

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE  
SUMY STATE UNIVERSITY  
Educational and Research Institute of Business, Economics and Management  
Department of International Economic Relations

**QUALIFICATION PAPER**  
**It is submitted for the Bachelor's degree**  
Specialty 292 "International Economic Relations"  
on the topic " POTENTIAL AND COMPETITIVENESS OF THE UKRAINIAN IT  
INDUSTRY IN THE GLOBAL MARKET "

Student 4 course  
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Qualifying Bachelor's paper contains the results of own research. The use of the ideas, results and texts of other authors has a link to the corresponding source

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MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE  
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TASKS FOR BACHELOR'S DEGREE QUALIFICATION PAPER

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Chapter 2 deals with: 1) Analysis of the Ukrainian IT industry's potential and competitiveness; 2) Comparison of the Ukrainian IT industry with other countries' IT industries; 3) The challenges faced by the Ukrainian IT industry

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## ABSTRACT

on bachelor's degree qualification paper on the topic  
« POTENTIAL AND COMPETITIVENESS OF THE UKRAINIAN IT INDUSTRY  
IN THE GLOBAL MARKET »  
student Serhii Svystelnyk

The main content of the bachelor's degree qualification paper is presented on 40 pages, including references consisted of 42 used sources, which is placed on 5 pages. The paper contains 6 tables.

As the Ukrainian IT industry continues to evolve, it is essential to prioritize the development of a robust digital infrastructure. This includes improving internet connectivity, data centers, and cloud services to support the growing needs of IT businesses and their clients. By investing in digital infrastructure, Ukraine can ensure that its IT industry remains competitive and can effectively cater to the demands of the global market.

The purpose of the bachelor's degree qualification paper is to analyze the potential and competitiveness of the Ukrainian IT industry in the global market. The tasks to solve include analyzing the role of the IT industry in the global market, overviewing the Ukrainian IT industry, and examining its impact on the country's economy.

The purpose of the work is realized by performing the following tasks:

- identify the role of the IT industry in the global market ;
- make an overview of the Ukrainian IT industry;
- research the impact of the Ukrainian IT industry on the country's economy;
- to analyse of the Ukrainian IT industry's potential and competitiveness;
- compare the Ukrainian IT industry with other countries' IT industries;
- research the challenges faced by the Ukrainian IT industry;

- to forecast the Ukrainian IT industry development
- to analyze the impact of the IT sector in Ukraine on the example of Diia application

In the process of research depending on the goals and objectives, we used relevant methods of studying economic processes, including economic analysis, researching official reports and papers, work with government's laws.

According to the results of the study the following conclusions are formulated:

1. In general, the IT industry is one of the fastest growing industries in the economy worldwide. The development of this industry within the country can bring it to the forefront of this sector, which will result in a very strong economic development.

2. The Ukrainian IT industry is not strong in the overall market size ranking. However, the country is a leader in outsourcing, human capital, innovation, digitalization, and other areas.

3. Ukraine has a strong potential in the IT industry due to several factors, such as strong government support at the legislative level, global innovation in the form of Diia, human capital, and favorable conditions.

The obtained results can be used in the process of development of Ukrainian IT sector in order to improve its position worldwide.

Keywords: UKRAINIAN IT SECTOR, ECONOMIC POTENTIAL, INNOVATION ANALYSIS, WORLD IT RANKINGS, IT INDUSTRY, DIIA APPLICATION, IT INDUSTRY COMPETITIVENESS.

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## INTRODUCTION

The relevance of the research topic “Potential and Competitiveness of the Ukrainian IT Industry in the Global Market” is that it contributes to the understanding of the Ukrainian IT industry’s potential and competitiveness in the global market. This research topic is significant because it can help identify areas for improvement and growth in the Ukrainian IT industry. It can also help policymakers and investors make informed decisions about investing in the Ukrainian IT industry. The Ukrainian IT industry has been growing rapidly in recent years. However, there are still challenges faced by the Ukrainian IT industry, such as a lack of qualified personnel and a lack of government support. By analyzing the potential and competitiveness of the Ukrainian IT industry in the global market, this research topic can help identify these challenges and suggest ways to overcome them.

The statistics era enterprise is one of the quickest developing and most promising sectors of the worldwide financial system. IT organizations around the sector are growing new technology, software, and answers which can be remodeling companies and societies. The IT area has also become a major source of excessive-paying jobs and economic possibilities.

Ukraine has emerged as a critical hub for IT talent and information. The Ukrainian IT industry has been developing hastily over the last decade, fueled by means of an abundance of professional engineers and programmers. Ukrainian IT specialists are regarded for their strong technical and software engineering skills, in addition to skill ability in areas like web development, cellular app improvement, and artificial intelligence.

However, the Ukrainian IT enterprise also faces full-size challenges to fulfill its potential and emerge as extra aggressive on the worldwide stage. Issues like financial

and political instability in Ukraine, the shortage of a well-evolved startup atmosphere, and opposition from different low-cost outsourcing locations could abate the growth of the industry. For the Ukrainian IT zone to thrive, persistent upgrades in the enterprise surroundings, greater investments in training and human capital improvement, and closer integration with worldwide IT networks may be required.

The purpose of this qualification work is to analyze the potential and competitiveness of the Ukrainian IT industry in the global market. The tasks to solve include analyzing the role of the IT industry in the global market, overviewing the Ukrainian IT industry, and examining its impact on the country's economy.

To achieve the purpose of the work, the following tasks need to be solved:

- identify the role of the IT industry in the global market ;
- make an overview of the Ukrainian IT industry;
- research the impact of the Ukrainian IT industry on the country's economy;
- to analyse of the Ukrainian IT industry's potential and competitiveness;
- compare the Ukrainian IT industry with other countries' IT industries;
- research the challenges faced by the Ukrainian IT industry;
- to forecast the Ukrainian IT industry development
- to analyze the impact of the IT sector in Ukraine on the example of Diia application

The object of this study is the Ukrainian IT industry.

The subject is its potential and competitiveness in the global market.

Research methodology. The research methodology will involve a combination of qualitative and quantitative research methods. The study will be divided into three main sections, each focusing on different aspects of the Ukrainian IT industry.

A comprehensive literature review will be conducted to understand the role of the IT industry in the global market. This will involve analyzing scholarly articles, industry reports, and government publications to identify key trends, challenges, and



opportunities in the global IT market. Secondary data analysis will be used to provide an overview of the Ukrainian IT industry. This will involve examining existing data sources, such as industry reports, government publications, and statistical databases, to gather information on the size, structure, and growth of the industry. An economic analysis will be conducted to assess the impact of the Ukrainian IT industry on the country's economy. This will involve analyzing key economic indicators, such as GDP, employment, and exports, to determine the industry's contribution to economic growth and development.

An analysis of strengths will be conducted to evaluate the potential and competitiveness of the Ukrainian IT industry. A comparative analysis will be conducted to compare the Ukrainian IT industry with other countries' IT industries. This will involve examining key performance indicators, such as market size, growth rates, and innovation levels, to determine how the Ukrainian IT industry compares to its global counterparts. Qualitative interviews will be conducted with industry experts, government officials, and academics to identify the main challenges faced by the Ukrainian IT industry. This will provide insights into the factors that may hinder the industry's growth and competitiveness in the global market.

