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The strategy of increasing the competitiveness of Ukrainian IT companies on the world
market

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Thesis has been approved for the defence before the Examinations Commission

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3

ACADEMIC SUPERVISOR'S REVIEW OF MASTER THESIS

by the Student at the Faculty of International Economics and Management
MBA program "Global Business"

Ivan Voitko
(Name, Surname)

*The strategy of increasing the competitiveness of Ukrainian IT
companies on the world market*

1. Evidence of learning in accordance with the objectives of the assignments (0-5 points) *5 points*
2. Depth of critical analysis (0-10 points) *8 points*
3. Effectiveness of argumentation/analysis (0-10 points) *8 points*
4. Accurate and coherent use of quantitative tools and language (0-20 points) *19 points*
5. Compliance with master thesis written requirements (0-5 points) *5 points*
6. Compliance with writing master thesis's schedule (0-5 points) *5 points*
7. Attendance (0-5 points) *5 points*
8. Published research work/Thesis (0-10 points) *9 points*
9. Positive aspects of the thesis: One can see some elements of scientific novelty, interesting author's opinions in a form of generalizations and criticisms. All conclusions and recommendations are based on a wide range of general and special methods of economic analysis, on critical consideration of theoretical approaches and the results of processing a large amount of statistical data. The work contains a sufficient graphical and tabular support, indicating a good knowledge of theoretical material and the ability to use it effectively in a process of practical issues solution.
10. Negative aspects of the paper: The author could be more specific in a chapter 3, describing optimization and budgeting strategies
11. Total Supervisor's Grade of Master Thesis: The Thesis meets basic requirements and can be recommended for the defense at Attestation Examination Commission. The total grade is **64 points**

Academic Supervisor *Professor, doctor of economic sciences*

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1-st of December 2023

External Review of Master Thesis

Student's name

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_____The strategy of increasing the competitiveness of Ukrainian IT companies on the world market_____

IT business development is one of the significant competitive advantages of the Ukrainian economy on the global market. This is particularly relevant for countries like Ukraine, where IT represents not only a significant economic sector but also a potential lever for national advancement on the global stage. Ukraine's IT industry, characterized by a robust pool of talent and a growing reputation for innovation, finds itself at a pivotal juncture. Ensuring competitive advantages in modern circumstances is the primary task of the post-war recovery of Ukraine and the formation of potential GDP.

The advantage of the work is the presence of main directions and financial features of increasing competitiveness on the international IT market. The author used a significant number of scientific research methods in the work. It is worth noting that the work compares the Ukrainian IT sector with global development standards. The author attempted to find opportunities to improve the development of this type of economic activity.

The work would benefit significantly if there were calculations of the effectiveness of increasing the competitive positions of the IT business and the impact on the macroeconomic indicators of the national economy.

In general, the work meets the requirements for qualifying master's theses, deserves a positive assessment and can be admitted to defense before the examination board.

Reviewer

_____Doctor of Economics, Professor_____

_____Tsymbol Ludmila_____

(Position)

(Signature)

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_____Kyiv National Economic University_____

(Place of Work)

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Introduction

In the current era of digital transformation and globalization, the information technology sector stands as a cornerstone of economic progress and innovation. This is particularly relevant for countries like Ukraine, where IT represents not only a significant economic sector but also a potential lever for national advancement on the global stage. Ukraine's IT industry, characterized by a robust pool of talent and a growing reputation for innovation, finds itself at a pivotal juncture. The global IT market, though replete with opportunities, is marked by fierce competition, rapid technological advancements, and ever-evolving consumer demands. For Ukrainian IT companies to thrive and expand their global footprint, it is imperative to not only understand these dynamics but also to adeptly navigate and strategically position themselves within this competitive landscape.

Ukraine's IT sector, known for its highly skilled workforce, competitive cost structures, and a growing reputation for quality, has the potential to become a leading player on the world stage. However, achieving this requires navigating a global market characterized by intense competition, rapid technological change, and complex customer demands. Enhancing competitiveness involves a multifaceted approach, including investing in innovation, expanding market reach, and building robust international partnerships. One of the primary reasons to focus on this goal is the significant economic benefits it can bring. The IT industry is a high-value sector, and increasing its global market share can lead to substantial revenue growth, job creation, and a stronger economy. Furthermore, a competitive IT sector can attract foreign investments, fostering an environment of technological advancement and entrepreneurship.

Additionally, enhancing the competitiveness of Ukrainian IT companies can help diversify the country's economy. Historically reliant on industries like agriculture and manufacturing, Ukraine stands to benefit from strengthening a sector that is resilient to global economic fluctuations and poised for future growth. This diversification is crucial for the country's long-term economic stability and development. Moreover, a strong IT sector can serve as a catalyst for broader technological advancement within Ukraine. It can drive the adoption of cutting-edge technologies across various industries, boosting productivity and innovation. This, in turn, can enhance the overall competitiveness of the Ukrainian economy. Increasing the global presence of Ukrainian IT companies can enhance the country's brand and reputation on the world stage. It can shift perceptions, showcasing Ukraine not just as a resource-based economy but as a hub of technological innovation and digital expertise.

Purpose and objectives of the study. The primary aim of this research is to provide a comprehensive theoretical and methodological framework for enhancing the competitiveness of Ukrainian IT producers on the global market. The study seeks to dissect and understand the multifaceted dynamics of the global IT market and identify strategic avenues through which Ukrainian IT companies can assert their presence and increase their market share internationally.

To achieve this overarching goal, the study is structured around several key objectives:

- Analyze the competitive landscape: Understand the structure and dynamics of the global IT market, focusing on trends, challenges, and opportunities.

- Identify competitiveness parameters: Ascertain the main parameters that define competitiveness in the IT market and how they apply to Ukrainian producers.
- Strategize market entry: Develop optimal strategies for Ukrainian IT companies to enter and establish themselves in the global IT market.
- Examine internationalization priorities: Assess the priorities and strategies for the internationalization of the Ukrainian IT industry, including the specifics of transnationalization.
- Evaluate structural and financial aspects: Investigate the main directions and financial features relevant to increasing competitiveness, including the structural and financial optimization of the IT sector in Ukraine and budgeting strategies for competitiveness enhancement.

Research methods. To address these objectives and ensure the robustness of the research, a blend of general scientific and specialized research methods will be employed. These methods include:

- Systematization and Generalization: For conceptualizing the global IT market and the positioning of Ukrainian IT companies within it.
- Analytical and Synthetic Approaches: Used in analyzing market trends, competitiveness factors, and strategic planning.
- Comparative Analysis: To compare the Ukrainian IT sector with global standards and identify areas of improvement.
- Case Studies and Empirical Research: Investigating successful models of IT competitiveness and applying these insights to the Ukrainian context.
- Econometric Modeling: For financial analysis and budgeting strategies related to enhancing competitiveness.

Information and Factual Basis. The study will be grounded in a comprehensive range of informational sources to ensure depth and accuracy:

- Monographic Studies and Scholarly Publications: On global IT market trends and competitiveness strategies.
- Data from International Organizations: Such as UNESCO, WIPO, World Bank, UNCTAD, OECD, and the EU, providing global market insights.
- National Statistics and Reports: Focusing on the Ukrainian IT industry and its current global positioning.
- Internet Resources: For up-to-date information on market trends, technological advancements, and global competition.
- Personal Empirical Research: Conducted by the author, including interviews, surveys, and direct observations within the Ukrainian IT sector.

Through this comprehensive approach, the study aims to contribute significantly to the understanding of global IT market dynamics and provide actionable strategies for Ukrainian IT companies seeking to enhance their competitiveness on the world stage.

Chapter 1 Competitive profile of modern IT market development

1.1. Structure and the dynamics of development of the global IT market

Information technology (IT) in our world has become not only an important component of modern life, but also an engine and catalyst of global changes in many industries. The global IT market is the stage where the fastest and most intensive changes take place.

In the year 2022, the global information technology (IT) market had a size of approximately \$8,179.48 billion [1]. However, by 2023, it expanded to about \$8,852.41 billion, showing a significant growth rate of 8.2% over the year [2]. But, unfortunately, the Russia-Ukraine war had a noticeable impact on the global economic recovery from the COVID-19 pandemic, particularly in the

short term [3]. This ongoing conflict resulted in economic sanctions being imposed on several countries, a notable increase in commodity prices, and disruptions in supply chains. These consequences have, in turn, led to rising inflation in the prices of various goods and services, affecting numerous markets worldwide.

We may also analyze revenue of IT services provided worldwide to have some understanding of market dynamics.

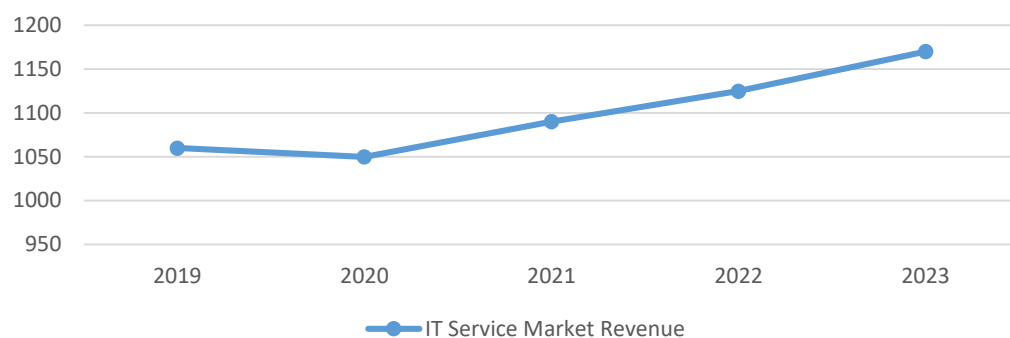


Figure 1.1 - IT services revenue 2019-2023, bln USD

Source: 2023 Business Growth Report

Looking ahead, despite these challenges, the information technology market is poised for further growth. It's projected that by 2027, the IT market will reach an impressive size of approximately \$11,995.97 billion, with a compound annual growth rate (CAGR) of 7.9% [4, 5]. This suggests that, while there are immediate hurdles to overcome, the IT sector remains resilient and promising for the future."

The IT software market has witnessed substantial growth in recent years, marked by a rising trajectory fueled by increasing consumer demand and technological advancements. This sector has seen a surge in the availability of diverse product offerings, addressing a wide range of needs and preferences as

industries embrace innovation. Favorable economic conditions and strategic partnerships have further facilitated global expansion [6]. Looking ahead, as cutting-edge technologies are expected to integrate and market dynamics continue to evolve, the outlook for the future remains optimistic [7, 8].

The IT market is considered in different segments, each of which has its own sub-segments, characteristics and features.

Table 1.1 Segments and sub-segments of global IT market

Segment	Sub-segment	Description
Hardware	Computer Manufacturing	The production and assembly of computing devices, including desktop computers, laptops, and workstations.
	Server Manufacturing	The manufacturing of hardware used for data storage, hosting websites, and running applications, ranging from small to data center servers.
	Mobile Device Manufacturing	The development and assembly of smartphones, tablets, and wearable devices, including hardware components like processors and displays.
Software	Operating System Development	The creation and maintenance of core software managing hardware resources and providing a platform for other applications.
	Business Software Development	The design and development of software for business functions such as CRM, ERP, and accounting.
	Game Development	The process of designing and creating video games for various platforms.
Internet Services and Cloud Technologies	Web Development	The design, coding, and maintenance of websites and web applications, encompassing both front-end

		and back-end development.
	Cloud Computing	On-demand access to computing resources (servers, storage, software) over the internet, providing scalability and cost-efficiency.
	Cloud Storage	Secure data storage and backup services in remote data centers accessible via the internet.
	Internet of Things (IoT) Services	Connectivity and data management for IoT devices, facilitating data collection, monitoring, and control.
Telecommunications Services	Internet Service Providers (ISPs)	Companies offering internet connectivity through various types of connections (e.g., broadband, DSL, fiber-optic).
	Mobile Communications Providers	Carriers providing wireless communication services, including voice, data, and text messaging, via cellular networks.
	Service Providers (VoIP, IPTV, etc.)	Entities delivering services like Voice over IP (VoIP) for internet-based phone services and Internet Protocol Television (IPTV) for television content over the internet.

Source: Systematized by the author

These subservices collectively form the foundation of the technology industry, enabling the development and operation of modern digital infrastructure [9].

The geographic structure of the world information technology (IT) market is an important component, as it determines the geographical features of production, development and use of IT products and services. Let's take a closer look at the distribution of the global IT market by geographic region.

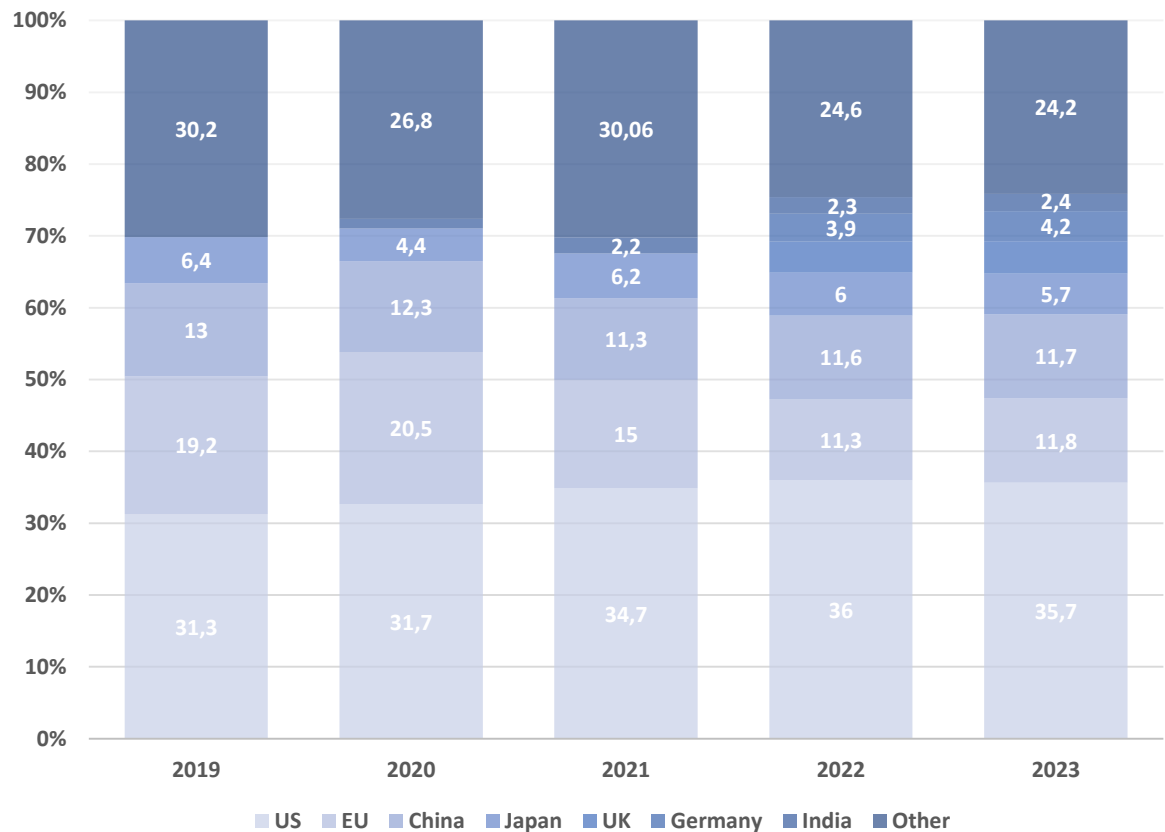


Figure 1.2 Global market share of the information and communication technology (ICT) market from 2019 to 2023, by country

Source: Global ICT Market Development Report 2023

The analysis of global ICT market shares from 2019 to 2023 reveals a complex landscape marked by both stability and change [10]. The United States remains the dominant player in the global ICT market throughout the five-year period. Starting at 31.3% market share in 2019, it consistently grew to 35.7% in 2023, indicating continued strength in the sector, while the European Union's influence wanes [11]. China maintains a strong position, and India is gradually emerging as a significant contributor increasing its market share from zero in 2019 to 2.4% in 2023. This suggests the emergence of India as a potential player in the global ICT industry [12].

