DIGITAL TIGER
the Power of Ukrainian IT research for 2023
Ukraine is securing its position as a prominent global digital and cyberspace player, having earned the “Digital Tiger” moniker. The vibrant Ukrainian IT ecosystem is rapidly developing: Incredible Tech investor’s guide shows just how viable and sought-after Ukrainian IT companies are. The main sectors of IT ecosystem growth are CyberTech & Cybersecurity, AI and IoT, HealthTech and AgriTech, EdTech and GovTech – with the latter being modelled worldwide – and many others.

Ukrainian Global Innovation Vision for 2030 set the goal for Ukraine to become the most "digital-friendly" country in the world. Notwithstanding the arduous wartime conditions – our IT industry is overcoming them all – SMBs and industry giants thrive alike, employing hundreds of thousands of highly skilled IT specialists in the home market and abroad, servicing

markets in every region of the planet whilst operating their HQs from Ukraine. IT Ukraine Association is the largest Ukrainian IT community, with more than 160 companies and more than 85 thousand IT professionals – and growing.

Each year, we conduct the most comprehensive Ukrainian IT market research, collecting and verifying troves of data and compiling valuable insights to showcase the opportunities to partners around the globe. We hope these findings provide a coherent and clear picture of the present and future Ukrainian IT landscape: its prospects, challenges and how they are overcome, its economic impact and the overall progress, as compared to Ukraine’s digitalisation counterparts across the globe. Dive, lean in, and let’s build a better world together!

IT Ukraine Association represents Ukraine as part of:

- The World Innovation, Technology and Services Alliance (WITSA)
- DigitalEurope
- The European eCommerce and Omni Channel Trade Association (EMOTA)
- International Federation for Information Processing (IFIP)
WHAT IS DIGITAL TIGER?

The world is interested in Ukraine and is discovering it. Ukraine, for its part, is gaining a more vital place in the global arena every year. However, the narrative of the war is weakening the position of Ukrainian businesses in the international arena by increasing the risks of cooperation. So, it’s time to showcase the capabilities of our country and the strength of the IT industry in particular.

DIGITAL TIGER is a research about the IT industry in Ukraine, in which we speak honestly about:

- the state of the Ukrainian IT industry and its importance in the Ukrainian economy;
- the level of development of the IT industry and the IT ecosystem in Ukraine compared to other countries;
- strengths of the Ukrainian IT business and promising areas of its development;
- Ukraine’s challenges and our mitigation strategy;
- the most successful Ukrainian brands.

Ukraine's digitalization is known far beyond its borders. It is being discussed in almost all countries, and some even want to learn from Ukraine’s experience in digitalizing public services. Back at the Davos 2022 Summit, Ukraine already earned the moniker of a “digital tiger” from Europe – a well-deserved accolade.
METHODOLOGY OF THE RESEARCH

Approach to analyzing data on the IT industry

IT services refer exclusively to computer services, meaning that the data presented in this research does not include telecommunication services.

The analysis of IT industry in Ukraine included companies with the following KVED (Ukr. Classifier of Economic Activities) codes:
- 58.21 Computer games publishing;
- 58.29 Other software publishing;
- 62.01 Computer programming;
- 62.02 Informatization consulting services;
- 62.03 Activities related to computer equipment management;
- 62.09 Other activities in the field of IT and computer systems;
- 63.11 Data processing, hosting and related activities;
- 63.12 Web portals.

To clarify the methodology for collecting and calculating specific indicators, we formed an Expert Council consisting of representatives of the Ministry of Digital Transformation of Ukraine, specialized associations and organizations, and market representatives.

Main data sources

The primary data sources for Ukraine were official data from Ukrainian relevant ministries or organizations. Other countries' data sources were mostly international organizations that collected such data.