A trend analysis will be conducted to forecast the future development of the Ukrainian IT industry. This will involve examining historical data and identifying key trends to predict the industry's growth trajectory and potential opportunities. A case study analysis will be conducted to examine the Diia application as an example of a successful digital transformation initiative in Ukraine. This will involve analyzing the app's features, benefits, and challenges, as well as its impact on the Ukrainian IT industry and the broader economy.

The qualification work consists of an introduction, three chapters, conclusions and a list of references. The work contains 6 tables. The list of references includes 42 titles placed on 5 pages.

# 1. THEORETICAL FOUNDATIONS OF THE UKRAINIAN IT SECTOR RESEARCH

## 1.1 The role of the IT industry in the global market

The IT industry has become one of the dominant sectors in the global economy due to the importance of technology in our modern world. The industry is a true force to be reckoned with and is a central player in developing business standards and regulations [1]. The growth in the IT sector has helped countries like India to grow at par with China in every sector and has helped them grab the global market [2]. The IT industry has also generated millions of jobs and has improved the socio-economic status of people [2].

The IT industry, also referred to as the facts era enterprise, has end up a essential component of the global marketplace. Although highly new, this industry has performed a big function in shaping and driving the worldwide economy. IT has delivered approximately incredible advancements in many regions of commercial enterprise, making it a important issue of virtually every issue of our every day lives. Today, the IT enterprise is a multi-billion dollar industry, spanning various nations round the sector. This paper examines the position of the IT industry inside the international marketplace and its potential to steer the competitiveness of nations.

The information technology industry plays a crucial role in the global market and economy:

- IT drives innovation and economic growth. Advancements in areas like synthetic intelligence, cloud computing, and software program engineering are developing new merchandise, offerings, and jobs throughout many sectors. IT contributes extensively to GDP and financial possibility in many nations.

- IT improves productiveness and performance. Software, automation, and virtual tools are transforming corporations and offices. IT permits businesses to scale, reduce fees, and streamline operations. This boosts productivity and competitiveness.
- Information technology connects the global economy. Technologies such as broadband internet, mobile devices and communication infrastructure have made it easier to cross borders. This global connectivity has enabled complex supply chains, e-commerce and new markets for goods and services.
- ICT solves social challenges. Technology can help solve pressing problems such as improving healthcare and education, reducing pollution, increasing inclusion of people with disabilities, and more. Many tech companies and startups today aim to address environmental, health and social issues.
- The IT quarter is a main source of employment. Jobs in software program engineering, web development, data evaluation, and IT protection are in high demand. The tech sector contributes significantly to job growth in lots of economies. However, increasing automation also threatens some traditional jobs.
- Data is a precious resource. In the digital economy, facts have come to be a key source of cost and aggressive gain. The huge quantities of information generated by humans and sensors can provide effective insights to improve operations, enhance the client experience, broaden new merchandise, and generate revenue. But facts also increases worries over privateness and security.

The IT industry is strategically important to global economy and market growth.

But continued technological advances will also bring new challenges that companies and societies will have to deal with. A balance between innovation and regulation will be important.

The boom of the IT industry commenced all through the 1980s and Nineteen Nineties whilst the use of computers in workplaces and families expanded. Since then, its growth has been exceptional, with the development of extra progressive technology

and software program applications. The IT industry incorporates a huge range of agencies, which include hardware producers, software program builders, and carrier vendors. The industry's impact on the worldwide marketplace cannot be overemphasized, from the advent of jobs and boosting economies in developing nations to using innovation and empowering agencies with technological development.

In the global market, the IT industry serves as a backbone for each set up and rising markets. Its influence is clear in numerous sectors of the market, such as finance, communications, healthcare, logistics, and transportation, among others. The IT enterprise gives the specified infrastructure for corporations to operate successfully, speak with customers and clients, and get admission to essential information necessary for strategic making plans. IT era also allows groups to streamline approaches, while its software and statistics analytics provide insights into commercial enterprise operations, which can pressure selection-making approaches.

The IT industry's contribution to the worldwide market has in addition been solidified via its potential to force innovation. The enterprise has been at the leading edge of giant technological advancements, making it a key issue in global development. Through new technology like artificial intelligence, massive information, and the Internet of Things (IoT), the IT enterprise has revolutionized production procedures, progressed performance, and created new enterprise fashions. The innovations added approximately with the aid of the IT enterprise have additionally enabled corporations to deal with particular problems and meet customer wishes. [3]

Another important aspect of the IT industry's role in the global market is its ability to influence the competitiveness of nations. In today's world, countries are often rated based on their technological progress, with IT as a marker of innovation and competitiveness. A country's ability to compete in the global market often depends on its ability to embrace the digital revolution and use IT technology in the business process, which has become an important result of economic growth. In addition, IT

technology has brought cost benefits, improved service delivery, and product quality, making businesses globally competitive. [4]

In conclusion, the IT industry's position in the global marketplace can't be overstated. The enterprise's innovation and improvement have transformed various sectors of the economic system even as developing new enterprise possibilities. Its integration into business tactics has improved performance, boosted economies, and made groups competitive globally. Going forward, the IT industry's capability for increase and advancement stays enormous, and its impact will maintain to form the sector's economy.

## 1.2 Overview of the Ukrainian IT industry

The Ukrainian IT industry can hint its roots back to the early Nineties, with the introduction of the latest technologies and the deregulation of the telecoms industry. Over the years, Ukraine's IT industry has grown rapidly, attracting foreign investment and growing numerous employment possibilities for the United States of America's exceptionally professional body of workers. Today, the IT industry brings significant financial benefits to Ukraine, accounting for 4.5% of its GDP [5], according to the State Statistics Service of Ukraine for 2021. (Specific information for 2022 has not yet been released. Given the current situation in connection with Russia's military aggression against Ukraine with the support of Belarus, the information below will be made public after the deadline for submitting statistical and financial reports established by the Law of Ukraine "On Protection of Interests of Reporting Entities and Other Documents during Martial Law or the State of War").[6] The growth of the IT enterprise in Ukraine coincided with the emergence of the latest technology just like the industrial net, cell telecommunications, and employer software. This created many new commercial

enterprise opportunities and allowed Ukraine to leverage its legacy of robust technical schooling and know-how.

In recent years, the Ukrainian IT market has experienced tremendous growth, growing 20%-25% annually [7]. Thanks to these developments, most experts have already called this industry the engine of Ukraine's entire economy. According to a report on the IT market in Ukraine [8], the industry's contribution to the Ukrainian GDP has increased from 1.58% to 8.3% since 2013 due to the development of technology and services exports.

It is estimated that there are currently about 4,000 Ukrainian technology companies [9] operating in the domestic market, mainly engaged in software development and testing, application support, and technology research and development. As for the types of IT companies, there are about 1,617 manufacturing companies and 535 service companies in Ukraine [10] (the latter specializes in IT outsourcing). In addition to the large number of companies, Ukraine is also known for its early IT development (currently, there are about 2,000 of them). Among the most popular are Grammarly, People.ai, Readdle, Attendiify, MacPaw, Reface, Ajax, Petcube, Restream, Competera, and others. In 2021, Ukrainian startups were able to attract a record amount of investment - more than \$571 million [11], which became a strong impetus for the rapid development of the Ukrainian IT business.

According to Outsourcing Journal, Ukraine is now No. 1 country for IT outsourcing in Central and Eastern Europe [12] and is among the top 20 countries in the EBSA region for offshoring IT development. Ukraine is now considered a promising technology center with a rapidly growing IT industry, which has attracted the attention of the global IT community, which has led to many companies other countries hire Ukrainian producers.