In 2020, the global ICT market experienced disruptions due to the COVID-19 pandemic, which resulted in varying impacts on individual country shares. Notably, the EU and India saw changes in their market shares during this year [13].

The Information Technology industry is a vast and dynamic sector characterized by rapid advancements and fierce competition. Key players in the IT industry are organizations that have demonstrated significant influence, innovation, and market leadership [15].

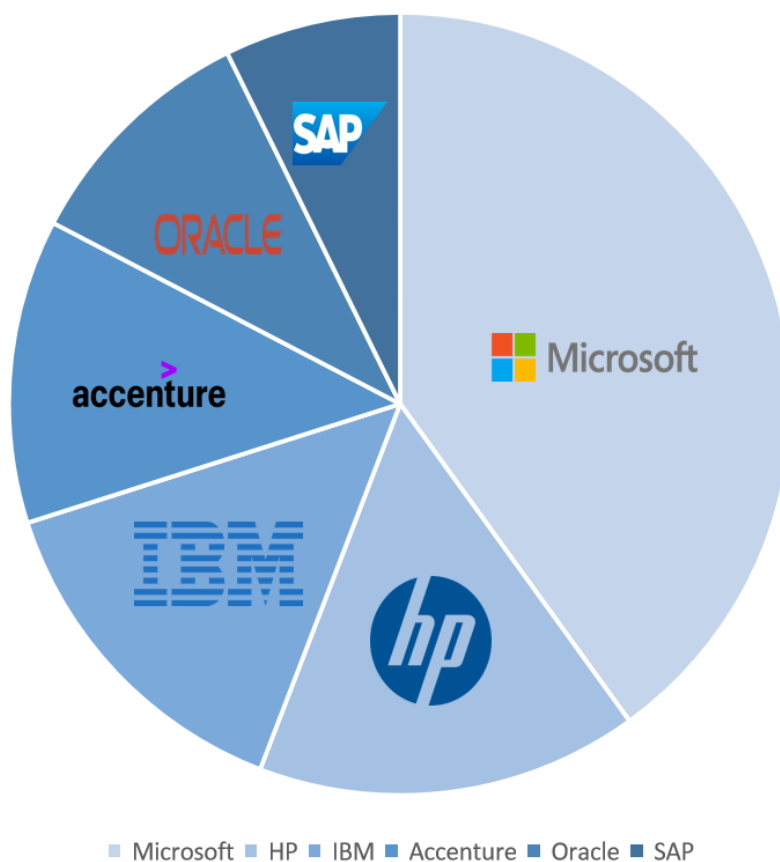


Figure 1.3 Leading information technology companies worldwide in 2023 by revenue, bln USD

Source: Companies financial data, systematized by author

In 2023, the IT services market continues to demonstrate remarkable growth, with several major players contributing significantly to its expansion.

Microsoft stands out as the industry leader in terms of revenue, generating an impressive 161 billion U.S. dollars. This makes Microsoft the largest IT services company worldwide, highlighting its substantial influence in the sector [16].

The IT services market, a crucial sub-sector within the broader information technology industry, consistently attracts substantial investments, with annual revenues reaching the staggering mark of 1.42 trillion U.S. dollars in 2023. This remarkable growth trajectory began with the market crossing the one trillion dollar threshold in 2019. This trend is fueled by the ongoing digitalization of various industries and the continuous evolution of technology [17,18]. Businesses across virtually every sector increasingly rely on IT services to stay competitive and meet the demands of the modern digital landscape, contributing to the sustained growth in market spending.

While Microsoft leads the way with its substantial revenue of 161 billion U.S. dollars, other major players in the IT services market also command significant shares. IBM, for instance, boasts revenues exceeding 57 billion U.S. dollars, solidifying its position as a major contender. Following closely behind are Accenture and Oracle, with revenues of 50.53 billion U.S. dollars and 40.47 billion U.S. dollars, respectively. These companies, along with HP and SAP, play pivotal roles in shaping the IT services landscape, providing a diverse range of services and solutions to meet the evolving needs of businesses in the digital age [19].

As businesses worldwide continue to embrace digital transformation and seek innovative IT solutions, the IT services market remains a thriving sector, poised for further growth in the years ahead. The presence of leading companies like Microsoft, IBM, Accenture, Oracle, HP, and SAP underscores the significance of IT services in driving the global economy and technological advancement.

1.2. Main parameters of competitiveness on the IT market

The Information Technology market is a fiercely competitive arena, marked by rapid technological advancements and constant innovation. In this dynamic landscape, understanding the key parameters of competitiveness is crucial for companies striving to maintain a leading edge [20]. This work delves into the primary factors that define competitiveness in the IT market, shedding light on the vital components that drive success and sustainability.

Having analyzed IT market and its complex structure I can highlight main criterias according to which it can be analyzed. They are following:

Table 1.2 IT industry main competitive indicators

Innovation and Technological Expertise	Innovation Leadership
	Technical Proficiency
Product and Service Quality	Reliability and Performance
	Product/Service Diversification
	Customer Support and Service
Pricing Strategies and Affordability	Competitive Pricing
	Flexible Pricing Models
Market Adaptability and Flexibility	Agility and Adaptability
	Scale Effect
	Market Diversification
	Market Coverage
	Global Reach
Cybersecurity and Data Protection	Data Security
	Compliance and Regulations
Collaboration and Partnerships	Strategic Alliances

	Synergistic Effect
	Ecosystem Engagement

Source: Systematized by author

In the ever-changing landscape of technology, staying ahead requires constant innovation and the ability to introduce groundbreaking solutions. Being at the forefront of IT innovation provides companies with a significant competitive edge [21]. This constant pursuit of new technologies not only keeps companies relevant but also allows them to develop unique products and services tailored to the ever-evolving market demands [22].

Speaking of innovation, the Most Innovative Companies ranking by Boston Consulting Group (BCG) offers a fascinating glimpse into the tech world's frontrunners. This ranking, based on a comprehensive survey of over 1,000 innovation executives evaluates companies on various fronts. These dimensions include global mindshare, industry peer view, industry disruption, and value creation, providing a holistic view of a company's innovative prowess.

Table 1.3 Top 10 most innovative companies, 2023

Rank	Company	Industry	Country
1	Apple	Technology	USA
2	Tesla	Transportation & energy	USA
3	Amazon	Technology	USA
4	Alphabet	Technology	USA
5	Microsoft	Technology	USA
6	Moderna	Healthcare	USA
7	Samsung	Technology	South Korea
8	Huawei	Technology	China
9	BYD Company	Transportation & energy	China
10	Siemens	Technology	Siemens

Source: Boston Consulting Group

The list of the top 10 most innovative companies in 2023 showcases a diverse range of industries and global representation. Apple, Tesla, Amazon, and Alphabet lead the pack, with a strong presence in the technology sector [23]. Moderna stands out in healthcare due to its groundbreaking work in mRNA technology, while Samsung, Huawei, and Siemens contribute significantly to technological advancements, especially in electronics and manufacturing. BYD Company and Siemens, operating in transportation and energy, demonstrate their commitment to sustainable solutions [24].

In economic terms, innovation is the cornerstone of progress. Innovative companies drive economic growth by creating new markets, jobs, and products. They enhance productivity, allowing for the production of more goods and services with fewer resources. Innovation fosters competitiveness, enabling companies to stay ahead of the curve and capture market share [25].

Another criterion is technical proficiency. Technical proficiency is crucial in the IT market because it ensures that professionals possess the necessary skills and expertise to design, develop, and implement advanced technologies and solutions. In a rapidly evolving industry, staying up-to-date with the latest programming languages, tools, and frameworks is essential [26]. Technical proficiency enables IT professionals to create innovative and efficient solutions, enhance cybersecurity measures, and troubleshoot complex issues effectively. It not only ensures the quality of IT products and services but also enhances a company's competitiveness by enabling them to adapt swiftly to emerging technologies and changing market demands.

Programming languages are pivotal in the IT industry, serving as the foundation for software development, applications, and technological innovations. They enable developers to create functional and efficient programs, making them fundamental in the digital landscape.

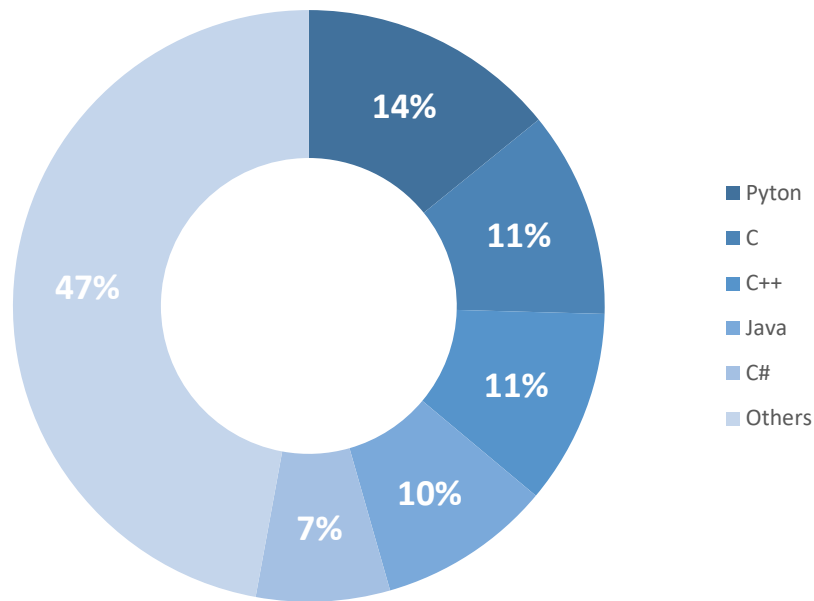


Figure 1.4 Top 5 programming languages in 2023

Source: TIOBE Programming Community index

The TIOBE Programming Community index is a valuable tool for assessing the popularity of programming languages. Updated monthly, this index utilizes data from skilled engineers worldwide, courses, third-party vendors, and popular search engines. It provides insights into the industry's preferences, guiding developers, businesses, and educators on the languages most widely used and sought after in the current market[28].

In my comprehensive analysis of global job platforms, including industry giants like LinkedIn and Glassdoor, I focused on IT-related vacancies. The findings consistently revealed a strong demand for specific technical skills. Among the most frequently requested skills across various job listings were Artificial Intelligence, Cybersecurity, Cloud Computing, Software Engineering, Software Development, Project Management, UI/UX Design, Data Analytics, Data Science, and Programming [29].

These skills are not only indicative of the current technological landscape but also emphasize the evolving needs of businesses worldwide. Proficiency in these areas not only enhances an individual's marketability but also reflects the ongoing digital transformation occurring across diverse sectors. Professionals equipped with these technical competencies are well-positioned to excel in the ever-changing and competitive IT job market.

Relying on a single product or service can be risky because market demand, technological advancements, or regulatory environments can change rapidly. Diversifying the portfolio can spread risk across different offerings, ensuring that a decline in one area can be balanced by stability or growth in another. For example, IBM transitioned from primarily hardware to a diverse range of software and services, which now drive the majority of their revenue, helping them navigate the declining demand for traditional hardware [30]. Different products and services can appeal to different customer segments or geographical markets. Companies can leverage diversification to tap into new customer bases, reducing dependency on a particular market segment. Amazon Web Services (AWS), for instance, appeals to a wide range of clients by offering more than just cloud storage; they provide computing power, machine learning, and database services among others, catering to diverse client needs from startups to large enterprises [31].

Table 1.4 Microsoft product portfolio by categories

Category	Products
Operating Systems	● Windows 10 ● Windows 11 ● Windows Server
Cloud Services	● Microsoft Azure ● OneDrive ● Azure DevOps

	● Azure Stack
Productivity Software	● Microsoft Office Suite (Word, Excel, PowerPoint, Outlook, etc.) ● Microsoft Teams ● Microsoft OneNote ● Microsoft SharePoint ● Microsoft Exchange ● Microsoft Planner
Business Solutions	● Microsoft Dynamics 365 ● Power BI ● Microsoft PowerApps ● Microsoft Flow ● Microsoft Forms
Development Tools	● Visual Studio ● Visual Studio Code ● .NET Framework ● Xamarin ● SQL Server ● GitHub (owned by Microsoft)
Artificial Intelligence	● Azure AI ● Microsoft Bot Framework ● Cognitive Services
Gaming	● Xbox consoles (Xbox Series X S, Xbox One) ● Xbox Game Pass ● Microsoft Flight Simulator ● Minecraft ● Halo series
Hardware	● Surface devices (Surface Pro tablets, Surface Book laptops, Surface Studio desktops, Surface Go, etc.) ● Microsoft accessories ● HoloLens
Search Engine	● Bing
Education	● Microsoft Education ● Microsoft Learn ● Minecraft: Education Edition
Security and Compliance	● Microsoft Defender ● Azure Security Center ● Microsoft Compliance Manager

Web Browsers	● Microsoft Edge
Mobile Applications	● Microsoft Launcher for Android ● Edge for mobile ● Outlook for mobile ● Various Office apps for mobile
Networking	● Azure ExpressRoute ● Virtual Network
Mixed Reality	● Windows Mixed Reality ● Dynamics 365 Remote Assist

Source: Microsoft, systematized by author

Diversification can establish multiple revenue streams, ensuring that the company has a steady income even if one product category underperforms. Microsoft demonstrates this with its array of products and services including its Windows operating system, Office software suite, Azure cloud services, LinkedIn, and Xbox gaming consoles, among others [32, 33].

In the fast-changing tech world, it's crucial to have products and services that work well and can be trusted. Making sure things are reliable and efficient is super important. This affects how successful a product is. It involves dealing with many complicated factors, aiming to meet or beat the industry standards [34].

In any advanced product or service, how quickly it fetches data is the key factor in judging its performance. If it takes too long, users can have a bad experience. That's why making sure data fetch time is optimized is crucial. This can be done by improving the product's code, reducing delays in network connections, and storing often-used data for quick access. These steps not only speed up data fetching but also enhance the product's overall performance, giving users a more valuable and efficient experience [35].

For businesses providing services involving data, it's essential to protect sensitive information [36]. This is done by using encryption methods and regularly checking for security issues. Especially in the current discussions around AI and big tech, tech providers need to be aware of potential risks associated with their offerings [38].

Microservices, a method of breaking complex systems into smaller parts, is a powerful approach. It makes products easier to manage, ensuring they are strong, adaptable, and can respond quickly to changes in the market [39]. Developers can add or change features without altering the basic data structure. While microservices are crucial for creating reliable and high-performing products, it's just as important to proactively address customer concerns.

Having proactive customer support available 24/7 is vital for a product's reputation [40]. By closely collaborating with a team of engineers in real-time, issues can be identified and resolved swiftly. Combining the reliability of microservices with a proactive, self-healing system allows organizations to create an experience that not only meets but exceeds consumer expectations.