- Ministry of Digital Transformation of Ukraine
- Ministry of Education and Science of Ukraine
- Ministry of Finance of Ukraine
- National Bank of Ukraine
- State Statistics Service of Ukraine
- State Tax Service of Ukraine
- Ukrainian Tech Ecosystem Overview
- The World Bank
- dou.ua
- Forbes
- numerous other sources

Should any clarification concerning the research methodology be needed, please let us know via hello@itukraine.org.ua

The exact source of the information is provided at the bottom of each page.
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UKRAINE AS AN IT STATE
THE PLACE OF IT IN UKRAINIAN LIFE

The integration of IT into the lives of Ukrainians is determined by what provides convenience and accessibility in everyday life. The IT sector facilitates daily activities and provides new opportunities for self-expression, learning, and professional development, making Ukrainians' lives more efficient.

Everyday life

- **Paying for services and online shopping.** Electronic payments for utilities and other services, online shopping.
- **Public transportation and logistics.** Monitoring public transport schedules, e-payment of fares, mobile applications of postal services and taxis.
- **Document management and administrative services.** Electronic documents, car sales, and marriage registration in one app - Diia. Electronic declaration, and online services of government agencies.

Professional sphere

- **Tax and banking sector.** Electronic reporting and mobile banking applications with the ability to open bank accounts online.
- **Work and career.** Job search platforms, online interviews, remote work.
- **Communication.** Social networks, video conferencing, messengers.

Hobbies and health

- **Health and sports.** Mobile applications for health monitoring and online consultations with doctors.
- **Entertainment and culture.** Media streaming platforms, online event tickets, online gaming.
- **Education and training.** Electronic educational platforms, distance learning, digital libraries.

Sources: open data
IT IN OTHER INDUSTRIES

IT is not limited to the world of computer technology. It penetrates all sectors of the economy, from industry and agriculture to healthcare and trade. Applying IT innovations in non-computer industries opens opportunities to improve operations and solve complex problems, leading to overall economic progress and development.

Sources: Top Lead, open data
UKRAINE AS AN IT COUNTRY

Ukraine has a strong IT industry with innovative companies and a large base of highly skilled IT professionals who create world-renowned startups. The country attracts the attention of foreign investors and partners because of its efficiency in software development and high level of technological expertise, as evidenced by numerous ratings.

### The level of innovation has improved by 12.8%

The Network Readiness Index reflects innovation and technological potential. In 2023, Ukraine ranked 1st among lower-middle-income countries.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of points</th>
<th>Place in the global ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>48.9</td>
<td>1</td>
</tr>
<tr>
<td>2020</td>
<td>55.7</td>
<td>1</td>
</tr>
<tr>
<td>2021</td>
<td>65.2</td>
<td>1</td>
</tr>
</tbody>
</table>

### Digital assets are a priority

According to The Chainalysis Geography of Cryptocurrency Report, Ukraine has one of the best cryptocurrency adoptions.

<table>
<thead>
<tr>
<th>Year</th>
<th>Index</th>
<th>Place in the global ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>0.6</td>
<td>1</td>
</tr>
<tr>
<td>2019</td>
<td>0.7</td>
<td>1</td>
</tr>
<tr>
<td>2020</td>
<td>0.7</td>
<td>1</td>
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</table>

### E-Governance is growing rapidly

According to the E-Government Development Index, Ukraine has improved its rating by 59.6% over the past 8 years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Index</th>
<th>Place in the global ranking</th>
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</thead>
<tbody>
<tr>
<td>2018</td>
<td>0.6</td>
<td>1</td>
</tr>
<tr>
<td>2019</td>
<td>0.7</td>
<td>1</td>
</tr>
<tr>
<td>2020</td>
<td>0.7</td>
<td>1</td>
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</tbody>
</table>

### Data maturity has reached 97%

A European Union study shows that Ukraine has one of the highest Open Data scores among its member and candidate countries.

<table>
<thead>
<tr>
<th>Year</th>
<th>Open Data Maturity, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>84%</td>
</tr>
<tr>
<td>2021</td>
<td>94%</td>
</tr>
<tr>
<td>2022</td>
<td>97%</td>
</tr>
</tbody>
</table>

Sources: Portulans Institute, Chainalysis, The United Nations, data.europa.eu
IT in Ukraine is not only transforming the way we live and work but is also becoming a critical factor in strengthening the country’s economy. Over the past decade, there has been rapid growth. The share of computer service exports in services exports has increased by 35.3 percentage points, accounting for 4% of GDP.