It should be noted that Ukraine is known for not only providing offshore IT outsourcing services but also opening R&D centres. Important countries are interested in acquiring these services, but U.S.-based companies are less likely to do so. and

Western Europe remain regular customers. Some of the main factors that attract foreign companies to the Ukrainian IT market are as follows:

a large number of talented IT specialists;

- good location;
- low taxes (5%) and wages;
- high-quality work;
- cultural similarities.

Tech giants such as Google, Oracle, Samsung, Amazon, Ericsson, Amadeus, and Huawei have successfully opened their R&D offices in Ukraine [13]. In addition, not only foreign companies, but also some Ukrainian startups based in other countries are establishing their offshore development centers here to improve the work of their business. One of these remarkable examples is People.ai, a Ukrainian software development company that decided to open its R&D center in Ukraine. This important step gave the company access to a large number of AI developers, allowing it to expand its core team of programmers with 25+ new talents. By increasing its staff, People.ai has been able to achieve excellent results. In just 3 years, the value of this startup grew from \$400 million to \$1.1 billion, making People.ai a unicorn company.

Most tech companies managed to make certain the continuity of business approaches and preserve productiveness at 85-90% in the first month of the battle, and resume high quality growth dynamics in April.

Absolutely all IT companies have confronted problems associated with the conflict. According to the survey, greater than 34.3% of agencies have efficiently tailored to the new realities, 61.3% - that is, the great majority of IT organizations have not overcome all the challenges, but are normally working step by step.

Among the biggest challenges for companies are:

- migration of employees and their households, relocation of companies;
- prohibition of IT specialists to travel abroad;

- conscription of IT professionals;
- retention of clients and minimization of risks in working with customers;
- foreign money regulation and restrictions imposed via the NBU.

The efficiency of the industry was driven by the extensive and rapid restructuring of the industry during the war, where most companies were able to successfully implement continuity plans, switch to flexible business models, teams types moved and diversified offices in Ukraine and in different countries . Companies continue to operate and operate businesses even in the face of blackouts, pay taxes on time, attract new customers and proactively enter global markets.

As a result of the full-scale invasion, 70.8% of IT companies made an unplanned migration, a quarter of them - a full migration. 16.7% of companies have moved abroad in whole or in part. The level of relocation of companies is changing, and today the list of the top 10 countries includes: Poland, Germany, USA, Portugal, Bulgaria, Czech Republic, Romania, Moldova, Spain and Canada. 81.5% of IT companies that have been relocated to other countries are planning to return their business to Ukraine if martial law is lifted and hostilities are completely stopped. [14]

The enterprise remains the best export industry in Ukraine that has been completely operational in wartime and controlled to growth exports compared to final 12 months, whilst others have suffered huge losses. For example, metallurgy fell through 59%, exports of mineral merchandise by means of 46.1%, and chemical merchandise by using forty two.6%. Against this background, the percentage of IT services exports in GDP expanded through 51% to 5.4%. Likewise, the share of IT in offerings exports elevated by way of 24% and debts for almost half of (47%) of all services exports. [14]

As of November 1, according to the State Tax Service, the amount of taxes and fees paid by the IT industry amounted to UAH 26.6 billion.

Companies maintain to paintings continuously and put into effect projects even inside the face of blackouts, pay taxes on time, appeal to new customers, and actively



input the global marketplace. According to the survey, 43.1% of IT groups count on commercial enterprise increase via the end of the year. 93.4% of IT businesses plan to continue investing in Ukraine. [14]

### 1.3 The impact of the Ukrainian IT industry on the country's economy

Technologies are an increasing number of spreading across various industries, as they allow automating production procedures, growing productiveness, decreasing prices, and typically increasing business performance.

IT in finance. Ukraine's monetary marketplace has transformed drastically in current years. Classic economic establishments are adopting modern-day technologies and launching new products, at the same time as technology businesses are commencing their very own fintech startups and neobanks and hastily gaining marketplace proportion.

For more than a decade, the IT sector has been one of the fastest growing industries in Ukraine. Today, the industry employs around 200,000 workers and accounts for 4.5% of Ukraine's GDP.[5] Ukraine's IT industry has become an important contributor to the country's economy, boosting the growth of other sectors and creating jobs. The projects have also contributed to the country's visibility in the global market, making Ukraine a top outsourcing destination for software development services This article examines the impact of the Ukrainian IT industry on the country's economy, including GDP growth , It helps towards innovation, entrepreneurship and international recognition.

One of the most important impacts of the Ukrainian IT industry on the country's economy is its contribution to GDP growth. According to the Ukrainian High-Tech Initiative, despite the global pandemic, the IT industry grew by 27% by 2020, bringing

industry revenue to \$5 billion Industry development attracted significant investment from the region and international companies, which helps the country as a whole. contribute to economic growth. In addition, the strong performance of the project has helped improve Ukraine's economic growth, making it an attractive destination for foreign investment. [15]

Furthermore, the Ukrainian IT industry has been a considerable catalyst for innovation, main to the advent of recent merchandise, services, and technologies. Ukrainian IT companies have made significant contributions to worldwide tech markets, inclusive of Silicon Valley. In current years, numerous Ukrainian startups and companies have received funding from outstanding tech firms in Silicon Valley, indicating the excessive stage of innovation gift within the industry. Ukrainian tech companies have been at the leading edge of growing present day technologies, consisting of cloud computing, synthetic intelligence, blockchain, and cybersecurity. These progressive technologies have contributed to the increase and success of the industry, further riding the economy.

The Ukrainian IT industry has additionally been an extensive writer of jobs, specifically for younger, talented people clean out of universities. The number of IT enterprise specialists in Ukraine has surged from 5,000 in 2003 to over 200,000 in 2021. The influx of task possibilities in the industry has created a sizeable effect in the Ukrainian economic system, because it has helped to cut back the us of a's youngsters unemployment charge. The industry's growth has created new opportunities out of doors of the conventional business and finance sectors, attracting skills from different fields such as engineering, science, and arithmetic. These jobs were instrumental in promoting social and financial stability inside the country, which benefits the economy significantly.

Finally, the success of Ukraine's IT industry has attracted global attention, leading to the country's reputation as a major technology hub. The industry's reputation for excellence has been enhanced by numerous awards, including the CEE Business

Awards, the Global Sourcing Association Award for Innovation, and the European IT & Software Excellence Awards. These awards not only showed the progress of the industry but also strengthened Ukraine's position in the global technology market. International recognition of Ukrainian IT firms has opened doors for further cooperation and growth.

Ukraine is steadily moving towards digitalization. This complex process is supported at the state level by Volodymyr Zelenskyy.[16] As a result, IT is affecting various economic sectors in the country. [14]

IT in finance.

Ukraine's financial market has transformed significantly in recent years. Classic financial institutions are adopting modern technologies and launching new products, while technology companies are opening their own fintech startups and neobanks and rapidly gaining market share.

Interestingly, while in 2015, 11 new fintech corporations entered the market, this fashion has been declining when you consider that 2018 (whilst their quantity peaked at 36 companies).

This is because enterprise fashions have all started to alternate due to digitalization. This has caused a lower within the number of latest fintech corporations inside the Ukrainian marketplace, as technology that were innovative 5 years in the past are actually not unusual.