Competitive pricing is a critical strategy in the IT market, largely due to the industry's dynamic nature, rapid innovation, and the relatively low barriers to entry in certain sectors. This strategy involves setting prices based on the prices of similar products or services offered by competitors [41]. It's a common approach in markets where products and services are relatively standard, but it also plays a significant role in markets driven by innovation and differentiation, like the IT industry.

The IT industry is characterized by a high level of competition with numerous players, from tech giants to startups, often offering similar services or products. This environment makes competitive pricing crucial as businesses must ensure their pricing strategies are in line with what customers are willing to pay, while also considering what competitors are charging [42, 43]. Certain

segments of the IT market are highly price-sensitive. For example, in cloud services, where offerings such as storage or computing power can be similar across providers, price can be a significant differentiator for customers. Companies might engage in price wars to attract customers, highlighting the need for competitive pricing strategies to maintain market share.

For new entrants in the IT market or existing players launching new products, competitive pricing can be a strategy for market penetration. Offering lower prices compared to competitors, or adopting a freemium model where the basic version is free and premium features are paid, can attract initial users. Companies like Zoom and Slack used versions of this strategy effectively to expand their user base [44].

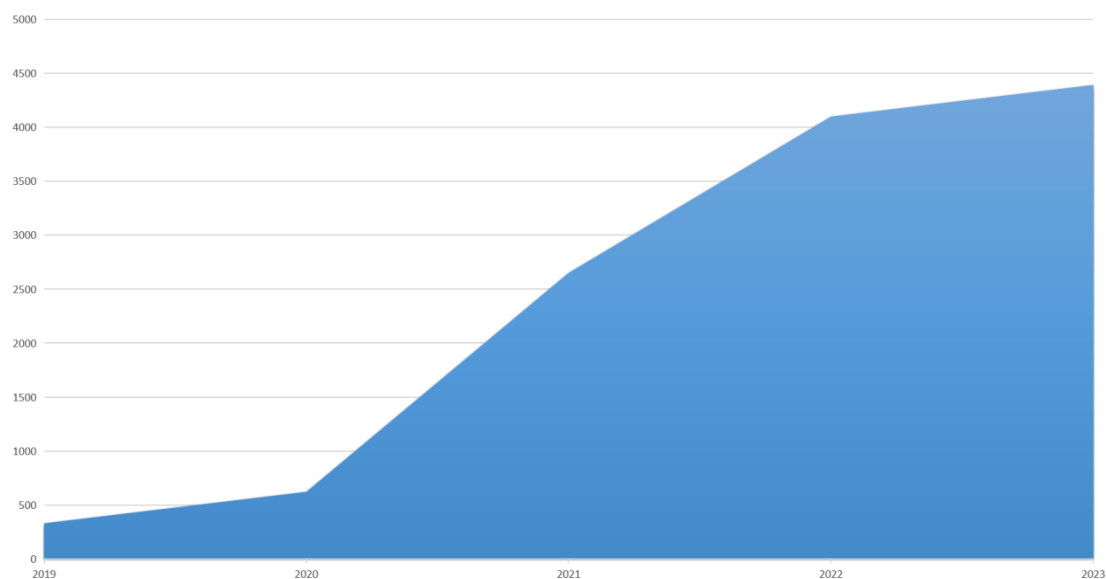


Figure 1.5 Zoom Video Communication's revenue worldwide from fiscal year 2019 to 2023, mln USD

Source: ZOOM financial data, systematized by author

The IT industry, particularly in areas like e-commerce and online services, often employs dynamic pricing strategies. Prices can change in real-time based on various factors such as demand, user behavior, or competitor actions. This

requires sophisticated algorithms and data analysis, reflecting the tech-driven nature of the industry.

One of the sectors within the IT industry where dynamic pricing is prevalent is cloud computing services. For example, Amazon Web Services (AWS), one of the leading cloud service providers, utilizes a form of dynamic pricing called "spot instances" [43]

Spot instances allow customers to purchase unused computing capacities at steep discounts compared to regular prices. The availability and price of spot instances fluctuate based on supply and demand for the service. When demand for services is low, AWS might have significant unused capacity and will offer spot instances at a lower price. Conversely, when demand is high, fewer spot instances may be available, and the prices may increase. This model benefits AWS by generating revenue from unused capacity while offering customers cost savings and the flexibility to scale computing resources. However, it requires customers to be flexible, as AWS can reclaim these spot instances if the capacity is needed for other purposes.

In the IT market, agility and adaptability are paramount. Agility refers to the ability to respond quickly to changing demands and incorporate feedback promptly. It allows companies to pivot strategies, adopt new technologies, and adjust to market shifts rapidly. Adaptability, on the other hand, is the capacity to evolve and thrive in diverse environments [46]. In the ever-changing tech landscape, businesses must be adaptable to emerging trends and consumer needs. Firms that are agile and adaptable can stay ahead of the competition, embrace innovations, and navigate uncertainties effectively, ensuring their long-term success in the dynamic IT market.

The COVID-19 crisis has underscored the critical need for adaptability and flexibility in the IT industry. The pandemic forced numerous companies to swiftly transition to remote work setups due to health concerns. This sudden

shift disrupted the global supply chain, impacting companies like Apple Inc., which faced a 10% drop in shares due to the unavailability of iPhones caused by the lockdown in China, the primary supplier of their parts [47].

However, amid these challenges, new opportunities emerged in the IT sector. The demand for 5G technology soared, enhancing remote connectivity and interactions. Organizations quickly adapted, making 5G technology a priority to support remote work effectively [48]. Additionally, telehealth services experienced significant growth during the crisis. The development of applications enabled remote diagnosis, treatment, and medical supervision, proving invaluable for patients in self-quarantine who required medical assistance.

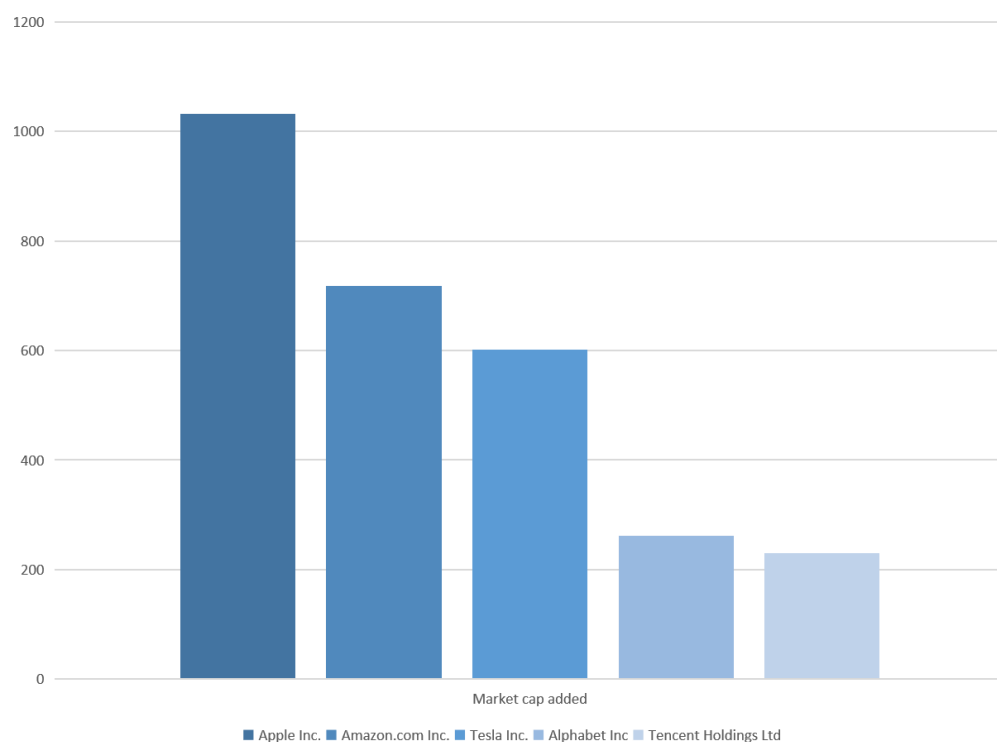


Figure 1.6 Top 5 companies benefited the most during COVID19, by market cap added

Source: Yahoo Finance

We can see how the companies who were able to adapt fast benefited even during crisis. Technology played a pivotal role in this adaptation, enabling remote work, online services, and digital solutions. For IT companies, staying adaptable ensures they can respond promptly to evolving market demands, adopt emerging technologies, and capitalize on new opportunities [49]. For large corporations, implementing IT technologies is essential for maintaining agility and resilience, enabling them to navigate uncertainties and thrive in dynamic environments. This crisis highlighted the importance of adaptability for IT companies. Those capable of swiftly pivoting their strategies, embracing emerging technologies like 5G, and developing applications to address urgent needs demonstrated resilience. Staying flexible allowed these companies to not only navigate the challenges posed by the pandemic but also identify and capitalize on new avenues for growth and innovation.

Economies of scale, often termed as the "scale effect," is a powerful competitive lever in the IT sector. When a company increases its production or services, the per-unit cost typically drops, creating a range of advantages. One of the immediate benefits is cost efficiency. The larger the company, the better it can distribute its fixed costs. The IT industry, with its substantial upfront costs in infrastructure and R&D, exemplifies this. Take, for instance, the development of the Windows operating system by Microsoft [50, 51]. The initial creation and refinement required a significant financial outlay. Yet, as millions of users worldwide adopted Windows, the per-user cost of that initial investment plummeted, permitting Microsoft to potentially offer it at a competitive price while maintaining profitability.

This scale-induced cost efficiency enables companies to price their offerings competitively. Giants like Microsoft or Amazon, backed by their extensive infrastructures and vast customer bases, can out-price smaller competitors, making market entry challenging for the latter. In turn, this scale supports more extensive R&D investments. Larger companies can channel more

resources into innovation, ensuring they remain at the forefront of technology. Google, with its vast resources, invests billions annually into various futuristic projects, an endeavor beyond the reach of smaller firms [52].

Furthermore, scale establishes a formidable barrier for new entrants. Consider the cloud market. Amazon Web Services leverages its scale to offer diverse services globally at prices hard for newcomers to match. Beyond pricing and services, scale also boosts brand recognition and trust—a critical asset in the IT industry. A brand widely adopted exudes reliability, drawing more customers in a reinforcing cycle. Microsoft's Windows is a testament to this, as its widespread use has cemented its place in the global market, fostering trust and promoting further adoption.

The IT industry is characterized by rapid innovation, short product lifecycles, and a globalized marketplace. Having wide market coverage ensures that a company's products or services are accessible and available to a vast number of potential customers across diverse geographies and segments [53]. This breadth of reach can significantly enhance the company's brand reputation, revenue potential, and stability in the face of localized market downturns or competitive pressures.

For instance, consider the rise of cloud computing giants like Amazon Web Services (AWS), Microsoft Azure, and Google Cloud. These companies haven't just offered innovative solutions; they've also expanded their data centers across continents, ensuring that clients anywhere in the world can access their services with low latency. By doing so, they not only address the technical needs of their clients but also comply with data sovereignty regulations in various nations, thus serving dual purposes [50]. As a result, they capture a broad spectrum of the market, from startups in Asia, major corporations in Europe, to governmental agencies in North America. If AWS, for example, had limited its services to the

U.S. alone, it would have missed out on significant revenue streams and faced stronger competition from local providers in other regions [56].

Moreover, comprehensive market coverage in IT also allows companies to gather diverse data, which can lead to insights about regional needs, preferences, and challenges. Such insights can guide product development, ensuring that offerings are tailored to meet specific regional requirements, further solidifying a company's competitive edge.

Global reach is vital for IT companies economically. It expands markets, reducing reliance on single economies and enhancing stability. It brings diverse talent, fostering innovation, and enables cost optimization through efficient operations. International partnerships drive strategic growth, while a global presence boosts brand recognition, attracting customers and investors [57]. Overall, it ensures competitiveness, sustainability, and long-term growth in the global marketplace.

IT companies have significantly expanded their global reach through innovative strategies and technologies. Here are some examples of IT technologies implemented and the companies who are leaders in these segments.

Table 1.5 Largest companies in different IT technology segments

IT Technology	Companies
Cloud Computing Services	Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform
E-commerce Platforms	Amazon, Alibaba, eBay
Social Media and Digital Marketing	Facebook, Instagram, Twitter
Collaboration Tools	Microsoft Teams, Slack, Zoom
Mobile Applications	WhatsApp, WeChat, Telegram
Data Analytics	Google Analytics, Adobe Analytics

Outsourcing and Offshoring	Infosys, TCS, Wipro
Open-Source Software	Red Hat

Source: Systematized by author

So, having a global reach is essential for IT companies from an economic perspective. It broadens markets, reducing dependency on individual economies and improving stability [58]. It also attracts diverse talent, encouraging innovation, and facilitates cost efficiency through streamlined operations. International partnerships contribute to strategic expansion, while a global presence enhances brand visibility, drawing in both customers and investors. This approach ensures competitiveness, sustainability, and long-term growth in the global market [59].

Data security and compliance are vital for IT companies for several reasons. Firstly, IT firms handle sensitive data, making it crucial to protect against breaches and unauthorized access. Secondly, various laws like GDPR and HIPAA require companies to safeguard user data [60]. Non-compliance can lead to legal consequences and fines. Thirdly, robust security measures are necessary to prevent cyber-attacks like hacking and malware, preserving customer trust and the company's reputation. Moreover, a positive reputation for data security enhances customer trust and gives a competitive edge [61]. Additionally, having compliance measures ensures business continuity even in challenging situations. Lastly, adherence to global data protection laws facilitates international expansion. Overall, these practices are essential for safeguarding data, meeting legal requirements, and maintaining customer trust.

In today's digital age, data security is paramount. Numerous specialized companies focus on safeguarding sensitive information. Here are the top 5 players in the data security industry [62].

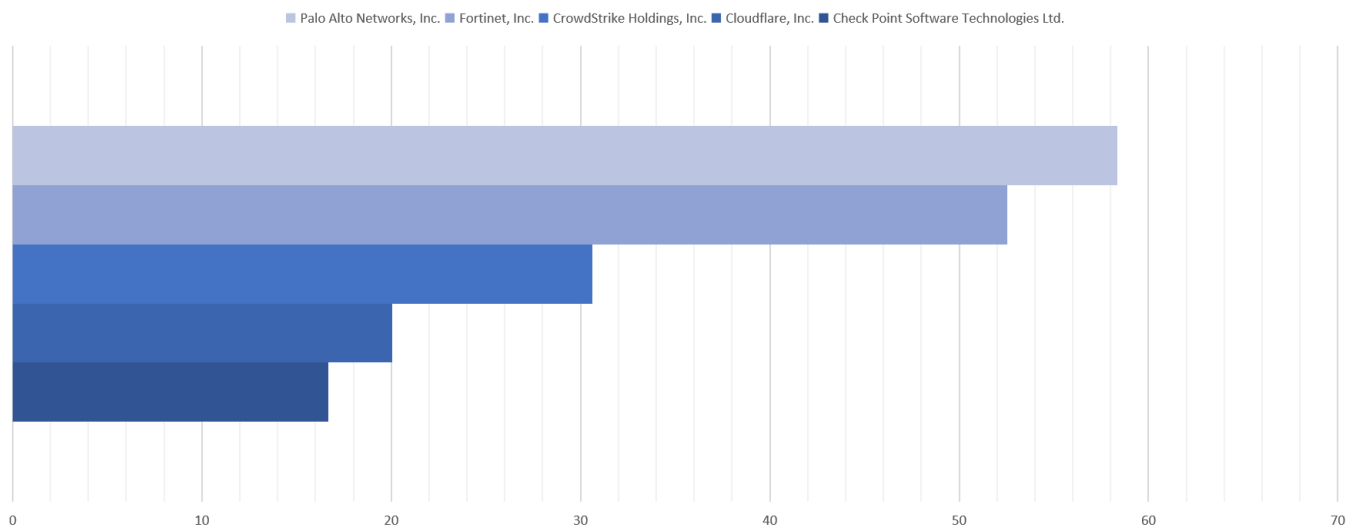


Figure 1.7 Top 5 data protection companies by market cap, bln USD

Source: Systematized by author

Strategic alliances and ecosystem engagement are crucial for evaluating the success of IT companies for several reasons. These collaborations provide access to essential resources and expertise, enabling innovation and market expansion. By partnering with diverse entities, companies can stay agile and develop new capabilities, mitigating risks and enhancing their brand credibility. These alliances also allow IT firms to adapt swiftly to market changes, ensuring their long-term competitiveness and growth.

