students who enroll in our program, regardless of whether they graduate, drop out, or are still in the process of learning. The goal is to have 24 students enrolled by the end of October 2024.
- **Student Satisfaction.** Measure the Net Promoter Score (NPS) for active students and graduates over the period from November 2024 to July 2025. The aim is to maintain an NPS of 85% or higher, assessed regularly through student surveys.

Risk Management

Risk Register

When it comes to risk management, the school's initial plan reflects a relatively high risk appetite, as it accounts for the costs associated with running a pilot program, even if the situation on the market is changed dramatically and the operations must be stopped. However, the school recognizes the value of proactively identifying, assessing, and mitigating risks to achieve more predictable outcomes. Thus, a risk register has been compiled (see Table 9) that outlines potential risk scenarios, along with their estimated impact and probability. For each identified risk, a corresponding treatment plan has been developed to minimize the likelihood of occurrence and/or reduce the potential impact.

To categorize risks by impact and probability, we would use the following scales. Risk impact is measured by effect on financial parameters such as discounted cash flows compared to base scenario: 1|Negligible – up to 5% decrease, 2|Minor – 5% to 10% decrease, 3|Moderate – 10% to 25% decrease, 4|Significant – 25% to 50% decrease, 5|Severe – 50% to 100% decrease. Similarly, risk probability is measured by estimating the chances of scenarios: 1|Very Low – under 2%, 2|Low – 2% to 15%, 3|Medium – 15% to 85%, 4|High – 85% to 98%, 5|Very High – above 98%.

Table 9

Risk register of technology school

Id	Risk	Impact	Probability	Treatment	Actions
1	Inability of instructor to continue teaching due to mobilization, relocation, serious injury or death	2	2	Mitigate	Make agreements with backup instructors
2	Significant decrease of interest in IT education due to AI, war or economic reasons	5	1	Accept	
3	Missing income-sharing payments from graduates who disappear or refuse to pay	3	3	Mitigate	Investments into good legal work, building personal relationship during program
4	Missing income-sharing payments from graduates who decide to quit IT or unable to continue working in IT	3	1	Mitigate	Post-employment support of graduates, development of alumni network
5	Legislature changes such as taxation system	3	2	Accept	
6	Temporary downtime of learning management software	1	4	Mitigate	Perform thorough testing of the system, use fault tolerance best practices
7	Low student enrollment numbers	5	1	Mitigate	Implement targeted marketing campaigns
8	High student attrition rate	3	3	Mitigate	Provide personalized support, use engagement via interactive learning
9	Courses become outdated too early due to rapidly evolving technologies and updated job market needs	4	2	Mitigate	Monitor job market needs and new technologies, tune courses on the fly
10	Intellectual property disputes	3	1	Mitigate	Conduct thorough IP research
11	Data security and privacy issues	2	1	Mitigate	Implement cybersecurity best practices
12	Reputational damage due to negative feedback from the students	4	1	Mitigate	Prioritize student satisfaction, maintain transparent communication
13	Inability of graduates to find jobs/internships due to market condition	5	3	Mitigate	Build partnerships with IT companies, provide career support, adapt courses
14	Competitors offering similar programs at lower costs	4	2	Mitigate	Increase brand awareness, differentiate school's offerings
15	Ineffective marketing strategies resulting in low brand awareness	3	2	Mitigate	Use agile methodology to iterate and improve strategies
16	Students' study duration estimates are too optimistic	4	2	Mitigate	Improve interview process, develop a tool to better estimate students' skills
17	Graduates' actual salary growth lags behind the expected growth	2	3	Mitigate	Post-employment communication with graduates, sharing job opportunities

18	Landing page development exceeds budget	1	2	Mitigate	Monitor the development
19	Instructors ask for rate reviews regularly	3	2	Mitigate	Agree in advance on the proposed rate and its change policy, have backup instructors
20	Electricity and internet issues because of war	1	3	Transfer	Enforce responsibility of students to have backup connectivity channels

Risk Management Procedures

Given the team's current size, the administrator will often assume the role of risk controller, while the co-founders will maintain the position of risk owners. Risk management procedures will be designed to be as straightforward as possible, focusing on specific metrics for each identified risk in the register. These procedures will typically involve the administrator monitoring key metrics and alerting the co-founders about any risk signals. The co-founders will then take appropriate action to address the identified risks.