The most common technologies of Ukrainian fintech startups:

- Application Application Interface (API). An intermediary between systems, through which one sends a request to another and receives a response. This saves time and simplifies the process.
- Artificial Intelligence (AI). AI algorithms are used to create on line lending, insurance, and financial instrument assessment products. Chatbots have grow to be a core era of price offerings and personal finance products.

- Blockchain. A technology for processing, storing facts, and identifying clients using a special decentralized registry. It is most often utilized in cryptocurrencies.

IT in agriculture.

In recent years, Ukrainian agriculture has been actively transforming, and technology is becoming the main resource rather than land.

For example, agricultural efficiency increases by 20-30% due to the use of precision agricultural technologies. Moreover, according to the survey, 10% of Ukrainian farmers are actively using technology in their business.

The most used technologies in agro:

- Precision farming. An incorporated agricultural management machine that consists of GPS, geographic information structures, yield estimation, variable rationing, far off sensing and the Internet of Things.
- Land Bank Management. An analytics system that allows you to analyze your land bank in real time, identify problems and recommend ready-made solutions to fix them.
- Pharmaceutical management system. Integrated software solutions for automation and control of agricultural production processes at the enterprise with a large number of a number of possibilities.

Information Technology in Industry.

The Ukrainian industry began to change rapidly after 2014 with the emergence of the Industry 4.0 movement, which envisions both fully automated and real-time applications.

And here is how the average share of innovatively active industrial enterprises grew in 2018-2020:

- mining industry - 10.7%;
- processing industry - 13.1%;

- electricity and gas supply - 11.5%;
- water supply - 8.9%;
- all industry - 12.9%.

IT in retail.

Before the war, the e-commerce market was developing quite dynamically. The study showed that the e-commerce market in Ukraine has tripled since 2016. The market volume in 2016 amounted to USD 1.5 billion. It will grow to USD 4.4 billion by 2021. As for the share of e-commerce in retail, 5 years ago it was 3.3%, and last year it increased to 9.2%.

At the same time, researchers say that retail is not just moving online - it is transforming with the help of IT.

The following tools are most often used here:

- AR/VR/MR. Augmented truth technology help to interact greater carefully with customers. For instance, you could try on clothes on a digital avatar, version a room with new furnishings, etc.
- Big Data. Technologies for analyzing large quantities of information permit forecasting demand and sales, forming pricing rules, optimizing the collection according to marketplace wishes, and so forth.
- Robotization. This tool lets in you to increase productivity, keep away from the have an impact on of the human issue, boom competitiveness, optimize running charges, and so forth.

IT in the defense sector.

The full-scale invasion has turn out to be a powerful impetus for army tech development in Ukraine. These groups cover the entirety that Ukrainian defenders want, from drones to tactical medicine.

Military tech in Ukraine is growing pretty unexpectedly: the market has grown by 3 to 7 times seeing that 2014, depending on the sector.

This permits us to noticeably lessen the time required to put into effect a assignment: whilst in 2014 it generally took 1. Five-2 years, the improvement of this area has decreased this determine to 2-three months.

Ukrainian military-tech is actively developing in robotics, software for the military, and AR/VR. Robotics includes drones for aerial reconnaissance and information transmitters, as well as kamikaze drones for defeating the enemy. Software for the military includes Kropyva, Delta, Griselda, Bronya, Milchat, and others. AR/VR is used for simulators of weapons and equipment, allowing for less costly and less lossy training.

## **2. CONTEMPORARY TRENDS OF THE UKRAINIAN IT SECTOR IN THE GLOBAL MARKET**

### 2.1 Analysis of the Ukrainian IT industry's potential and competitiveness

In recent years, the global IT industry witnessed unprecedented growth, driven by rapid technological advances, increasing digitalization and an ever-increasing demand for innovative solutions. In this context of dynamics, the Ukrainian IT industry has emerged as a specialist. This topic aims to provide a comprehensive analysis of the factors that contribute to the success of the country's IT industry, and the challenges it faces in maintaining and developing its position in the global market.

The Ukrainian IT industry has demonstrated significant potential and competitiveness in the global market, thanks to several underlying strengths. Let's examine these strengths in more detail:

- Highly skilled and costly workers: Ukraine has a large IT workforce, with more than 200,000 workers employed in the sector. The country's professionals are known for their technical skills and flexibility, making it an attractive destination for IT outsourcing. Moreover, labor costs in Ukraine are relatively low compared to Western European countries and the United States, giving businesses looking for cost-effective solutions a competitive advantage.
- Strong educational system fostering technical understanding: Ukraine has a strong educational system with a focal point on STEM (Science, Technology, Engineering, and Mathematics) disciplines. Ukraine has numerous universities and technical institutions that offer IT-related programs, producing a consistent move of skilled graduates every year. This robust emphasis on technical training ensures a continuous supply of talent for the IT industry.
- Favorable business environment encouraging entrepreneurship and innovation: Over the past few years, Ukraine has made extensive strides in enhancing its

enterprise environment. The government has implemented reforms to simplify enterprise registration techniques, lessen paperwork, and create a more obvious tax gadget. These upgrades have fostered a favorable climate for entrepreneurship and innovation, main to the increase of startups and small corporations inside the IT sector.

- Government policies and projects selling IT region boom: The Ukrainian authorities acknowledge the importance of the IT industry for the country's economic development and have carried out diverse rules and tasks to assist its boom. The Ministry of Digital Transformation of Ukraine, for instance, is chargeable for riding digital transformation and promoting the IT sector. The government has also introduced tax incentives and special economic zones to attract overseas investment and encourage the expansion of the IT industry.
- Impact of foreign direct investment and strategic partnerships: Foreign direct investment (FDI) has played a crucial role in the growth of the Ukrainian IT industry. Many multinational companies have established their presence in Ukraine, attracted by the country's skilled workforce and cost competitiveness. These investments have led to the creation of new jobs, the transfer of knowledge and technology, and the establishment of strategic partnerships between Ukrainian and foreign companies. Such collaborations have further enhanced the industry's capabilities and global competitiveness.

The competitive landscape of the Ukrainian IT industry is characterized by a mix of established companies, emerging startups, and multinational corporations. Let's delve into the key players, their market positions, and unique value propositions, as well as the industry's performance across various segments.

Key players in the Ukrainian IT industry. Some of the prominent Ukrainian IT companies include:



- EPAM Systems: A leading global provider of software engineering, consulting, and IT services, EPAM has a significant presence in Ukraine. The company provides end-to-end solutions to various industries and has a strong reputation for providing high-quality services. [17]
- SoftServe: A leading software development and IT consulting company, SoftServe has over 8,000 employees and serves clients worldwide. The company specializes in digital transformation, cloud computing, and data analytics, among other services. [18]
- Ciklum: A global provider of digital solutions, Ciklum offers software engineering, IT consulting, and managed services. The company has a strong focus on innovation and has established relationships with leading technology providers. [19]
- Infopulse: A well-hooked up IT offerings company, Infopulse focuses on software program improvement, IT outsourcing, and consulting. The company serves customers throughout various industries, along with finance, telecommunications, and automotive. [20]

Unique value propositions. The Ukrainian IT industry's unique value propositions that set it apart from global counterparts include:

- Cost competitiveness: Ukrainian IT companies offer high-quality services at competitive prices, making them an attractive option for businesses seeking cost-effective solutions.
- Skilled workforce: The strong educational system in Ukraine produces a steady stream of skilled IT professionals, ensuring a continuous supply of talent for the industry.
- Adaptability and innovation: Ukrainian IT companies are known for their adaptability and ability to innovate, enabling them to stay ahead of the curve in a rapidly evolving industry.