The IBM and Apple strategic alliance is a prime illustration of how IT companies can thrive through collaboration. By merging IBM's expertise in enterprise solutions with Apple's user-friendly devices, the alliance created a powerful synergy. This partnership focused on specific industries like healthcare and finance, tailoring solutions to meet sector-specific needs [63]. Integrating IBM's security features with Apple's devices ensured robust data protection, addressing a major concern for businesses. With IBM's global reach, the alliance provided these solutions to enterprises worldwide, fostering innovation and

continuous updates. By effectively combining technology, industry focus, security, and global reach, this collaboration exemplifies how strategic partnerships can yield innovative, tailored solutions, leading to mutual success for both companies [64].

However, developing a successful collaboration is a complex task. According to the Business Performance Innovation Network report, 42% of partnerships aren't effectively utilized, 42% don't sustain long-term success, and 67% of companies entering collaborations lack formal partner strategies, resulting in a 43% failure rate for these partnerships.

The synergistic effect plays a pivotal role in shaping the dynamics of the IT market. In essence, synergy means that the combined effect of two or more parts working together is greater than the sum of their independent effects. In the IT landscape, such collaborative actions can unlock unprecedented value, enhance efficiency, and pave the way for innovative solutions.

A classic example of the synergistic effect in the IT world is the merger of complementary businesses. Consider the acquisition of LinkedIn by Microsoft in 2016. Independently, Microsoft was a global leader in software products, while LinkedIn was a frontrunner in professional networking. Post-acquisition, the integration of LinkedIn's extensive network with Microsoft's cloud services and enterprise software created a synergy that offered enhanced services for businesses and professionals alike. Sales teams could leverage Microsoft's Dynamic CRM along with LinkedIn's Sales Navigator for more personalized outreach, a feat neither could achieve as effectively on their own [65].

Synergies also arise from strategic collaborations. Tech firms often collaborate to leverage each other's strengths and address market gaps. A classic case is the partnership between NVIDIA, a graphics processing unit manufacturer, and leading automakers to develop advanced AI systems for self-driving cars [66]. While NVIDIA provides the computational horsepower,

automakers bring in the automotive expertise, leading to a synergistic push towards the future of transportation.

The synergistic effect, in the IT context, emphasizes the idea that collaborations, integrations, or mergers can lead to value creation that surpasses the capabilities of individual entities working alone. This not only fosters innovation but also establishes competitive moats, making synergy a vital parameter of competitiveness on the IT market [67].

So, in the fiercely competitive IT market, key factors define a company's competitiveness. Innovation and technological expertise are vital, leading to unique solutions catering to market demands. Technical proficiency ensures adaptability to emerging trends. Product quality, reliability, and excellent customer support enhance satisfaction. Market adaptability and global reach expand customer base. Robust cybersecurity and compliance build trust [68]. Collaboration, through alliances and ecosystem engagement, fosters innovation. To thrive, IT companies must invest in innovation, maintain high-quality products, adapt to market changes, prioritize cybersecurity, and nurture strategic partnerships, ensuring sustained competitiveness and success [69].

1.3. Optimal strategies for entering the IT market

Entering the IT market is a lucrative yet challenging endeavor due to its dynamic nature, rapid technological advancements, and fierce competition. To successfully penetrate this market, new entrants need to adopt optimal strategies that differentiate their offerings, address market needs, and create a sustainable business model. Determining the "best" strategies for entering the IT market can be subjective and highly dependent on the specific circumstances, resources, and

goals of a business, as well as the niche within the IT industry they're targeting. So I have analyzed different strategies used by IT companies and chose most frequent methods, describing their benefits [70].

There are several strategies that may be suitable the most for entering IT market:

1. Niche focus and differentiation
2. Innovation and agile development
3. Strategic partnerships
4. Robust go-to-market strategy
5. Customer-centric approach

The "Niche Focus and Differentiation" strategy is often considered one of the best for entering the IT market, primarily because the IT industry is highly saturated and competitive. It allows a new entrant to focus on a smaller segment of the market where there may be less competition, and it's easier to become a known, reputable player. Differentiation, on the other hand, helps a company stand out with its unique value proposition.

Focusing on a niche market means less competition and a higher chance to become a market leader in that specific segment. It's easier to gain visibility and credibility in a niche market than in a broad, highly competitive one. A good example of this is HubSpot. Instead of targeting the general CRM (Customer Relationship Management) software market, a company focused on small to medium-sized businesses at its outset. This niche market had unique needs and was underserved by larger CRM providers, allowing HubSpot to establish itself as a trusted solution for this segment [71].

Also niche markets allow companies to understand their customers on a deeper level and tailor solutions to their specific needs. This deep understanding leads to higher customer satisfaction, loyalty, and word-of-mouth referrals [72]. Company as Canva identified a need among non-designers who wanted to create high-quality visual content without complex software. They built a platform

specifically for this market, with a user-friendly interface and templates that made design accessible, thereby differentiating themselves from professional design tools like Adobe Photoshop [73].

Operating in a niche market allows companies to innovate for specific customer needs, often leading to advanced expertise in that area, which sets the company apart from competitors. For example Palantir Technologies focused on big data analytics for government and financial services sectors. This focus allowed them to build highly specialized products catering to the complex and specific needs of data analysis and security for these sectors, setting them apart from general data analytics providers [74, 75]. The focus on a niche market has not limited Palantir's financial success. In the fourth quarter of 2021, the company reported \$322 million in revenue, representing a 40% growth year-over-year. For the full year of 2022, total revenue was around \$1.91 billion, up 23% from 2021, demonstrating strong growth.

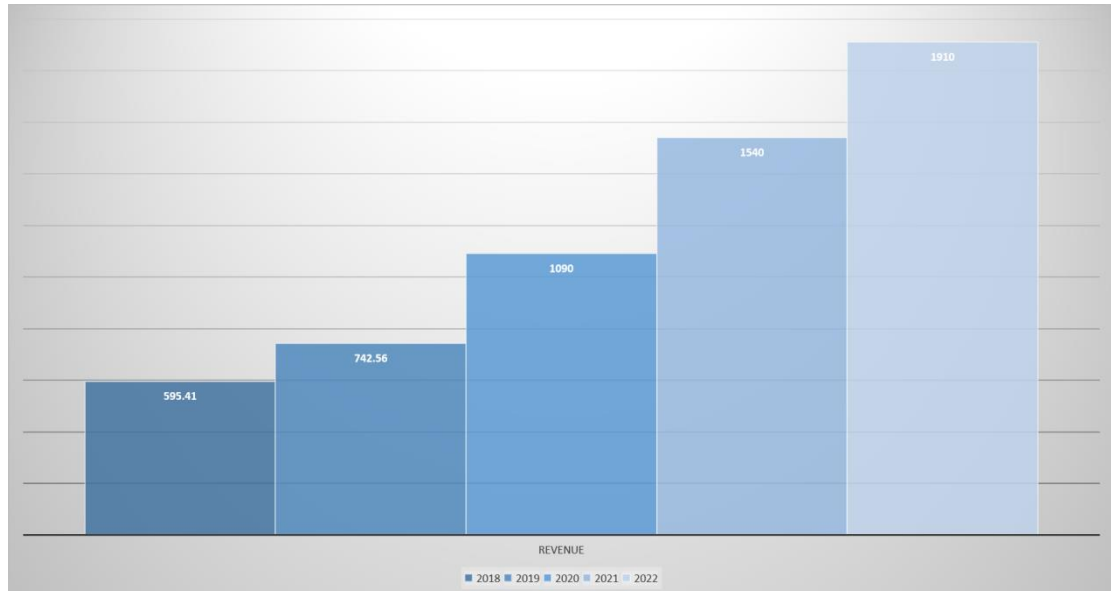


Figure 1.8 Palantir Technologies' revenue 2018-2022, mln USD

Source: Company's financial data, systematized by author

The "Innovation and Agile Development" strategy is pivotal in the IT sector, a domain defined by constant evolution and change. The IT industry thrives on innovation [76]. Companies that bring fresh, disruptive ideas to the table can capture market interest rapidly. Agile development allows for quick adaptation to market feedback, ensuring the product remains relevant and competitive.

The IT industry is characterized by rapidly changing technologies and customer preferences. Agile development, with its iterative approach, allows for the continuous incorporation of feedback, ensuring that the end product or service is finely tuned to meet user needs and market demands. Moreover agile methodologies, by their nature, allow for quicker development cycles and, therefore, a faster time-to-market. This speed can provide a significant competitive advantage, allowing companies to release their innovations while the market is ripe. Companies like Spotify and Facebook are the best illustrations of this methods.

Spotify, the music streaming service, uses an agile development model known as "Squad" that allows them to quickly respond to user feedback and continuously deploy updates. This approach has helped them remain competitive by constantly improving their service with features that users want [77]. Meanwhile, Facebook's mantra "Move Fast and Break Things" underlines the essence of agile development. Though the slogan has evolved, the core concept of rapid innovation remains. They consistently roll out new features and make platform adjustments to respond to the fast-paced social media landscape, often testing new ideas in smaller markets before a wider release [78].

The iterative nature of agile development means that issues are identified and addressed in smaller segments, and there's flexibility to pivot, thereby reducing the risk associated with big failures. Google, known for its innovative approach, uses an agile methodology to test the viability of its products on a

smaller scale before wider release. Products like Gmail, Google Maps, and even Google Glass underwent numerous iterations, with continuous feedback loops reducing overall risk by halting or altering projects that didn't meet user expectations or business objectives [79].

Strategic partnerships are a cornerstone for success in the highly competitive IT market, especially for new entrants aiming to establish their foothold. This strategy involves forming collaborative alliances with other businesses or individuals who can complement or enhance your product offering, market access, and overall strategy. These partnerships can provide several key advantages.

Firstly, strategic partnerships can significantly expedite market entry and expansion. For instance, when a new company partners with an established player, it gains immediate access to the latter's customer base, distribution channels, and market credibility. A classic example is the collaboration between IBM and Microsoft in the 1980s [80, 81]. When IBM selected Microsoft's DOS for its first personal computer, Microsoft gained instant market prominence because of IBM's already dominant market presence.

Furthermore, partnerships can enhance innovation and product development. By combining the strengths, resources, and expertise of two or more entities, partnerships often result in enhanced product features, new product lines, or even breakthrough innovations that wouldn't have been possible otherwise. For example, the long-term collaboration between Intel and Microsoft, famously known as "Wintel," combined Intel's leading-edge microprocessor technology with Microsoft's software expertise [82]. This partnership dominated the personal computer industry for decades, demonstrating how collaborations can lead to sustained technological leadership and market dominance.

In the realm of global reach and localization, partnerships can be instrumental. When companies plan to enter new geographical markets, local partners can provide invaluable insights into customer preferences, cultural nuances, market dynamics, and regulatory compliance.

Additionally, strategic partnerships help in risk sharing, especially when venturing into new markets or developing new products. The financial burden, market uncertainties, and operational risks are shared among the partners. A recent example is the partnership between Google and Cisco to offer cloud and networking services. This alliance combines Google's strength in cloud computing with Cisco's expertise in networking and infrastructure, allowing both companies to better serve their corporate customers while mitigating the inherent risks of venturing alone into new service domains.

Lastly, partnerships can provide new revenue streams and cost-saving opportunities. Companies can leverage their partners' assets, technologies, or services to enhance their offerings, often at a fraction of what it would cost to develop in-house.

A robust go-to-market (GTM) strategy is crucial for any company entering the IT market due to the industry's complexity, competitiveness, and the innovative nature of its products and services. This strategy outlines how a company will reach customers and achieve competitive advantage. The essence of a strong GTM strategy lies in its ability to clearly define the company's value proposition, identify the target market, and effectively deploy the products or services to the clients in an efficient and cost-effective manner.

One primary reason why a robust GTM strategy is optimal for market entry stems from the sheer velocity of change within the IT sector. Technologies evolve, new trends emerge, and customer preferences shift rapidly; a well-orchestrated GTM plan allows companies to stay ahead of these changes and adapt their approaches in real-time [83]. It ensures that the product or service not

only reaches the market swiftly but also meets the immediate needs and preferences of the target customers, thereby providing a competitive edge.

Moreover, a comprehensive GTM strategy encompasses detailed market analysis, including an understanding of the competitive landscape, customer personas, and potential barriers to entry. This insight is crucial for new entrants in the IT market to position themselves strategically, differentiate their offerings, and identify the most effective routes to market, whether that's direct sales, partnerships, or online channels.

Now, let's consider the example of Slack, a business communication platform, to understand the effectiveness of a robust GTM strategy in action. When Slack was getting ready to launch, they didn't just throw their new platform out into the world. Instead, they executed a calculated GTM strategy that started with a clear value proposition. Understanding that businesses needed a way to improve communication and reduce email overload, Slack offered a channel-based messaging platform that made team communication organized and accessible.

But Slack didn't stop there; their GTM strategy involved targeting a specific initial user base - tech-savvy teams at small- and medium-sized businesses, particularly in the tech industry. They understood the pain points of this audience and tailored their messaging to demonstrate how Slack met these specific needs [84]. This laser-focused targeting allowed them to gain a strong foothold with a user base that was likely to share their positive experiences with others in the industry [85].

Furthermore, Slack's go-to-market approach included a freemium model. This model allowed teams to start using the platform for free, which significantly lowered the barrier to entry. As teams got hooked on the platform's functionality, they naturally moved to the paid versions. This strategy not only provided immediate value to users but also created a built-in mechanism for

growing revenue. And this bet paid off. As of 2021, Slack had over 19.2 million daily active users, with more than 156,000 paid customers. Notably, among these were large organizations that paid for their employees to use premium versions, contributing significantly to its revenue [87].