Examples of such risk signals include instances of learning management software downtime, the time taken for each graduate to secure employment, and the emergence of new offerings from competitors with similar terms. In response to these events, the co-founders, as risk owners, will take the necessary steps to mitigate the risks. This may involve coordinating with the support team to identify and resolve the causes of software downtime, arranging additional sessions with graduates to analyze the reasons for unsuccessful interviews, and developing strategies to counter new offerings from competitors.

At this stage, the risk management philosophy prioritizes simplicity to maintain agility and minimize bureaucracy. By keeping procedures streamlined and focused on essential metrics,

the team can respond quickly and effectively to emerging risks while avoiding unnecessary complexity that could hinder their ability to adapt and make timely decisions.

Chapter 5: Lessons Learned and Conclusions

The IT industry in Ukraine has faced significant challenges due to the Russian invasion, with exports falling in 2023 after a period of inertial growth in 2022. The war has impacted the industry's competitiveness, making it harder for junior specialists to find work and leading to a decline in exports from $7.35 billion in 2022 to $6.73 billion in 2023. Despite these difficulties, Ukraine's EU candidate status and potential NATO integration present opportunities for future growth and investment in the sector. Base-case scenario suggests the return to growth in the coming years, which is supported by the continued interest in IT education today.

The rise of generative AI tools poses a significant risk to the technology education industry. It is expected to bring about substantial changes in the software development landscape, potentially transforming job roles but also increasing productivity. IT education providers must monitor AI developments and integrate new solutions in the learning process.

While Ukraine has strong foundations in science, engineering, and mathematics that have contributed to the growth of its IT industry, traditional universities have struggled to keep pace with the high demand for skilled professionals, and only half of the graduates manage to land jobs in IT sector. This has led to the emergence of private IT education institutions and government programs aimed at bridging the skills gap. However, the quality of IT education is a serious problem because quite often the goals of the technology schools and students are not aligned.

This capstone project proposes the launch of a software development academy targeting the "Switchers" segment – individuals seeking to transition into the IT industry. The academy will

offer personalized training programs, including .NET Fullstack Engineer and Power Platform Developer courses, with an income-sharing model to align incentives and mitigate financial risks for students.

The academy's competitive landscape analysis reveals a maturing IT education market in Ukraine, with various players catering to different segments and offering a range of services. To differentiate itself, the academy will focus on flexibility, a success guarantee, and addressing students' fear of failure.

The marketing mix will emphasize personalized mentorship, a unique learning path built on existing skills, and a hybrid learning format. The income-sharing pricing model, with students paying a percentage of their future income only after securing employment, is a key selling point. Even though this model incentivizes a school to deliver high-quality education and support, however it also requires substantial investments, as returns may not be realized for several years after a student’s graduation.

A lean organizational structure, experienced instructors, and a strong learning culture will be critical to the academy's success. Leveraging AI-enabled tools and learning management software will enhance the educational experience and outcomes. Financial projections indicate the potential for profitability and growth, with an expected NPV of $49,530 and IRR of 68% for the pilot project. However, having lean organizational structure requires effective resource allocation and strategic trade-offs.

The academy will allocate resources strategically, focusing on human capital, synergies with the parent company, and continuous improvement of its educational content and technology. The implementation roadmap outlines five key phases, from course content preparation to expansion planning, with clear roles and responsibilities defined in a RACI matrix.

Risk management is another important aspect, with a comprehensive risk register identifying potential challenges and corresponding mitigation strategies. Key risks include the impact of the war on IT demand, competition from other educational providers, and the evolving technology landscape.

The academy's success will be measured through key performance indicators, including website visitors, enrollment numbers, student satisfaction, and post-graduation employment rates. Agile methodologies will be employed to iterate and improve marketing strategies, course content, and overall operations.

In the long term, the academy aims to expand its offerings, partnerships, and geographic reach, while maintaining a strong focus on student outcomes and industry alignment. By leveraging its unique strengths and adapting to the changing landscape, the academy strives to become a leading provider of IT education in Ukraine and beyond.

In conclusion, the proposed software development academy addresses a need of students to guarantee the successful result of training which ends in job landing. Thus, the school will contribute to the development of IT education in Ukraine, leveraging industry expertise, innovative learning approaches, and a student-centric philosophy. By equipping aspiring professionals with in-demand skills and fostering a culture of lifelong learning, the academy aims to contribute to the growth, resilience, and global competitiveness of Ukraine's IT industry.

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