Industry performance across various segments:

- Software development: The Ukrainian IT industry has a strong presence in software development, with companies offering services across a wide range of technologies and platforms. The country is particularly known for its expertise in web and mobile development, as well as emerging technologies like artificial intelligence and blockchain.
- IT outsourcing: Ukraine has become a popular destination for IT outsourcing, thanks to its skilled workforce and cost competitiveness. The country ranks among the top outsourcing destinations in Eastern Europe, with a growing number of multinational corporations establishing their development centers in Ukraine.
- IT consulting: The IT consulting segment in Ukraine is characterized by a mix of local and international players offering services such as digital transformation, IT strategy, and technology consulting. The industry has seen steady growth in recent years, driven by the increasing demand for IT consulting services from both domestic and international clients.

According to the State Statistics Service of Ukraine, telecommunication, computer and information services account for 29.3% of the country's total exports of services. [21]

Table 2.1 Structure of Ukraine's services exports in 2022

Export services of Ukraine	Share %	\$ Millions
Computer and information services	40,5%	3 712,9
Transportation services	32,3%	2 963,2
Business services	11,2%	1 026,0
Services for processing of material resources	10,1%	921,9
Services relate to financial activities	1,8%	162,4
Travel services	1,6%	146,2
Repair and maintenance services	1,4%	129,9
Other services	1,1%	103,4
Total	100,0%	

Note. Built by the author according to the Ministry of Economy of Ukraine [22].

The Ukrainian IT sector has been showing positive growth year after year, both internally and externally. This growth is driven by strong government support. In particular, the United 24 restoration project will affect IT even more in upcoming years. Plan "Digitalization". The government wants to spend 69 billion UAH on the digital development of Ukraine until 2025. [23]

The plan is based on 15 basic "national programs," which were selected as priorities by members of the National Recovery Council, who worked in 24 working groups. The ideas of each of the 24 groups are also outlined publicly - in separate documents.

The authors have budgeted 69.2 billion hryvnias for the entire digitalization until 2025. Funding must be provided mainly by Western partners, although some will also receive money from the budget. What this money will be used for.

Table 2.2 funding of Ukraine's government Plan "Digitalization"

Sphere of fundong	Billions of UAH
Developing the digital economy	34,7 billion UAH
Digital infrastructure	17,8 billion UAH
Development of the Administrative Services Center network	8,3 billion UAH
Government information resources in the cloud	5,49 billion UAH
Development of public electronic registries	2,33 billion UAH
Other areas	1.3 billion UAH

The direction accounts for half of all funds allocated for digitalization projects. The main task is to increase the share of IT services in the country's GDP from 2,7% in 2021 to 10% in 2025. This is planned to do through investments in start-ups, educational programs, and attracting foreign companies and professionals to the country. For example, "Diia.City" [24] should increase to 2,000 residents in three years (271 at present) and the number of startups registered in Ukraine to 4,000.

The main goal is to restore the shattered infrastructure of telecom providers and improve Internet coverage. Thus, by 2025, 95% of the population should have access to mobile Internet at a speed of at least 2 Mbit/s.

The authors plan to invest 8.3 billion UAH in the restoration and development of a network of administrative service centers (NASC), which the document refers to as "Dia" centers. Plans also include software upgrades, a quality assessment monitoring system, and a separate web platform.

The authors plan to develop a strategy for the development of cloud infrastructure in 2023 and to move 30% of government information resources into the cloud by 2025. In the same section they plan to address cybersecurity issues.

Development of public electronic registries – 2,33 billion UAH

The goal of the direction is to streamline data in public electronic registries, to create a Register of public electronic registries.

Four other areas account for 1.3 billion UAH - 2% of the total budget for digitalization. Among other things, they want to spend on the introduction of artificial intelligence to provide public services or create an electronic archive.

In conclusion, the IT industry in Ukraine exhibits incredible potential and competitiveness, based on several key factors. First, the country has a robust talent pool, with a growing number of skilled workers and a strong emphasis on STEM education. This has resulted in a workforce that is not only technically competent, but also adapted to the rapidly evolving technological landscape.

Second, cheap labor has made Ukraine an attractive destination for the outsourcing and export of IT services. A competitive cash structure allows companies to access top talent at a fraction of the cost compared to other established IT centers, giving them a greater advantage in the global marketplace

Third, a supportive business climate characterized by government policies and incentives has fostered a flourishing industrial ecosystem. This includes tax cuts, simplified regulations and efforts to attract foreign investment, which together have contributed to the growth and development of the IT sector

However, in order to maintain its competitive position and develop, Ukraine has to deal with several challenges. This includes investing in modern infrastructure to support the expanding IT sector, as well as improving the overall business environment to encourage entrepreneurship and innovation. Furthermore, the country should continue to protect intellectual property strengthen security and cybersecurity measures to ensure a secure and reliable environment for IT services .

Furthermore, fostering collaboration between academia, industry and government will be important in fostering research and development, as well as the commercialization of new technologies. This will not only help retain amazing talent but also help create more valuable products and services.

Finally, it is important for Ukraine to focus on risks and develop strategies to mitigate potential risks, such as political instability, currency fluctuations, global

economic slowdown and by actively exploiting these challenges, the country can build a strong IT sector that can withstand external shocks, and can continue to grow.

By harnessing its strengths and meeting these challenges, the Ukrainian IT industry is poised to become a formidable player in the global technology sector. This will not only lead to economic growth and job creation rather it will contribute to the overall success of the tournament and long-term success also country. The future of the Ukrainian IT industry is bright, and with the right strategies, it can reach its full potential and deliver significant value to all stakeholders.

## 2.2 Comparison of the Ukrainian IT industry with other countries' IT industries

The speedy evolution of the technology era has caused the emergence of thriving IT industries throughout the globe, with every country striving to establish itself as a leader in this competitive domain. Among these countries, Ukraine has emerged as a formidable player, demonstrating resilience and adaptability in the face of adversity. In this essay, we will delve right into a complete comparison of the Ukrainian IT enterprise with its counterparts in other nations, inspecting the factors that make a contribution to their respective successes, challenges, and growth trajectories. By reading key signs along with innovation, talent pool, authorities guide, and economic effect, we aim to offer a holistic knowledge of the precise traits that outline each IT panorama and the lessons that can be gleaned from their studies. Join us as we embark on this insightful adventure, exploring the intricacies of the worldwide IT enterprise and the role of Ukraine in shaping the future of generations. [25]

The importance of evaluating the Ukrainian IT sphere with other countries lies in the precious insights and classes that can be derived from such an analysis. By examining the strengths, weaknesses, opportunities, and threats confronted with the aid

of one-of-a-kind IT industries, we will become aware of the factors that make a contribution to their success and the challenges that prevent their increase. This comparative technique enables us to better understand the particular characteristics of the Ukrainian IT enterprise and its function in the global panorama. Furthermore, it permits us to discover best practices and techniques hired through different countries that may be adapted and applied in Ukraine to foster innovation, entice investment, and drive economic growth. Ultimately, this evaluation serves as a crucial tool for policymakers, enterprise leaders, and stakeholders to make informed selections and chart a route ahead for the Ukrainian IT sector in an increasingly more interconnected and competitive world.