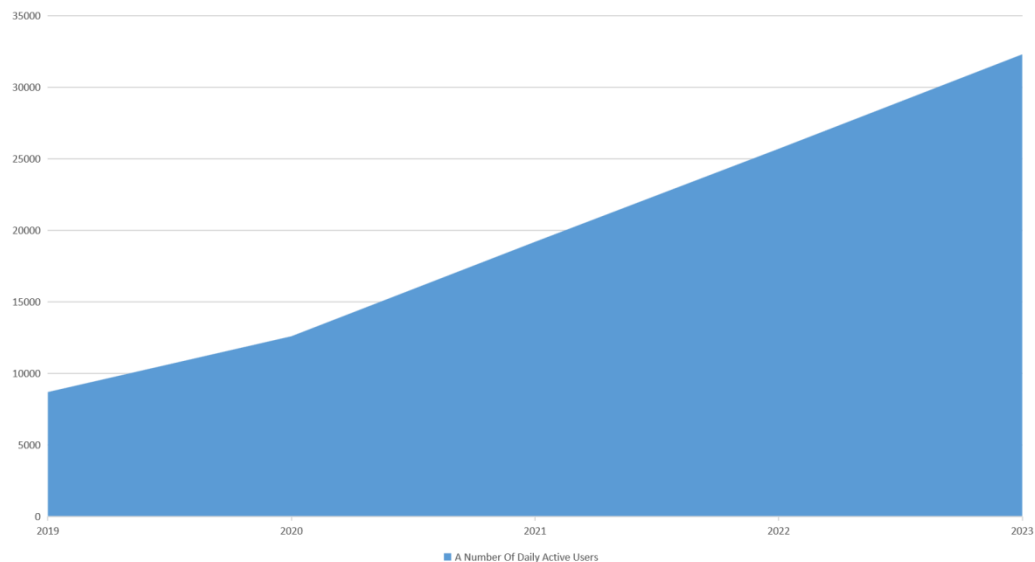


Figure 1.9 Number Of Daily Active Users Of Slack, thousands

Source: Business Insider, Company data

Another component of Slack's successful GTM was a heavy emphasis on customer experience from the get-go. They ensured that their platform was user-friendly and that they provided exemplary customer service. This focus on the customer experience helped them build a strong brand reputation early on, encouraging user adoption and retention.

In the end, Slack's carefully crafted GTM strategy was a massive contributor to its widespread adoption and success [88]. By understanding their target market deeply, offering immediate and tangible value, employing a pricing strategy that encouraged adoption, and focusing on an excellent customer experience, they were able to successfully carve out a significant share of the communication platform market.

Hence, a robust GTM strategy is not just beneficial but essential for companies entering the competitive IT market. It helps in positioning the offering, targeting the right audience, overcoming entry barriers, and accelerating market penetration, all while adapting to the market dynamics that characterize the IT industry.

A customer-centric approach is critical for new entrants in the IT market, acting as a cornerstone for enduring success in a landscape brimming with competition. This philosophy is rooted in comprehending and anticipating customer needs, ensuring that every facet of the business, from product development to customer service, is tailored to provide maximum value to the client.

Firstly, this strategy bolsters customer loyalty and retention, a vital aspect of long-term business viability. Adobe exemplifies this through its shift from packaged software to the Adobe Creative Cloud. This transition, more than a mere structural change, represented a profound understanding of customer preferences for accessible, constantly updated tools, significantly driving up both subscription numbers and overall revenue [89].

Moreover, a customer-centric approach fuels innovation that resonates. By weaving user feedback into the very fabric of its product evolution, the company manages to stay consistently relevant and valuable to its users, introducing groundbreaking features that were directly echoed from user suggestions.

Additionally, the power of customer satisfaction translates into organic growth via word-of-mouth. Dropbox's exponential growth can be traced back to its ingenious referral program, which capitalized on users' appetite for more storage by rewarding referrals with just that. This deep understanding of user preference not only accelerated user base expansion but also achieved it with a fraction of traditional advertising expenditure. In the labyrinth of the IT industry,

differentiation is key, and a customer-centric model carves out a clear identity [90].

Finally, market adaptability, crucial in the ever-evolving IT realm, is fortified by a customer-centric approach. Netflix is a classic example, having morphed from a simple DVD rental service to a streaming behemoth and content pioneer. This evolution was guided by an acute awareness of changing viewer behavior, allowing Netflix not just to adapt, but to thrive amidst the industry's shifts [91].

In essence, for businesses venturing into the IT market, embedding a customer-centric approach is non-negotiable. It solidifies customer loyalty, drives meaningful innovation, fosters organic growth, carves a unique market position, and ensures adaptability, all of which are vital currencies in the dynamic realm of information technology [92]. Success stories of giants like Adobe, GitHub, Dropbox, Apple, and Netflix are compelling testaments to the transformative power of a strategy that places the customer at its nucleus.

After describing all the strategies I made an analysis to analyze these strategies in terms of goals this strategy is best for, main spheres to invest money to, their effectiveness, and also problems and risks that may arise.

Table 1.6 Analysis of IT market entering strategies

Strategy	Goals	Costs	Effectiveness	Problems	Risks
Niche focus and differentiation	To target underserved areas of the market, create unique value propositions, and establish a	Requires substantial market research to identify potential niches and	Highly effective in reducing competition by focusing on a market segment that	The market size might be limited, potentially capping revenue opportunities	The niche market could evolve or disappear due to technological advancements

	strong brand presence within a specific domain.	significant investment in specialized product development and marketing.	may be overlooked by larger players. This focus can enhance customer loyalty and enable premium pricing for specialized solutions.	. Over-specialization may lead to challenges in adapting to market changes or expanding to broader markets.	or shifts in customer preferences. There's also a risk of larger competitors entering the niche once it's proven profitable.
Innovation and agile development	To continuously introduce groundbreaking products or features and adapt quickly to changes in market demand or technology.	Investment in R&D is substantial, as is maintaining a skilled workforce capable of rapid iteration and adaptation. Agile development requires ongoing training, tools, and processes.	Enables companies to stay ahead of market trends, meet customer needs effectively, and respond to feedback and changes rapidly.	Constant iteration can lead to feature fatigue or confusion among customers. There's also the potential for an incomplete understanding of customer needs if iterations move too quickly.	Continuous investment in innovation without guaranteed returns can be financially draining. Agile development might lead to a lack of long-term planning or consistency, potentially causing strategic drift.
Strategic partnerships	To leverage the strengths, resources, and	Finding and securing the right	Partnerships can provide immediate	Potential misalignment of	Partnerships can dissolve due to

	market position of partners to expedite market entry, enhance product offerings, and expand market reach.	partnership can be costly and time-consuming. It often requires revenue sharing, joint investment, or resource pooling.	access to new markets, technologies, and customer bases, as well as enhance credibility by association.	objectives, culture, or management styles. Dependency on partners can also become a vulnerability.	competition, strategic divergence, or changes in leadership. Sensitive information shared with partners might be compromised.
Robust go-to-market strategy	To effectively introduce products to the market with a clear value proposition, targeted marketing, and efficient distribution strategies.	Involves significant expenditure on market research, marketing, sales, and distribution channels, as well as potential initial price discounts or customer acquisition costs.	A well-planned GTM strategy accelerates market penetration, optimizes resource allocation, and provides a clear roadmap for achieving market goals.	A static GTM strategy may not adapt well to market changes. Misjudgment in market readiness, customer personas, or competitive landscape can derail plans.	The strategy might not resonate with customers as expected, leading to slow market adoption. Over-allocation of resources in the wrong channels can strain budgets and stunt growth.
Customer-centric approach	To build products and services around customer needs and preferences,	Requires investment in customer relationship management, feedback systems, and	Enhances brand reputation, encourages repeat business, and can lead	Trying to cater to all customer demands can dilute the product focus and	Over-reliance on a customer-centric model might limit scalability or lead to

	thereby increasing customer satisfaction, loyalty, and word-of-mouth referrals.	sometimes, personalized product or service modifications. Customer support and high-quality service are also cost factors.	to organic growth through customer advocacy.	strain resources. Negative feedback can escalate if not managed properly.	reactionary product development. Misinterpretin g customer feedback or failing to meet rising customer expectations can harm the brand.
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Source: Systematized by author

Ultimately, while the 'best' strategies for entering the IT market are influenced by various factors unique to each business, the common denominator for success lies in a company's ability to adeptly navigate the market's complexities, continuously adapt to its changes, and relentlessly strive to understand and fulfill the evolving needs of the customer. The amalgamation of these strategic elements doesn't just facilitate market entry but paves the way for sustained success and growth in the ever-evolving realm of information technology.

And so it was easier for start-up company to choose optimal strategy I have developed framework which include main market indicators that need to be analyzed. With it help the company will be able to choose most effective strategy for their specific market needs.

Table 1.7 Choosing IT market penetration strategy framework

Factor	Niche Focus and Differentiation	Innovation and Agile Development	Strategic Partnerships	Robust Go-To-Market Strategy	Customer-Centric Approach
Company Size	Small/Medium	Medium/Large	Any	Any	Any

Resource Availability	Moderate	High	High	High	Moderate to High
Market Dynamics	Low competition niches	Fast-evolving	Competitive	Varied	Varied
Innovation Capacity	High	Very High	Moderate to High	Moderate	Moderate
Risk Appetite	Moderate	High	Moderate	Moderate	Moderate
Speed to Market	Slow/Moderate	Fast	Fast	Moderate to Fast	Slow/Moderate
Control Preference	High	High	Shared	High	High
Scalability	Low	High	High	High	Moderate to High
Customer Knowledge	Deep in niche area	Moderate to Deep	Varies	Deep	Very Deep
Long-term Orientation	Focused/Narrow	Broad/Adaptive	Collaborative	Structured/Broad	Adaptive/Responsive

Source: Systematized by author

Chapter 2 Priorities and strategies for internationalization of the Ukrainian

IT industry

2.1. Ukrainian IT industry: specifics of development and competitive positions on global markets

The Ukrainian IT industry has experienced a dynamic transformation since Ukraine's independence in 1991. The 1990s marked the pioneering era of the industry, with the establishment of some of the country's earliest IT firms.

Prominent names like Technosoft, ELEKS, Mirasoft, Validio Software, SoftServe, NIX Solutions, and K-Trade began their operations during this period, laying the groundwork for the sector's expansion.

In the infancy of the industry, investment firms played a crucial role in fostering its growth. Early supporters such as Western NIS Enterprise Fund, SigmaBleyzer, IFC, and AVentures provided the much-needed financial backing and strategic expertise, ensuring the industry's foundational stability and progressive vision.

The turn of the millennium witnessed the integration of technology with the broader economy [93]. In 2000, PrivatBank, a leading financial institution, pioneered by launching the nation's first online banking platform. The same year, Infocom took a significant step by establishing Ukraine's inaugural data center, marking the country's entry into the realm of advanced IT infrastructure.

Another notable trend that cemented Ukraine's position on the global IT map was the establishment of offices by global tech giants. Intel made its mark as early as 1993, followed by Epson in 1995. The early 2000s saw the entry of other tech behemoths: Microsoft and Sony Ericsson Mobile in 2003, Netcracker in 2006, IBM in 2007, and Samsung R&D Institute in 2008. More recent entrants into the Ukrainian market include Uber and Bolt in 2016, with tech titans like Google, Amazon, and Apple establishing their presence in 2020 and 2021, respectively [94].

Institutional developments also played a pivotal role in shaping the industry. 2004 witnessed the foundation of the IT Ukraine Association, an essential milestone in streamlining industry interests and collaboration. Another remarkable development came in 2008 with the establishment of Grammarly, Ukraine's first unicorn company, setting the stage for other innovative ventures like Genesis and MacPaw.

The subsequent years witnessed the global recognition of Ukrainian IT firms. 2013 marked the IPOs of EPAM and Luxoft, highlighting the industry's capability to compete at the global level. By 2015, innovative projects such as ProZorro, iGov.org.ua, and BankID were launched, emphasizing the nation's thrust towards digital transformation. Newer entrants like People.ai in 2016, Reface and Rocket in 2018, further added to the innovation landscape [95].

Global accolades soon followed, with Ukraine being recognized as the 'Outsourcing Destination of the Year' by the Global Sourcing Association in 2017. This global acknowledgment was further bolstered by the establishment of the Ministry of Digital Transformation in 2019, reinforcing the nation's commitment to digital progression. The year 2021 saw a significant M&A activity with the merger of Hitachi & GlobalLogic, encapsulating the rapid strides made by the Ukrainian IT industry over three decades.

Ukraine has become a key player in the IT world, and much of this success is credited to its universities. These institutions offer a variety of IT-focused courses, ensuring students are ready for the tech world's challenges [97]. A distinct feature of Ukrainian education is its real-world application. Many universities collaborate with IT businesses, allowing students to get practical experience. This not only sharpens their skills but also boosts creativity and problem-solving.

Additionally, Ukrainian universities lead in IT research. This, combined with collaborations with international partners, promotes a thriving IT environment in Ukraine. Many graduates have found roles in top global tech companies or started their own businesses, underlining the quality of education they received. The Ukrainian government, seeing the potential, has supported universities with various initiatives to encourage more growth in IT research and development [98].

Ukraine has made great progress in the production and export of IT services, increasing the number of exports almost threefold from 2016 to 2021. And the amount of export of IT services in 2021 was 37% of the export of all services [99].

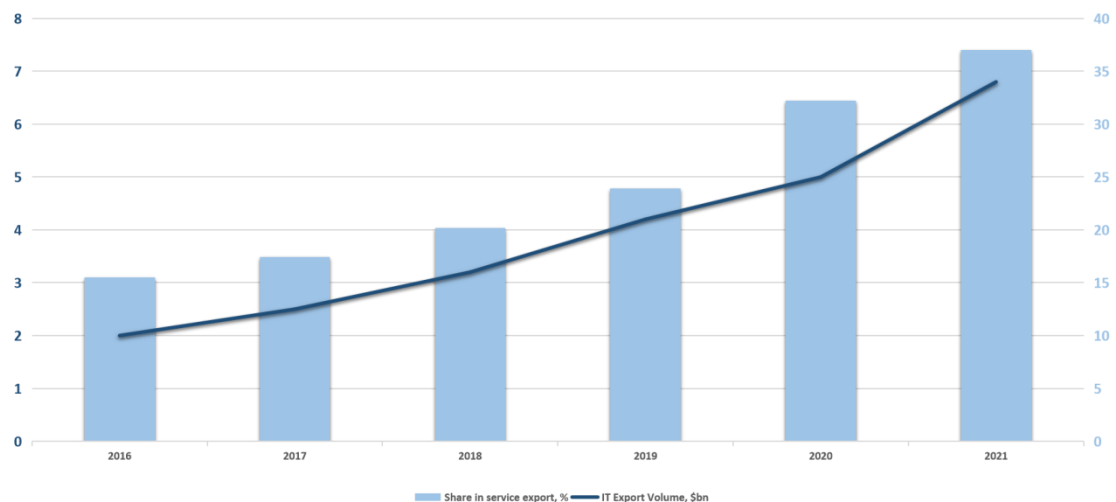


Figure 2.1 Ukrainian IT export volume and share of IT export in service export

Source: National Bank of Ukraine

In recent years, Ukraine has emerged as a burgeoning force in the global IT landscape, a shift underlined by its significant contribution to the nation's economic resilience. As of 2021, the IT industry in Ukraine has grown at an impressive 26% rate, marking it as a pivotal driver of the country's economy. This robust growth is primarily attributed to the rising exports of tech services, which have increased the IT sector's contribution to Ukraine's GDP from 0.8% in 2012 to 4% in recent times [100].