Source: National Bank of Ukraine
Ukraine's export of goods and services is diverse. The agricultural sector has had the highest share for almost ten years. Still, IT services have grown significantly in recent years and are now a vital export segment, accounting for 13.2% of total exports.

**Exports of goods and services, %**

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</thead>
<tbody>
<tr>
<td>Agricultural products</td>
<td>20.9%</td>
<td>25.5%</td>
<td>30.2%</td>
<td>33.1%</td>
<td>32.9%</td>
<td>31.4%</td>
<td>34.8%</td>
<td>36.5%</td>
<td>34.0%</td>
<td>40.6%</td>
<td>43.0%</td>
</tr>
<tr>
<td>Precious metals and related products</td>
<td>20.5%</td>
<td>22.9%</td>
<td>19.1%</td>
<td>17.6%</td>
<td>18.3%</td>
<td>19.3%</td>
<td>15.7%</td>
<td>14.5%</td>
<td>19.3%</td>
<td>10.2%</td>
<td>7.6%</td>
</tr>
<tr>
<td>Transport</td>
<td>10.4%</td>
<td>9.5%</td>
<td>11.1%</td>
<td>11.6%</td>
<td>11.0%</td>
<td>10.1%</td>
<td>9.8%</td>
<td>8.4%</td>
<td>5.8%</td>
<td>6.7%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Mineral products</td>
<td>7.7%</td>
<td>8.1%</td>
<td>5.6%</td>
<td>5.2%</td>
<td>6.5%</td>
<td>6.6%</td>
<td>6.9%</td>
<td>8.2%</td>
<td>9.7%</td>
<td>7.1%</td>
<td>4.4%</td>
</tr>
<tr>
<td>Machines, equipment, optical apparatus</td>
<td>10.4%</td>
<td>8.3%</td>
<td>7.0%</td>
<td>6.0%</td>
<td>5.3%</td>
<td>5.1%</td>
<td>5.4%</td>
<td>5.6%</td>
<td>4.7%</td>
<td>4.0%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Other</td>
<td>28.5%</td>
<td>23.5%</td>
<td>23.4%</td>
<td>22.2%</td>
<td>21.4%</td>
<td>22.2%</td>
<td>20.7%</td>
<td>18.6%</td>
<td>18.0%</td>
<td>18.6%</td>
<td>20.4%</td>
</tr>
</tbody>
</table>

Source: National Bank of Ukraine
GEOGRAPHY OF UKRAINE'S IT EXPORTS

IT in Ukraine is an export-oriented industry that is in high demand. Over the past ten years, exports of IT services have grown annually by an average of 18.7%, reaching a record high of $7.3 billion in 2022. The United States remains the leading importer, just like ten years ago.

Top 10 countries importing IT services from Ukraine, USD mln

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<tbody>
<tr>
<td>USA</td>
<td>404</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,677</td>
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<tr>
<td>United Kingdom</td>
<td>132</td>
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<td></td>
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<tr>
<td>Switzerland</td>
<td>113</td>
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<tr>
<td>Germany</td>
<td>58</td>
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<tr>
<td>Cyprus</td>
<td>49</td>
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<tr>
<td>Russia</td>
<td>45</td>
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<tr>
<td>Denmark</td>
<td>39</td>
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<tr>
<td>Israel</td>
<td>35</td>
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<td></td>
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<tr>
<td>Malta</td>
<td>30</td>
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<td></td>
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<tr>
<td>Netherlands</td>
<td>28</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>

Source: National Bank of Ukraine
IT COMPANIES IN UKRAINE

The IT market in Ukraine has a specific structure IT companies often consist of many legal entities established for different areas of activity or even for individual products. Due to this peculiarity, the exact number of IT companies is difficult to calculate, as tracking how many legal entities makeup one IT company is challenging. Therefore, the market operates with several estimates of the number of IT companies in Ukraine.

Number of operating legal entities providing IT services, thou.