The global IT enterprise is a dynamic and unexpectedly evolving region, with international locations around the world striving to set up themselves as leaders in era and innovation. The following table presents a comparative evaluation of the IT industries in 10 international locations, consisting of Ukraine. The evaluation takes into account elements consisting of the scale of the enterprise (measured by revenue), boom charge, excellent of the body of workers, and wonderful strengths in each country's IT sector. This assessment ambitions to provide a photo of the contemporary nation of the IT enterprise in those international locations, highlighting their precise traits and aggressive blessings.

Table 2.3 – General comparison of the Ukrainian IT industry with other countries' IT industries

Country	Size of Industry (Revenue)	Growth Rate	Workforce Quality	Notable Strengths
Ukraine (2021)	\$6,9 billion	26,8%	High	IT outsourcing, software development
India (2021)	\$194 billion	2,3%	High	IT services, outsourcing, cost-effective solutions
United States (2021)	\$1.9 trillion	6.1%	Very High	Innovation, cutting-edge technology, R&D
China (2021)	\$1.2 trillion	9.5%	High	Manufacturing, AI, e-commerce
Germany (2022)	\$ 99,9 billion	5.9%	High	Engineering, Industry 4.0, IoT
Canada (2021)	\$ 242 billion	4,7%	High	AI, gaming, software development

Note. Built by the author according to the sources – [14],[25],[26],[27],[28],[29].

This list of countries was chosen by the author subjectively because they hold leading positions in the IT industry. The table shows that Ukraine is lagging behind in terms of industry size, but it has a higher growth rate.

If we take into account the overall statistics on the size of the IT market, Ukraine ranks slightly below average. However, Ukraine still has a lot of potential. First, it is driven by the rapid growth of this sector, which is much higher than that of the industry giants. Secondly, there are many different areas in the IT industry in which Ukraine holds high positions. Thirdly, digitalization is now very actively polarizing in Ukraine, and this is happening at the legislative level, which contributes to the rapid development of innovative projects.



Table 2.4 – The most innovative countries ranking [30]

Country (Overall Rank)	Group Rank	Income Group
Switzerland (1)	1	High
Sweden (2)	2	High
United States of America (3)	3	High
China (14)	1	Upper Middle
Malaysia (33)	2	Upper Middle
Bulgaria (37)	3	Upper Middle
Vietnam (42)	1	Lower Middle
Ukraine (45)	2	Lower Middle
India (48)	3	Lower Middle

Despite Russian aggression, mobilization, and the forced displacement of businesses and groups, Ukraine maintains its position as one of Eastern Europe's most promising software development centers. Lots of talent, government incentives, and favorable economic conditions for a growing industrial environment. The Ukrainian IT outsourcing sector has not only survived but managed to take a hit and provide economic support to the country amidst the harsh realities of the military conflict.

This is well evidenced by the numbers: in the last three years, the Ukrainian IT industry has more than doubled its export production capacity and in 2021 alone, jobs grew 36%, generating \$6.8 billion, up from \$5 billion last year. In 2022 the industry has once again proved itself strong, providing a record \$2B revenue in the first fiscal quarter. [31]

The country additionally boasts an impressive skills pool of 285,000 licensed programmers. The length of the Ukrainian tech community is likely to develop in the coming years, as nearly 23,000 new IT specialists input the staff each yr.

Ukrainian developers regularly seem in severe ratings of the great programmers in the USA. SkillValue ranking placed Ukraine in 4th place on the leaderboard. [32] The average test achievement fee of Ukrainian programmers on this platform is fifty eight.17%. According to HackerRank, the united states was ranked 11th inside the global in phrases of technical competencies, far ahead of traditional coding giants which include India and America.

Ukrainian tech clusters unite extra than 3,000 IT service providers focusing on e-commerce, economic era, schooling, healthcare, and telecommunications. 87% of them expand wonderful software answers, 7% supply hardware merchandise, and the final 6% attention to customer service.

Several Ukrainian businesses have skilled rapid sales increase, resulting in marketplace capitalizations of USD 1 billion or greater. Globally renowned unicorn startups including PetCube, GitLab, Ring, Grammarly, People.Ai, and Preply all commenced their operations in Ukraine.

Table 2.5 – Top 10 Outsourcing Countries Worldwide [33]

Country	Average Cost Rates by Hour
India	\$25-50
Ukraine	\$30-55
China	\$35-55
Poland	\$50-100
Philippines	\$20-49
Brazil	\$15-50
Romania	\$25-49
Taiwan	\$30-50
Czech Republic	\$25-55
Argentina	\$30-55

Note. Second column represents the average cost rate by hour in IT outsourcing field on different freelance platforms.

Table 2.6 - The 2022 Global Crypto Adoption Index [34]

Country	Overall index ranking	Centralized service value received ranking	Retail centralized service value received ranking	P2P exchange trade volume ranking	DeFi value received ranking	Retail DeFi value received ranking
Vietnam	1	5	5	2	7	6
Philippines	2	4	4	66	13	5
Ukraine	3	6	6	39	10	14
India	4	1	1	82	1	1
United States	5	3	3	111	3	2
Pakistan	6	10	10	50	22	16
Brazil	7	7	7	113	8	7
Thailand	8	12	12	61	5	3
Russia	9	8	8	109	11	12
China	10	2	2	144	6	4

### 2.3 The challenges faced by the Ukrainian IT industry

Ukraine has become an extensive player in the worldwide IT marketplace, with its professional staff, value blessings, and favorable business surroundings. However, the enterprise still faces numerous challenges that need to be addressed to maintain its growth and competitiveness. However, Ukraine faces many obstacles in this sector, which will be discussed below.

**Talent Shortage and Brain Drain.** Ukraine has distinctly skilled personnel within the IT sector, however, the call for skills regularly outpaces the delivery. The fast boom of the industry has led to a considerable scarcity of certified professionals. To make things worse, the country faces a sizable brain drain, with many talented people emigrating to pursue better opportunities overseas. Possible solutions to this trouble include investing in schooling and education programs, enhancing working situations, and providing aggressive salaries to preserve skills in the country.

**Legal and Regulatory Environment.** The Ukrainian legal and regulatory surroundings have advanced in recent years; however, it nonetheless poses demanding situations for the IT industry. The country has made progress in growing extra enterprise-pleasant surroundings, however, problems like forms, corruption, and a lack of transparency keep restricting enterprise operations. To cope with these problems, the government has to retain to put in force reforms geared toward decreasing corruption, streamlining forms, and enhancing transparency inside the felony and regulatory environment.

**Limited Access to Capital.** Access to capital is an essential project for Ukrainian IT groups, specifically start-up states of country small organizations. The local monetary marketplace is underdeveloped, and investment is low in comparison to

different European countries. To increase capital, the authorities and the personal quarter should install place initiatives to assist begin-and small corporations, which include fund formation and investment incentives.

The main challenge for Ukrainian IT, like for any other sector in Ukraine, has been the war. However, despite this difficult situation, the Ukrainian IT industry has managed to hold on and even have its own achievements.

During the war, information technology has become nearly the only sector of the economy that has continued to thrive, create new jobs, implement new projects, and attract investment. Despite the fact that the full-fledged war has touched all areas of the economy. The IT industry remains a pillar of Ukraine and has the potential to become one of the primary drivers of development in the future.