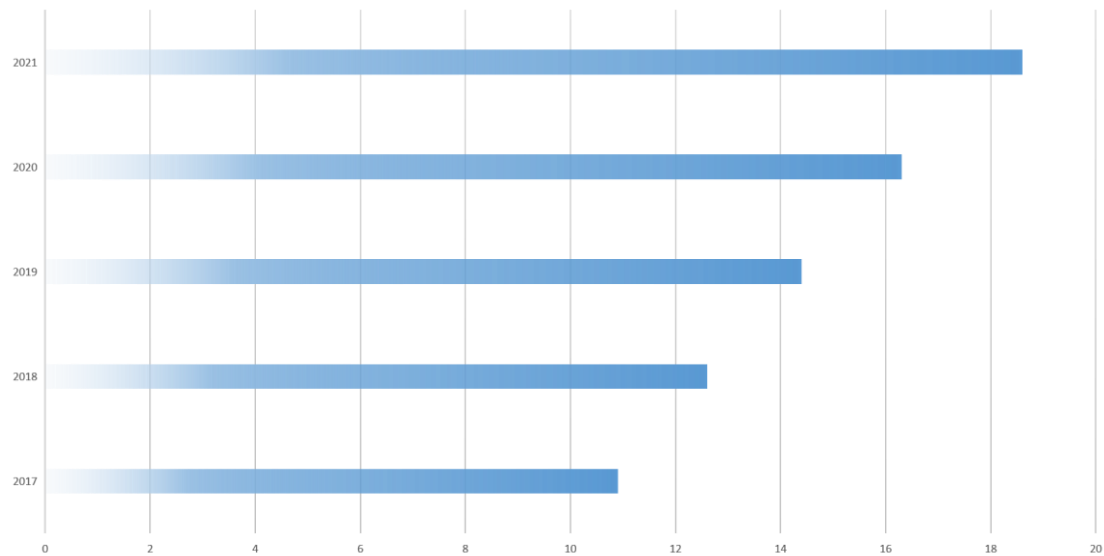


Figure 2.2 Number of registered IT legal entities in Ukraine, thousands

Source: Unified State Register of Legal Entities and Entrepreneurs

Key Drivers of Growth in the Ukrainian IT Industry:

1. Diverse IT Ecosystem
2. Startup Culture
3. Outsourcing and Offshoring Hub
4. Talented Workforce
5. Competitive Advantage
6. R&D Centers
7. Governmental Reforms

First, the diverse IT ecosystem, comprising roughly 4,000 tech firms, predominantly focuses on software engineering, QA testing, application support, and R&D. This diversity is further enriched by over 1,000 product companies and around 860 service vendors, with a significant emphasis on IT outsourcing [101].

Second, the thriving startup culture, highlighted by established entities like Grammarly and People.ai, has brought global attention to Ukraine. Notably, in 2021, Ukrainian startups attracted an impressive \$571 million in investments.

Third, Ukraine's stature as a premier IT outsourcing and offshoring hub in Central & Eastern Europe, coupled with its position among the top 20 offshoring locales in the EMEA region, accentuates its prowess. This prominence is bolstered by its vast reservoir of tech talent, producing high-quality work that aligns with Western cultural nuances.

The strategic geographical positioning, combined with low tax rates (5%) and competitive wages, presents Ukraine as an economically attractive option for foreign firms seeking quality IT services. The influx of global tech giants like Google and Amazon, establishing R&D bases in Ukraine, further solidifies its reputation [102]. Lastly, the government's proactive approach, seen through beneficial reforms and improved business conditions as noted in the World Bank Doing Business 2020 report, amplifies Ukraine's appeal to international stakeholders. With these factors at play, Ukraine's burgeoning IT industry is poised to reinforce its standing as a global IT juggernaut.

The prominence of Ukrainian IT professionals in the global arena can be attributed to several interconnected factors that emphasize their technical prowess and adaptability. First and foremost, Ukraine's robust educational infrastructure plays a pivotal role. Each year, the country produces an impressive cadre of over 16,000 tech graduates, a figure projected to burgeon to 37,400 by the year 2030. This foundational education equips them with profound technical knowledge, fostering adaptability that allows them to navigate the ever-evolving landscape of technological innovations.

Furthermore, the Ukrainian developer community displays a commendable proficiency in a spectrum of programming languages. While JavaScript maintains its preeminence, there's a discernible gravitation towards languages such as Java, C#, Python, and TypeScript. Such versatility in technical acumen ensures they are well-positioned to address diverse global technological requisites.

Complementing their technical capabilities is their linguistic competence. It is noteworthy that approximately 70% of Ukrainian IT professionals possess an intermediate to upper-intermediate proficiency in the English language. This linguistic aptitude is instrumental in facilitating seamless communication, especially when interfacing with international collaborators. Equally significant are the soft skills inherent within the Ukrainian IT community [103]. Beyond mere technical proficiency, these professionals are characterized by their unwavering dedication, organizational prowess, exemplary communication skills, and congenial disposition. These attributes not only augment their technical capabilities but also engender a conducive and productive working environment.

An additional dimension that underscores the appeal of Ukrainian IT professionals on the global stage is their cost-effectiveness. Despite their high-caliber skills, the remuneration expectations of Ukrainian developers, especially those at the middle to senior tiers, remain markedly lower than their contemporaries in regions such as the USA or Western Europe. This economic feasibility, juxtaposed with their technical and soft skills, renders Ukraine a highly attractive nexus for IT offshoring endeavors.

Lastly, the concentration of IT professionals in urban centers like Kyiv, Lviv, and Kharkiv, which collectively house 69% of the nation's IT workforce, facilitates a milieu of collaborative growth and innovation. In summation, the confluence of educational rigor, diverse technical expertise, linguistic proficiency, soft skills, economic viability, and a thriving IT community elevates Ukrainian IT professionals to a position of prominence in the global tech domain [104].

Also It is notable to mention such IT giants known worldwide as EPAM Systems, Grammarly and Luxoft. These companies is highly associated with Ukraine nowadays.

EPAM Systems, originally from Belarus, exemplifies this influence. Although not native to Ukraine, the company recognized the potential and capabilities inherent in the Ukrainian IT landscape. By establishing multiple development centers across major Ukrainian cities, EPAM has not only fostered employment opportunities but also augmented the professional growth and development of local tech talent. This investment in Ukraine's IT sector has further solidified the country's reputation as a hub for tech excellence. A testament to the synergy between EPAM's growth strategy and Ukraine's IT potential is the company's consistent appearance on the Forbes list of fastest-growing tech companies, with a significant portion of its workforce operating from Ukraine [105].

Meanwhile, Grammarly stands as a beacon of Ukrainian innovation on the global stage. As a tech enterprise with Ukrainian origins, Grammarly's ascendancy to becoming one of the world's most widely used writing assistance tools demonstrates the caliber of tech innovation emerging from the country. The success story of Grammarly not only elevates the global perception of Ukrainian tech products but also serves as an inspiring model for aspiring Ukrainian startups and entrepreneurs. The company's trajectory, from its inception in Kyiv to its global recognition, underscores the international potential of tech ventures that are seeded in Ukraine [106].

Lastly, Luxoft's footprint in Ukraine reaffirms the country's significance in the global IT service domain. As a giant in the IT service industry, Luxoft's substantial operations in Ukraine highlight the country's strategic importance as a reliable and scalable base for tech operations. By integrating Ukrainian IT professionals into its global projects, Luxoft showcases the prowess and adaptability of the local workforce. Furthermore, the company's continued investment and growth in Ukraine signify the mutual benefits reaped from this collaboration, reinforcing Ukraine's competitive edge in the global IT marketplace.

In 2022, amidst the backdrop of wartime challenges, Ukraine's IT sector showcased a resilience that underscores its significance in the global tech landscape. The sector achieved a record export revenue of \$2 billion in the first quarter, marking a 28% increment from the previous year's figure of \$1.44 billion [107]. This financial resilience is further highlighted by the fact that nearly 80% of Ukrainian IT enterprises secured new contracts during this period, and approximately 60% harbored intentions to expand their operations by 30%. Despite the inevitable disruptions war brings, only a minimal 2% of IT companies were compelled to halt their operations. A testament to the sector's adaptability is the statistic that 46% of IT professionals relocated to regions less affected by the conflict, either within Ukraine's borders or internationally. This flexibility ensured that 84% of software developers continued to offer full-time project support [108].

Client relationships, a crucial aspect of business continuity, remained largely unaffected. Data indicates that 52% of surveyed IT entities in Ukraine retained all contractual obligations, and an additional 32% maintained between 90-99% of their agreements. Only a marginal 16% experienced a client reduction of 10% or more. These figures not only highlight Ukraine's IT sector's robustness but also its global relevance. The consistent growth in IT export volumes elucidates Ukraine's integral role as a primary source of tech expertise for regions like Europe and the USA [109]. The implications of this data suggest a considerable reliance of global tech industries on Ukraine's talent pool, emphasizing potential global ramifications should this talent reservoir face future disruptions.

So, we can see that Ukraine's rise in the global IT market is clear and lasting. The country combines strong technical skills, good value for money, and the ability to adapt to new tech trends. Located between Europe and Asia, Ukraine benefits from both regions. The steady growth in IT exports shows the world's increasing trust in Ukrainian IT services. Plus, the hard work and

teamwork of Ukrainian IT professionals make them great partners for international projects. As the IT world keeps changing, Ukraine is not just following but leading in many areas. With its mix of skills, value, and location, Ukraine has a bright future in the global IT scene.

2.2. Specifics of transnationalization of the Ukrainian IT market

To better delve into the topic we should understand what transnationalization is. Transnationalization of the IT market refers to the process by which IT services, products, and operations expand beyond the borders of a single country to operate in multiple countries simultaneously. This encompasses a range of activities, including outsourcing, offshoring, establishment of research and development centers, and the sale and distribution of IT products and services across borders [110]. Below are key features of transnationalization in the IT sector.

Table 2.1 Key features of transnationalization of the IT companies

Key feature	Meaning
Global Operations	Companies establish branches, offices, or subsidiaries in multiple countries to tap into local resources, markets, or talent pools.
Cross-border Data Flow	As IT primarily deals with digital services and products, the movement of data across international borders is a key characteristic of its transnational nature.
Outsourcing and Offshoring	Companies contract out certain IT

	functions to external providers, often in countries where labor costs are lower or specific expertise is available. This can involve transferring certain business processes or services to another country or simply hiring another company to handle specific tasks.
Global Talent Acquisition	With the proliferation of remote work and online collaboration tools, companies can hire talent from anywhere in the world, leading to diverse and geographically dispersed teams.
Collaborative Projects	Multinational teams often collaborate on projects, sharing expertise and resources from different parts of the world. This can lead to the development of products and services tailored for a global audience.
Regulatory Considerations	Transnational IT operations often have to navigate the regulatory and legal environments of multiple countries, ensuring compliance with local laws pertaining to data privacy, cybersecurity, and intellectual property, among others.
Cultural Adaptability	Transnational operations require a deep understanding and adaptation

	to various cultural nuances, both in terms of consumer preferences and team collaboration.
Supply Chain Integration	In the hardware domain of IT, components might be sourced from one country, assembled in another, and sold in a third country, making the supply chain truly global.

Source: Systematized by author

The global IT market has been distinctly characterized by its swift transnational integration, guided by several pervasive trends. Services within the IT realm, such as software development and IT support, have spearheaded globalization efforts, with communication advancements allowing for borderless operations. The shift towards remote and distributed teams, markedly catalyzed by the pandemic, has dismantled traditional geographical constraints, showcasing the industry's capacity for global coordination. Outsourcing and offshoring remain prominent, with companies leveraging the cost and skill advantages of countries rich in IT talent. This trend has transformed certain regions into global IT hubs. Concurrently, the landscape has seen an uptick in cross-border mergers and acquisitions, as companies strive to enhance their global reach and technological prowess.

The proliferation of cloud computing and SaaS models has further globalized IT access, providing users worldwide with advanced tools previously limited to well-resourced entities [111]. With such expansion, however, comes the challenge of navigating diverse cybersecurity threats and stringent data protection regulations that vary by region.

E-governance and smart city projects also reflect the transnational nature of the IT market, with governments partnering with international firms to innovate public service delivery. In the pursuit of cutting-edge solutions, IT companies are establishing R&D centers across the globe, fostering international collaboration [112].

Cultural adaptability and the localization of products and services have become as crucial as global outreach, ensuring IT solutions are contextually relevant. Moreover, there's an emerging focus on ethical and sustainable IT practices, underlining the sector's commitment to social responsibility amid its transnational growth.

Exporting IT services significantly contributes to the transnationalization of companies, facilitating their seamless integration into the global marketplace [113]. This is exemplified by the Ukrainian IT sector, where substantial service exports have laid the groundwork for companies to expand their operations and influence across international borders.

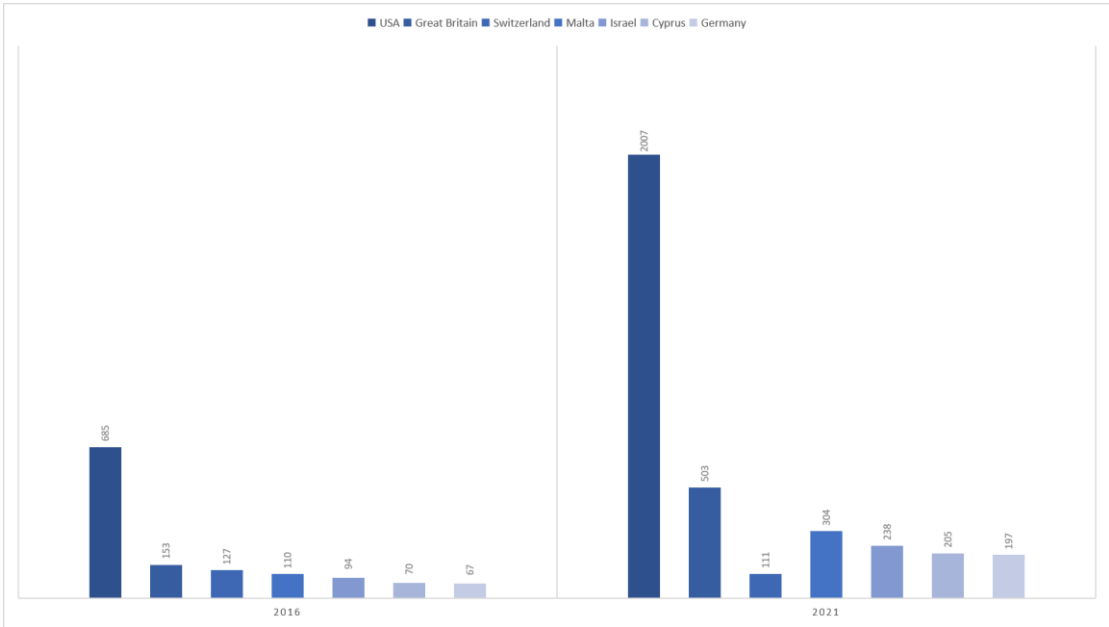


Figure 2.3 Top computer service export partners, mln USD

Source: Statista

The United States, absorbing approximately 40% of Ukraine's IT services exports, and the United Kingdom, importing another 10%, serve as primary portals through which Ukrainian companies access and establish their presence in wider, lucrative markets [114]. This exposure is not just about revenue; it is about embedding these companies into the commercial fabric of these countries, building a global brand presence that paves the way for further expansion and business opportunities [115].

Diversifying their client base to other nations such as Switzerland, Malta, Israel, Cyprus, Germany, Canada, Denmark, and the Netherlands, Ukrainian IT firms effectively mitigate risks associated with market fluctuations and local economic volatilities. This strategic spread of clientele is a cornerstone of becoming a transnational entity, reducing reliance on a single economy and embracing a global operational outlook. The cross-border flow of talent that often accompanies service exports enriches Ukrainian companies with diverse expertise and perspectives, fostering an environment conducive to innovation and global competitiveness. Adapting to and implementing global standards is a byproduct of this process, positioning these firms alongside leading transnational corporations.

Moreover, successful forays into international markets render Ukrainian IT companies attractive targets for foreign direct investment (FDI). Such investments bring not only capital but also industry insights, technological advancements, and expansive networks, all of which are integral to sustaining transnational growth and establishing a durable global presence [116].

The drive to cater to a varied global customer base inherently spurs innovation, compelling companies to tailor their offerings to meet a spectrum of market demands. This continuous evolution ensures that Ukrainian IT firms maintain a competitive edge, crucial in a rapidly advancing technological landscape.

Foreign investments are pivotal in propelling Ukrainian IT companies onto the global stage. With annual deals worth \$300-700 million, these investments fuel growth and technological advancements, enabling companies to expand beyond Ukraine's borders. Key examples include Restream and Very Good Security, which secured \$50 million and \$60 million respectively, enhancing their global service offerings. Creatio and People.ai, with \$68 million and \$100 million in funding, have similarly scaled their operations internationally. Grammarly's \$200 million investment and GitLab's \$650 million funding, culminating in an IPO, are testaments to the sector's capability to attract significant capital for global market expansion [117].

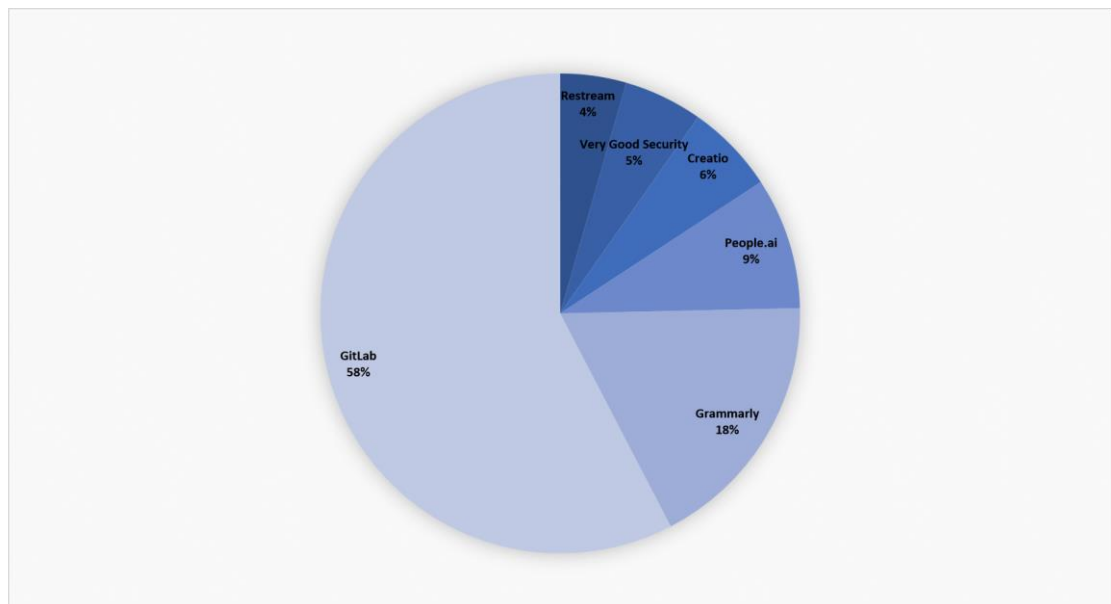


Figure 2.4 Foreign Direct Investments received by Ukrainian IT companies in 2021, mln USD

Source: National Bank of Ukraine, UNCTAD

This influx of funds underpins the transnationalization of Ukrainian IT firms by enabling product development, market penetration, talent acquisition, and technological upgrades. It also fosters compliance with international regulations, crucial for operating across borders. In essence, foreign investments

are transforming Ukrainian IT companies from local enterprises into significant global tech contenders.

Due to the factors mentioned in previous chapter Ukraine became perfect outsourcing hub for IT industry all over the world. And many Ukrainian specialist working in transnational IT companies, as well as Ukrainian IT startups have spread all over the world. But transnationalization of the Ukrainian IT market is an intricate process, influenced by internal dynamics and external perceptions. While its growth has been commendable, several challenges pose potential risks to its stability and further expansion into the global market. The main challenges are following:

1. Geopolitical Instability
2. Economic Fluctuations
3. Brain Drain
4. Infrastructure Constraints
5. Regulatory Hurdles
6. Cybersecurity Concerns
7. Cultural and Language Barriers

Ukraine has experienced considerable geopolitical instability, which poses a deterrent to foreign investment and complicates international collaborations. Full-scale war, territorial conflicts and internal political unrest have led to an unpredictable environment, influencing investor confidence and operational continuity. According to a report by the International Monetary Fund, direct foreign investment in Ukraine fell by approximately 20% in the year following the onset of territorial disputes in the Eastern regions [118, 119].

The Ukrainian economy has faced significant fluctuations, particularly with the hryvnia's volatility against major currencies. Such economic instability can impact the IT sector's pricing models and long-term contracts. A study by the National Bank of Ukraine notes a correlation between currency instability and reduced long-term IT contract signings, with a fluctuation range averaging 5.8% in the past fiscal year [120].

The tendency of skilled IT professionals to seek opportunities abroad, known as 'brain drain', presents a considerable challenge. Despite Ukraine producing over 16,000 IT graduates annually, a portion of this talent pool is lost to international markets. Data from Ukraine's Ministry of Education and Science indicates a 12% emigration rate among IT professionals within five years post-graduation [121].

While there have been significant infrastructural developments, certain regions in Ukraine still grapple with inadequate internet bandwidth and energy supply issues. A report from the Ukrainian Internet Association highlights that approximately 18% of IT businesses in rural areas experience recurrent connectivity issues .

The synchronization of Ukrainian legislation with international standards, particularly in areas of intellectual property and data protection, remains incomplete. This legislative gap hinders seamless transnational IT operations and poses compliance risks [122].

As the IT industry grows, so does the scope and complexity of cybersecurity threats. Ensuring stringent security protocols is vital for the protection of data and maintaining client trust. Recent government data suggests cybersecurity incidents in Ukraine have increased by 33% in the last two years, emphasizing the need for fortified cyber defenses[123].

Despite high levels of English proficiency among IT professionals in Ukraine, subtle language and cultural nuances can still result in project inefficiencies. The intricacies of cross-cultural communication can lead to misinterpretations that can affect the execution and delivery of IT projects.

So, addressing these challenges through strategic planning and policy reforms is critical for the continued growth and stabilization of Ukraine's IT market on the transnational stage. It will require concerted efforts from

stakeholders within both the public and private sectors to navigate these complexities effectively.

Chapter 3 Main directions and financial features of increasing competitiveness on the international IT market

3.1. Structural and financial optimization of the IT sector in Ukraine

The Ukrainian IT sector's structural and financial ecosystem has undergone a significant transformation, particularly accentuated by the onset of the Russian invasion. The conflict has catalyzed a restructuring within the industry, forcing companies to re-evaluate their operating models and financial strategies. This part of the thesis delves into the intricacies of these shifts and their broader implications for the IT market.

The invasion instigated a pressing need for organizational agility within the IT sector. Companies had to cease renting office spaces and reduce staff, resulting in approximately 40% of IT professionals losing their jobs. Despite these setbacks, the IT industry's resilience was notable as it swiftly resumed hiring, maintaining salary levels consistent with pre-war standards.

The IT industry has shown remarkable fortitude, suggested to be the potential leader in Ukraine's economic development post-victory. The IT Ukraine Association reported a substantial growth in the share of computer services in the GDP, from 1.8% to 3.5% over six years, and a growth in the export of services from 13.4% to 37.8% of the GDP in the same period. Notably, despite the war, IT accounted for a 10% growth in export revenues, fetching \$6 billion to the country [124].

The sector's rapid adaptation to the new realities of war is underscored by the fact that 34.3% of companies surveyed adapted successfully, with over 43% expecting further growth. Analysts had projected a potential of \$37 to \$44 billion in export revenues over the next four years, were it not for the war. The industry also significantly contributes to the national budget, with tax and fee contributions amounting to €23.5 billion in 2021 [125].

The transformation of IT education is pivotal for sector growth. The first half of 2022 witnessed a 23% increase in computer services exports compared to the previous year, highlighting the sector's resilience [126]. However, the war has influenced the job market dynamics, with salary expectations decreasing and a marked increase in applications per position – an average of 12 candidates for one role. The Minister of Digital Transformation has noted the current need for 30,000-40,000 IT specialists to sustain the industry's growth trajectory [128, 129].

Ukraine's IT market is robust, with over 5,000 companies, including mid-size entities that thrive on government support, high-quality education, and collaborations between technical universities and IT firms. These companies, specializing in diverse programming languages and services, have been instrumental in positioning Ukraine as a top IT outsourcing destination globally.

The government's backing, particularly through tax incentives and educational initiatives, has been crucial in fostering a conducive business environment. Legal support in the form of simplified regulatory frameworks and protection mechanisms further bolsters the industry's stability and growth.

Looking ahead, the Ukrainian IT sector's resilience suggests a robust recovery trajectory. The demand for IT solutions for the domestic market is likely to surge, potentially altering the structure of the IT market. The move towards EU integration will likely enhance the product component of the IT industry, requiring improved legislation and investment support .

The efficacy of current business models in Ukrainian IT companies is a reflection of how these entities create value and sustain competitiveness in the global marketplace. Central to these business models is the ability to deliver high-quality services across a spectrum of IT domains and to specific industries. This specialization is anchored by the formation of skilled teams, both national and transnational, that ensure the delivery of such services.

The prevailing business models within the Ukrainian IT sector are primarily evaluated based on the average declared cost for an hour of project implementation work and the client base's breadth, ranging from small to large enterprises. Recent studies have shown that the main determinant of an IT product's value on the global market hinges on the number and quality of employees. For Ukraine, with its significant share of IT services being transnationally oriented, the proportion of locally registered employees also bears weight on this valuation.

A pivotal finding in assessing the effectiveness of business models is the observation that a wide dispersion in the range of services offered is not necessarily advantageous. On the contrary, focusing on a smaller set of specialized services, such as custom software development, web development, artificial intelligence, mobile app development, or exclusively on UX/UI design, is recommended. This focused approach allows companies to hone their expertise and deliver services that provide higher value.

Moreover, the sectors in which service consumers operate have a marginal influence on the work hour cost. Nevertheless, certain industries, notably financial services, medicine, e-commerce, IT, business services, and retail, are deemed preferable due to their profitability and alignment with the global market's demands.

Despite a 30% contraction in Ukraine's GDP in 2022, the tech sector persisted as the beacon of economic hope, generating \$7.34 billion in export

revenues—a 5% increase from the previous year. This not only signifies the sector's robustness but also highlights its role as a critical contributor to the national economy during crisis periods. The total revenue generated by the Ukrainian IT industry has seen a consistent upward trajectory from 2016 to 2023. Starting at \$1.88 billion in 2016, there has been a progressive increase each year, with 2023 projecting revenues at \$3.13 billion, suggesting robust growth despite the geopolitical challenges the country has faced [130].

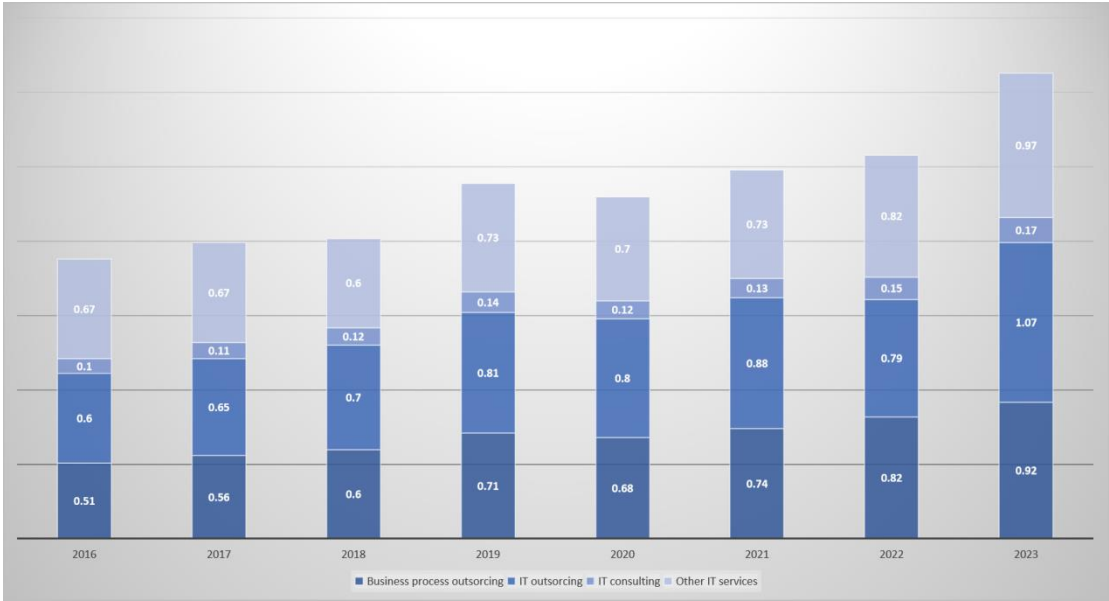


Figure 3.1 Revenue of Ukrainian IT industry by segment, bln USD

Source: Ukraine IT Report, Statista

Significant support from international agencies such as USAID has been instrumental in this growth. With nearly \$1.2 million in direct aid to the industry post-invasion, USAID initiatives have facilitated \$12.2 million in sales, attracted \$5.9 million in new private sector investments, and sustained employment for the sector's 285,000 specialists. This external financial injection has proven crucial in enabling Ukrainian IT companies to adapt, relocate, and continue operations in safer regions, ensuring the sector's survival and progression [131].

The Ukrainian government's recognition of the sector's potential has been reflected in its investment and support measures. Coupled with the global acknowledgment of Ukraine as the top outsourcing destination by the Global Sourcing Association and the skillset of over 200,000 high-skilled IT professionals, the industry's financial and investment models are evidently robust.

The Ukrainian IT landscape is characterized by its diversity, with over 4,000 tech companies ranging from nanotechnology and blockchain to AI and game development. The presence of 18 companies in the TOP 100 Outsourcing companies by the International Association of Outsourcing Professionals and the choice of Ukrainian IT services by more than 100 of Fortune 500 companies underscore the industry's global competitiveness [132].

In the context of the Ukrainian IT sector's structural and financial ecosystem, various practical ways for optimization can be identified. Each of these methods, however, carries inherent risks that must be quantified and managed to ensure successful implementation.

Practical ways for structural optimization:

- Decentralization and remote work models: As the conflict has necessitated a shift away from traditional office spaces, embracing remote work can reduce overhead costs. By leveraging tools for virtual collaboration, companies can maintain productivity. Risk: The challenge lies in preserving team cohesion and project management effectiveness [133]. There's a risk of reduced oversight and potential security vulnerabilities with distributed teams.
- Specialization in service offerings: Narrowing the range of services to areas where Ukrainian IT companies have a competitive edge, such as AI or blockchain, can streamline operations and enhance service quality. Risk: Over-specialization could lead to missed opportunities in other profitable sectors and vulnerability to market changes in specialized areas.