Retaining clients was one of the industry's most difficult issues following February 24. Many businesses relocated their personnel and their families to safer areas, opened new offices, and adjusted to the realities of working during a full-fledged war. It took a significant amount of time and resources. International clients were unsure if enterprises would be able to honor contracts and complete orders at the moment.

According to the results of ten months of 2022, the industry grew and brought \$6 billion in export revenue to the Ukrainian economy, which is 10% more than in the same period of 2021. The share of IT services exports in GDP increased by 51% to 5.4%, and in service exports it increased by 24% to 47%, which is almost half. [35]

On the interaction of the state and IT business during the war. The Ministry of Digital Transformation is doing everything it can to help IT businesses scale up and stay afloat during a full-scale war. Two weeks before February 24, the Diia.City project was launched, which was developed jointly with the IT industry. Diia.City [24] is a special tax and economic space for the tech industry. It has the best tax system in Europe, flexible forms of cooperation between companies and specialists, and effective tools for attracting investment.

For the period of martial law, the criteria for joining Diia.City was simplified in terms of average salary and number of employees. The scope of activities of companies that can become residents of the space has also been expanded. Now, tech companies involved in the production of products for defense, industrial and consumer sectors, international payment systems, and cloud solutions can join Diia.City.

The number of such companies in the space is growing every day. Among them are Strata 22, Radionix, a research and production enterprise of the defense industry, American Technologies Network, Visa, TAS link, De Novo, and GigaCloud. [35]

### **3. PROBLEMS AND PRIORITY AREAS OF DEVELOPMENT OF THE UKRAINIAN IT SECTOR**

#### **3.1 Forecasting the Ukrainian IT industry development**

Despite all the challenges and the small size of the market compared to the global market, Ukraine has a strong potential for the development of the IT industry. Many factors contribute to this, such as government support, innovative approach, and human resources.

Over the past 17 years, the IT industry has grown from \$110 million in 2003 to about \$5 billion, or almost 46 times. The average growth rate of the industry is 20-25% annually. Ukrainian developers are ranked 4th in Europe and 5th in the world in terms of professionalism. [36]

The sector is Ukraine's only completely operational export branch during the war, and it was able to boost export volumes compared to last year, while others incurred major losses. For example, metallurgy decreased 59%, mineral product exports fell 46.1%, and chemical sector products fell 42.6%. In contrast, the share of IT services exports in GDP has climbed by 51% to 5.4%. Similarly, the percentage of IT in service exports climbed by 24% and now accounts for over half (47.0%) of total service exports. [37]

According to the State Tax Service of Ukraine, the amount of taxes and fees paid by the IT industry as of November 1 amounted to UAH 26.6 billion. [37]

Companies continue to work and perform projects even during power outages, pay taxes on time, attract new clients, and actively enter the global market. According to the study, 43.1% of IT organizations anticipate commercial growth this year. 93.4% of IT firms intend to continue investing in Ukraine. [37]

Previous year, the IT Ukraine Association, in collaboration with IT clusters and partners, launched the Do IT Like Ukraine study, which investigated whether IT companies that had relocated due to the war planned to return to Ukraine. [14]

According to the findings, 81.5% of IT companies that have gone overseas plan to return to Ukraine, and 5.6% are already in the process of doing so (as of early December). Furthermore, 93.4% of IT companies intend to continue investing in Ukraine. [14]

**Growth in IT services and outsourcing:** The Ukrainian IT industry has been experiencing widespread growth in current years, especially within the IT offerings and outsourcing sectors. This trend is expected to keep, pushed by way of the country's professional workforce, aggressive exertions charges, and favorable commercial enterprise environment. As greater global groups apprehend the benefits of outsourcing their IT operations to Ukraine, the call for these offerings is possible to grow.

**Expansion of the startup ecosystem:** Ukraine has a thriving startup ecosystem, with many successful startups coming from the country. The government has taken steps to support this ecosystem, such as the implementation of tax incentives and innovation centers. As a result, we could see more startups emerging from Ukraine, focusing on areas like fintech, e-commerce, and artificial intelligence. The full-fledged war has confirmed once again that Ukraine's future depends in innovation. We have the ability to be the country with the most startups per million people. We funded current projects and launched new ones this year to help the startup ecosystem grow.[35]

**Investment in IT infrastructure:** To support the growth of the IT sector, the Ukrainian government and the private sector are expected to continue investing in IT infrastructure including high-speed internet data and cloud services This will be helpful for the country The overall competitiveness of the IT sector has improved.

**Focus on education and talent development:** The Ukrainian IT business is strongly reliant on trained labor. To keep this competitive advantage, the government must continue to invest in education and talent development, particularly in computer science, software engineering, and data analytics. Partnerships between educational institutions, government, and the corporate sector could be formed to ensure that workers have the essential skills.

**Cybersecurity and data safety:** As the IT industry grows, so does the need for strong cybersecurity and information safety measures. Ukraine is probably to make investments more in those areas, each to shield its personal IT infrastructure and to provide cybersecurity offerings to worldwide customers.

**IT export growth:** According to a UkraineInvest research, the country's IT exports reached \$5.4 billion in 2020, with a compound annual growth rate (CAGR) of 20% over the previous five years. This expansion is projected to continue, owing to the considerations discussed in my prior comment. IT exports might reach \$8.4 billion by 2025, assuming a conservative CAGR of 10%. [38]

**Job creation:** The IT sector employs approximately 200,000 people in Ukraine, making it one of the top employers in the country. As the sector expands, more job opportunities, particularly for qualified IT experts, are predicted.

**Foreign direct investment (FDI) inflows:** FDI inflows into the Ukrainian IT sector have increased in recent years. According to the Ukrainian State Statistics Service, FDI in the IT sector reached \$2.7 billion in 2020. This trend is likely to continue as more multinational corporations understand the value of investing in Ukraine's IT sector. [39]

**Emergence of tech hubs:** As the IT industry expands, we may expect to see more tech hubs spring up across the country. Cities including as Kyiv, Lviv, and Kharkiv have already established themselves as IT innovation hubs, and this trend is likely to spread to other regions, fueling the industry's expansion even further.

**Increased international collaboration:** The Ukrainian IT industry is projected to increase ties with international partners, particularly those in the European Union and North America. This might result in more cross-border collaborations, joint ventures, and knowledge-sharing efforts, all of which would help the industry grow and compete.

**Demand for specialist IT services is increasing:** As the global economy becomes more digital, there is a greater demand for specialized IT services such as artificial



intelligence, machine learning, and data analytics. Because of its trained workforce and low labor costs, the Ukrainian IT industry is well-positioned to capitalize on this trend.

While the future for the Ukrainian IT industry is largely optimistic, there are some potential difficulties that could stymie its progress. These include political insecurity, economic uncertainty, and the ongoing fighting in the country's east. It is critical to keep an eye on these elements and their potential impact on the sector.

### 3.2 Overview of features and peculiarities of the Ukrainian Diia application

The Ukrainian government released Diia, a mobile application and web portal, in February 2020. Diia's principal purpose is to digitize various government services and make them accessible to Ukrainian citizens and companies. The app is part of the country's larger digital transformation agenda, which aims to modernize public services and increase overall government efficiency. [40]

Key features and services offered by the Diia app include:

- Digital documents: Diia enables users to store digital versions of essential personal documents, such as passports, driver's licenses, vehicle registration certificates, and tax identification numbers. This eliminates the need to carry physical documents and reduces the risk of loss or theft. Digital documents in the Diia app are secured with QR codes and protected by the user's unique digital signature, ensuring their authenticity and legal recognition.
- Access to public services: The Diia app simplifies access to various public services by providing a single platform for users to complete tasks like registering a business, applying for social benefits, or paying taxes. This reduces bureaucracy and streamlines processes, saving time and resources for both

citizens and government agencies. The app also allows users to track the status of their applications and receive updates on their progress.