- Focusing on high-demand industries: Prioritizing sectors like financial services, healthcare, e-commerce, and retail that align with global market demands can optimize service relevance and pricing models. Risk: A sudden shift in industry trends or economic downturns in these sectors could disproportionately affect revenue streams.

Practical Ways for Financial Optimization:

- Diversification of revenue sources: Developing a mix of local and international projects can ensure steady cash flow and reduce dependence on any single market. Risk: Diversification can dilute focus and spread resources thin, potentially impacting the quality of output.
- Leveraging government and international aid: Utilizing support from entities like usaid for financial aid and sales generation can be vital, as evidenced by the \$12.2 million in sales facilitated post-invasion. Risk: Reliance on external aid can be risky if these funds are reduced or withdrawn, leading to a sudden financial shortfall [134].
- Investment in education and training: Partnering with educational institutions to develop a skilled workforce can maintain a competitive edge in quality of service. Risk: The investment in education might not yield immediate financial returns and could be at risk if the economic situation worsens, leading to decreased funding.

Creating a risk matrix involves assessing the likelihood of each risk occurring and the potential impact it would have on the organization. Below is a risk matrix for the Ukrainian IT sector's structural and financial optimization strategies.

Table 3.1 Risk matrix for Ukrainian IT sector's structural and financial optimization strategies

Risk Factor	Likeliho	Impact	Risk
-------------	----------	--------	------

	od		Level
Reduced oversight in remote work models	Medium	High	High
Security vulnerabilities with distributed teams	Low	High	Medium
Missed opportunities due to over-specialization	Medium	Medium	Medium
Market changes affecting specialized areas	High	High	High
Shift in industry trends affecting revenue streams	High	High	High
Diluted focus due to revenue diversification	Low	Medium	Medium
Financial shortfall due to reduced aid	Medium	High	High
Delayed returns on education investment	High	Medium	Medium

Source: Systematized by author

To manage these risks, IT companies should implement rigorous project management and communication tools for remote work. Strengthen cybersecurity measures and protocols for distributed teams. Maintain a diversified portfolio of services to hedge against over-specialization risks. Conduct regular market analyses to remain agile in the face of industry changes. Diversify revenue sources while retaining a focus on core competencies. Continue seeking and securing diverse forms of financial aid and investment. Invest strategically in education with a long-term view of talent development.

By proactively addressing these risks, Ukrainian IT companies can optimize their structures and financial models to withstand current challenges and secure sustainable growth.

3.2. Budgeting of potential strategies for increasing the competitiveness of Ukrainian IT product manufacturers

In the economic context, specific strategies to enhance the competitiveness of Ukrainian IT product manufacturers must be grounded in solid financial analysis and strategic foresight. The following strategies are proposed within my research, which outlined main strength of Ukrainian IT industry:

- **Investment in Research and Development.** To remain competitive, Ukrainian IT product manufacturers should allocate a substantial portion of their budget to R&D. This investment can lead to the development of innovative products that differentiate them from competitors [135]. An economic strategy for R&D investment involves leveraging tax incentives, government grants, and forming partnerships with universities for cost-sharing opportunities.
- **Capitalizing on Cost Advantages.** Ukrainian IT manufacturers have a competitive edge due to lower operational costs compared to many Western countries. By streamlining production processes and optimizing supply chains, these manufacturers can offer high-quality products at competitive prices, appealing to cost-sensitive segments of the global market.
- **Fostering a Skilled Workforce.** Investing in the workforce is essential for fostering innovation and improving product quality. Economic strategies here include creating training programs, offering competitive salaries to attract top talent, and investing in employee retention programs to maintain a skilled and motivated workforce.
- **Expanding Market Reach through Export Orientation.** To increase competitiveness, Ukrainian IT manufacturers should look to expand into new international markets. Economic strategies include utilizing export credits, participating in trade shows, and leveraging digital marketing to reach a wider audience [136].

We could try to measure success of these strategies using balanced scorecard framework. This framework helps to measure the performance of an organization from four perspectives: financial, customer, internal process, and learning and growth. Each perspective can be linked to specific objectives, measures, targets, and initiatives that support the overall strategy.

Table 3.2 Balanced scorecard analysis for Ukrainian IT sector's strength

	Investment in Research and Development	Capitalizing on Cost Advantages	Fostering a Skilled Workforce	Expanding Market Reach through Export Orientation
Financial perspective	The return on investment (ROI) of R&D projects, the revenue growth rate, and the market share of new or improved products or services.	The profit margin, the cost reduction, and the cash flow of the IT products.	The human capital return on investment (HCROI), the revenue per employee, and the employee turnover cost of the IT professionals.	The export revenue, the export growth rate, and the export profitability of the IT products.
Customer perspective	The customer satisfaction, loyalty, and retention rates, the number of new or repeat customers, and the customer feedback on the quality and	The price competitiveness, the value proposition, and the customer perception of the IT products.	The customer satisfaction, loyalty, and retention rates, the number of referrals, and the customer feedback on the professionalism and expertise	The market penetration, the market share, and the customer satisfaction, loyalty, and retention rates of the IT products in

	innovation of the products or services.		of the IT professionals.	foreign markets.
Internal process perspective	The efficiency and effectiveness of the R&D process, the time to market, the number of patents or publications, and the compliance with quality and ethical standards.	The operational efficiency, the productivity, the quality, and the risk management of the IT products.	The performance, the efficiency, the quality, and the innovation of the IT professionals.	The market research, the product adaptation, the distribution, and the customer service of the IT products in foreign markets.
Learning and growth perspective	The skills and competencies of the R&D staff, the investment in training and development, the employee engagement and retention rates, and the culture of innovation and collaboration.	The cost awareness, the continuous improvement, the best practices, and the benchmarking of the IT products.	The skills and competencies of the IT professionals, the investment in training and development, the employee engagement and retention rates, and the culture of learning and growth.	The market knowledge, the cultural awareness, the language skills, and the international partnerships of the IT professionals.

Source: Systematized by author

I analyzed financial data, funding possibilities and trends of the market and took as an example Ukrainian IT company SoftServe, one of the largest Ukrainian IT companies to calculate how much funding can be obtained through various ways of funding, based on some assumptions and estimates.

To fund R&D initiatives, SoftServe can utilize internal and external funding sources. Internally, allocating 10% of its net income towards R&D projects would result in a budget of \$16.5 million in 2023. Externally, exploring options like venture capital, business angels, and government grants, SoftServe could potentially secure an additional \$30 million from sources like the Ukraine Relief, Recovery, Reconstruction and Reform Trust Fund (URTF) and the International Monetary Fund (IMF). Total Budget for R&D: \$46.5 million.

For capitalizing on cost advantages in Ukraine, SoftServe can tap into internal cost savings and external funding [137]. Leveraging a 20% cost advantage could provide an internal budget of \$220 million. External sources, such as trade credit and leasing, might offer an additional \$150 million through agreements with entities like the URTF and the IMF. Total Budget for Capitalizing on Cost Advantages: \$370 million.

Funding strategies for fostering a skilled workforce involve internal revenue and external funding sources. Internally, SoftServe can allocate revenue differences, amounting to \$250 million, based on assumptions like a revenue per employee of \$100,000. Externally, seeking new partners, conducting a share issue, and obtaining government grants could potentially secure an additional \$200 million. Total Budget for Fostering a Skilled Workforce: \$450 million.

To support the expansion of market reach through export orientation, both internal and external funding avenues are available. Internally, utilizing export revenue could result in a budget of \$660 million, assuming a 50% product export rate and a 20% growth rate. Externally, SoftServe might secure an additional \$250 million through sources like export credit, insurance, and

subsidies from entities such as the URTF, IMF, and the Ukrainian government. Total Budget for Expanding Market Reach: \$910 million.

So, the economic enhancement of competitiveness for Ukrainian IT product manufacturers requires a strategic blend of financial analysis and foresight [138]. Proposed strategies, rooted in the strengths of the Ukrainian IT industry, encompass Investment in Research and Development, Capitalizing on Cost Advantages, Fostering a Skilled Workforce, and Expanding Market Reach through Export Orientation. Implementing these strategies can lead to substantial benefits for Ukrainian IT companies. The comprehensive adoption of these strategies collectively contributes to heightened competitiveness, global expansion, sustainable growth, and increased resilience for Ukrainian IT companies within the dynamic and competitive global market.

Conclusions

Based on the analysis of the objectives and the extensive research conducted, the following conclusions can be drawn about the strategy for increasing the competitiveness of Ukrainian IT companies on the world market:

1. Competitive landscape understanding: The global it market is dynamic and multifaceted, characterized by rapid technological advancements and a competitive environment. Ukrainian it companies, although equipped with skilled talent and innovation capabilities, must navigate this landscape strategically to enhance their competitiveness.
2. Core competitiveness factors: The study identified key competitiveness parameters in the it market, such as technological innovation, market adaptation, quality of services, and cost-effectiveness. Ukrainian it firms have strengths in several of these areas but need focused improvement in global brand recognition and market diversification.
3. Strategies for market entry: Optimal strategies for entering and establishing a presence in the global it market include leveraging niche specializations, fostering strategic partnerships, and embracing digital marketing and global networking platforms. Tailoring these strategies to specific target markets is crucial for effective entry and growth.
4. Internationalization priorities: The internationalization of the ukrainian it industry is pivotal. It requires an emphasis on aligning with international standards, engaging in global tech ecosystems, and actively participating in cross-border projects and collaborations.

5. Financial and structural optimization: For increased competitiveness, the financial and structural aspects of the ukrainian it sector must be optimized. This includes adopting efficient budgeting practices, securing investments, and encouraging government policies that support technological innovation and industry growth.
6. Role of transnationalization: The specifics of transnationalization of the ukrainian it market highlight the need for global outreach and integration. Ukrainian it firms must focus on global market trends, customer preferences, and international regulatory standards.
7. Positioning in the global market: Despite challenges, ukrainian it companies have significant potential to improve their position in the global market. With targeted strategies and government support, they can achieve substantial growth and recognition.
8. Future outlook: The prospects for ukrainian it companies in the global market are promising, provided there is a consistent focus on innovation, quality, and market adaptation. The evolving digital landscape presents numerous opportunities for growth and expansion.
9. Policy recommendations: For sustained growth and competitiveness, there is a need for supportive government policies, investment in research and development, and fostering of a robust ecosystem for it innovation and entrepreneurship in ukraine.

In conclusion, the research underscores the vast potential of Ukrainian IT companies in the global market. By strategically addressing the identified areas and leveraging their inherent strengths, Ukrainian IT firms can significantly enhance their competitiveness and establish a more pronounced global footprint. This advancement is not only beneficial for the IT sector but also crucial for the broader economic development and technological progress of Ukraine.

Abstract

In an age of relentless digital transformation and globalization, the information technology (IT) sector emerges as a pivotal force in global economic development and innovation. This thesis focuses on Ukraine's IT industry, a domain marked by its rich talent pool and burgeoning reputation for

innovation. Amidst a global IT market characterized by intense competition and rapid technological evolution, Ukrainian IT companies face the crucial task of strategically positioning themselves to enhance their global competitiveness. This research aims to provide a comprehensive theoretical and methodological framework to bolster the competitiveness of Ukrainian IT producers in the international arena.

The Ukrainian IT sector, known for its skilled workforce and competitive cost structures, has the potential to emerge as a global leader. To realize this potential, the study navigates the challenges of a rapidly changing global market. It underscores the economic benefits of increasing the IT sector's global market share, including revenue growth, job creation, and economic diversification. The research highlights how a competitive IT industry can attract foreign investment and stimulate technological advancement across various sectors in Ukraine.

The primary objective of this study is to dissect the dynamics of the global IT market and identify strategic pathways for Ukrainian IT companies to expand their international market share. The objectives include analyzing the competitive landscape, identifying key competitiveness parameters, developing strategies for market entry, assessing internationalization priorities, and evaluating structural and financial aspects crucial to enhancing competitiveness.

To achieve these goals, the study employs a combination of general scientific and specialized research methods. These include systematization and generalization for conceptualizing the market positioning of Ukrainian IT companies, along with analytical and synthetic approaches to examine market trends, competitiveness factors, and strategic planning. This comprehensive approach aims to provide actionable insights and strategies for Ukrainian IT companies to navigate the global IT market effectively, contributing to Ukraine's economic resilience and growth.

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**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
КИЇВСЬКИЙ НАЦІОНАЛЬНИЙ ЕКОНОМІЧНИЙ УНІВЕРСИТЕТ
ІМЕНІ ВАДИМА ГЕТЬМАНА**

ФАКУЛЬТЕТ МІЖНАРОДНОЇ ЕКОНОМІКИ І МЕНЕДЖМЕНТУ

МІЖНАРОДНИЙ ВИМІР ВІДНОВЛЕННЯ ЕКОНОМІКИ УКРАЇНИ

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Ways of increasing the competitiveness of Ukrainian producers on the world market

In today's globalized environment, competition is intensifying. Ukrainian producers, with their vast potential, grapple with maintaining a competitive edge. To address this, Ukraine is driving numerous digital transformation projects, aiming for a unified digital communication platform. This involves both private and government sectors, highlighting their commitment to modern tech trends. A key initiative is the Digital Transformation Road Map in the Agri-Food Project, supporting the food sectors in global digital integration [1, p. 3-4].

To thrive in the global IT market, companies must adopt advanced technologies and foster innovation. Delivering high-quality products, setting competitive prices, and being adaptable are paramount. In a world facing cyber threats, strong data protection measures are essential [2, p.11-17]. Additionally, Ukrainian IT firms can enhance their global presence through strategic alliances.

Key Ways for Enhancing Competitiveness

Value-Added Product Development: There's a pressing need for Ukrainian producers to transition from primary commodity suppliers to value-added goods manufacturers. This strategy aims to shift from basic to more complex products, enriching the product's intrinsic value. Such diversification and innovation incorporation can cater to diverse markets and mitigate single commodity export dependencies[3, p. 7-16].

Branding and Quality Assurance: Building a potent brand image is of paramount importance. The objective is to create a trustworthy and recognizable brand presence in global markets. By ensuring adherence to international standards and consistent quality, Ukrainian producers can instill a sense of reliability among global consumers. Championing the 'Made in Ukraine' narrative can carve a distinct market identity.

Trade Agreement Negotiations: By actively negotiating and inking free trade agreements with potential markets, this strategy focuses on leveraging diplomatic and economic ties to facilitate smoother trade. Ukrainian products can penetrate these markets with reduced tariffs and barriers[4, p. 259-265].

R&D and Skill Development: Investing in the future is critical. Infusing funds into research and development (R&D) can spearhead product innovation, making Ukrainian offerings more technologically advanced and attractive[5, p. 4-11]. Concurrently, initiatives like training programs and workshops to hone workforce skills ensure they meet global market requisites.

Regulatory and Legal Reforms: Streamlining the administrative processes can simplify business operations. The strategy emphasizes simplifying business regulations, tax structures, and cultivating a transparent entrepreneurial environment, acting as a magnet for both domestic and foreign investments[6, p. 571-577]. A resilient legal infrastructure safeguarding investors and intellectual properties can further inspire confidence in domestic producers and attract overseas allies.

Conclusion

A multi-pronged strategy is essential for Ukrainian producers to ascend the global competitiveness ladder. Concentrating on value addition, quality assurance, leveraging trade accords, infrastructure augmentation, and fostering a congenial business milieu can anchor Ukraine as a pivotal global market player. Such strides not only elevate exports but also underpin sustainable economic progression.

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