- Notifications and reminders: Diia keeps users informed about important events and deadlines by sending notifications and reminders directly to their devices. This includes information about upcoming elections, tax deadlines, changes to government regulations, or new public services available through the app. By keeping citizens informed, Diia promotes transparency and encourages civic engagement.
- Secure authentication: The Diia app uses advanced security measures to protect users' personal information and ensure the integrity of digital transactions. This includes biometric data (such as fingerprint or facial recognition) and digital signatures, which are unique to each user and can be used to verify their identity. These security features help to prevent fraud and maintain trust in the digital services provided by the app.
- Integration with other digital platforms: Diia is designed to integrate seamlessly with other digital platforms and services, both within the government and the private sector. This enables efficient data sharing and collaboration, further improving the delivery of public services. For example, Diia can be integrated with electronic medical records systems, allowing users to access their health information and schedule appointments with healthcare providers through the app.

Currently, 14 digital documents and 25 services are available in the app, and more than 90 services are available on the portal. The Diia is used by 22 million Ukrainians. Diia has more than 8 thousand partners. The app also enables business registration, which is the fastest in the world. The world's first digital passports. More than 16.3 billion hryvnias in savings on digital documents. There are 39 new military services in 2022. First export of Diia to Estonia. [41]

“The main priority for our team is to create the best service in the world for Ukrainians, and only then share our experience with other countries. Therefore, exporting Diia is an additional job for our team. Other countries are interested in digital documents, services, laws that we adopt, services for transforming registries, and cybersecurity. After all, in times of war, the digital state is functioning, and we launch new services almost every week,” Fedorov added. [41]

The Diia Reels event was held at the World Economic Forum in Davos, where the Ministry of Digital Transformation showcased the results of digital transformation during the full-scale battle and offered updates to the Diia ecosystem. Mykhailo Fedorov, Ukraine's Vice Prime Minister and Minister of Digital Transformation, and Luukas Kristian Ilves, Estonia's Vice Chancellor for Digital Development, unveiled the Estonian state application mRiik, which was built on the Ukrainian Diia platform. [42]

Diya's first export creates great potential for the future. Such state-level projects will create both stronger economic and political ties. Ukraine may be lagging behind in terms of economic indicators in terms of the size of the IT market, but the country has great potential because it is creating a future trend that other countries are already beginning to adopt.

The potential of the Diia app lies in its ability to transform the way Ukrainian citizens interact with government services and access essential information. By leveraging digital technology, Diia can significantly improve the efficiency, transparency, and accessibility of public services. Here are some potential benefits and opportunities for the Diia app:

- Enhanced user experience: By providing a single platform for accessing various government services, Diia can simplify processes and reduce the time and effort required for citizens to complete tasks. This improved user experience can lead to increased satisfaction and trust in government institutions.

- Cost savings: By digitizing services and reducing the need for in-person visits to government offices, Diia can help save resources for both citizens and government agencies. This includes reduced paper usage, lower administrative costs, and decreased wait times for services.
- Increased transparency: Diia can promote transparency by providing citizens with real-time updates on the status of their applications and access to essential information about government policies and regulations. This can help to build trust in government institutions and encourage civic engagement.
- Improved data management: The integration of Diia with other digital platforms and services can enable more efficient data sharing and collaboration between government agencies. This can lead to better decision-making, more targeted policies, and improved service delivery.
- Economic growth: By streamlining processes and making it easier for businesses to access government services, Diia can contribute to a more business-friendly environment, encouraging entrepreneurship and economic growth.
- Digital inclusion: As Diia continues to expand its range of services and improve its user experience, it can help bridge the digital divide and ensure that all citizens, regardless of their location or socioeconomic status, have access to essential government services.

By realizing its full potential, the Diia app can play a crucial role in modernizing Ukraine's public services and improving the overall quality of life for its citizens. However, it's essential to address potential challenges, such as digital literacy, data security, and infrastructure development, to ensure the app's long-term success and widespread adoption.

## CONCLUSION

The Ukrainian IT industry has piqued the interest of both researchers and policymakers, owing to its great potential and competitiveness in the worldwide market. In recent years, the industry has grown fast, and its impact on the country's economy has been significant. The Ukrainian IT industry has attracted foreign investment and has established itself as a prominent player in the global IT market.

This qualification paper has investigated the theoretical basis of Ukrainian IT sector research. The significance of the information technology industry in the global market has been explored, emphasizing the industry's relevance in promoting innovation and economic progress. An overview of the Ukrainian IT industry, including its size, structure, and important participants, has been provided. The impact of the Ukrainian IT industry on the country's economy has also been investigated, revealing the industry's major contribution to GDP and employment.

This study examines current trends in the Ukrainian IT sector in the worldwide market. The potential and competitiveness of the Ukrainian IT sector have been assessed by comparing it to the IT industries of other countries. The Ukrainian IT industry's issues have also been mentioned, including a lack of skilled personnel, poor infrastructure, and a lack of government assistance. These issues must be solved to ensure the Ukrainian IT industry's continued growth and prosperity.

This work has investigated the difficulties and important areas of development in the Ukrainian IT sector. Forecasting the development of the Ukrainian IT industry has been examined, noting the potential for growth as well as the need for infrastructure and human capital investment. A case study of the Diia application was presented, showcasing the Ukrainian IT industry's ability to generate creative solutions that benefit society. To summarize, the Ukrainian IT industry has demonstrated significant potential

and competitiveness in the global market. However, much effort needs to be done to ensure its future growth and success. The Ukrainian government must emphasize IT industry development and give the necessary assistance to attract and retain qualified personnel. In order to attract foreign investment, the government must spend in infrastructure and create a favorable business environment. The Ukrainian IT industry has the potential to become a prominent player in the global IT market and significantly contribute to the country's economy with the right support and investment. The Diia application case study demonstrates the Ukrainian IT industry's ability to produce unique solutions that benefit society, and this ability must be capitalized on in order to fuel the industry's growth and success.

The Ukrainian IT industry can leverage its strengths to further enhance its global competitiveness. By focusing on niche markets and emerging technologies such as artificial intelligence, blockchain, and cybersecurity, Ukrainian IT companies can differentiate themselves and create a unique value proposition for international clients. Collaboration between the government, educational institutions, and the private sector is crucial for fostering innovation and developing a skilled workforce. Additionally, strengthening partnerships with international tech companies and participating in global IT events can boost the industry's visibility and attract foreign investment.

The government also considering implementing policies that encourage innovation, such as tax incentives for R&D activities and simplified regulations for IT businesses. This will create a more conducive environment for the growth of the IT industry and help attract top talent from around the world. Diia City can be a great decision for it.

Finally, by leveraging on its assets and overcoming the obstacles it faces, the Ukrainian IT industry has the potential to become a key player in the global market. The industry can continue to flourish and contribute considerably to Ukraine's economy with the correct backing from the government, educational institutions, and the private

sector, while also demonstrating the country's technological acumen on the global arena.





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