<table>
<thead>
<tr>
<th>Year</th>
<th>Legal Entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>7.8</td>
</tr>
<tr>
<td>2019</td>
<td>8.3</td>
</tr>
<tr>
<td>2020</td>
<td>8.7</td>
</tr>
<tr>
<td>2021</td>
<td>9.6</td>
</tr>
<tr>
<td>2022</td>
<td>8.9</td>
</tr>
<tr>
<td>2023</td>
<td>8.1</td>
</tr>
</tbody>
</table>

The number of active legal entities providing IT services is much higher than the number of actual IT companies, as one company may consist of several legal entities.

More than 2,000 IT companies operate in Ukraine

2,150 active verified IT companies operate in Ukraine, according to the IT Research by Lviv IT Cluster

2,300+ IT companies are listed in the Ukrainian Tech Ecosystem – an online database of IT companies, people, investors, and the technology ecosystem in Ukraine

IT companies in Ukraine by number of employees, according Tech Ecosystem, as of February 2024

- Up to 50: 74.7%
- 50–200: 16.8%
- 201–1,000: 6.9%
- 1,001–5,000: 1.5%
- 5,001 and more: 0.1%

Sources: State Tax Service of Ukraine, Lviv IT Cluster, Ukrainian Tech Ecosystem Overview
## Structure of IT companies by segments

<table>
<thead>
<tr>
<th>Segment</th>
<th>Number of Companies</th>
<th>Share of the Total Number, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business productivity software</td>
<td>234</td>
<td>14.0%</td>
</tr>
<tr>
<td>Martech &amp; Media</td>
<td>230</td>
<td>13.7%</td>
</tr>
<tr>
<td>Hardware &amp; IoT</td>
<td>93</td>
<td>5.5%</td>
</tr>
<tr>
<td>Gaming</td>
<td>69</td>
<td>4.1%</td>
</tr>
<tr>
<td>EdTech</td>
<td>68</td>
<td>4.1%</td>
</tr>
<tr>
<td>Fintech &amp; InsurTech</td>
<td>119</td>
<td>7.1%</td>
</tr>
<tr>
<td>HealthTech &amp; Wellness</td>
<td>51</td>
<td>3.0%</td>
</tr>
<tr>
<td>CyberTech</td>
<td>45</td>
<td>2.7%</td>
</tr>
<tr>
<td>CleanTech &amp; Energy</td>
<td>40</td>
<td>2.4%</td>
</tr>
<tr>
<td>Communication</td>
<td>29</td>
<td>1.7%</td>
</tr>
<tr>
<td>Consumer products and services</td>
<td>38</td>
<td>2.3%</td>
</tr>
<tr>
<td>E-commerce &amp; Retail</td>
<td>113</td>
<td>6.7%</td>
</tr>
<tr>
<td>Logistics &amp; Transportation</td>
<td>44</td>
<td>2.6%</td>
</tr>
<tr>
<td>Advanced Manufacturing</td>
<td>42</td>
<td>2.5%</td>
</tr>
<tr>
<td>PropTech &amp; Construction</td>
<td>27</td>
<td>1.6%</td>
</tr>
<tr>
<td>LegalTech</td>
<td>26</td>
<td>1.6%</td>
</tr>
<tr>
<td>Deep &amp; Spacetech</td>
<td>21</td>
<td>1.3%</td>
</tr>
<tr>
<td>Leisure &amp; Travel</td>
<td>16</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

Source: Ukrainian Tech Ecosystem Overview
In Ukraine, an IT specialist can cooperate with companies in three ways, each with its peculiarities of cooperation and benefits for both the IT specialist and the IT company. Given that employment in the IT industry is more project-based, most IT professionals prefer to work with companies as individual entrepreneurs rather than as full-time employees.

**Number of employees in the IT industry in Ukraine**, thou.

+78.4% growth, 2018–2023

<table>
<thead>
<tr>
<th>Year</th>
<th>Active individual entrepreneurs</th>
<th>Hired employees</th>
<th>Gig specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>194.1</td>
<td>139.0</td>
<td>55.2</td>
</tr>
<tr>
<td>2019</td>
<td>229.9</td>
<td>168.6</td>
<td>61.3</td>
</tr>
<tr>
<td>2020</td>
<td>256.3</td>
<td>195.1</td>
<td>61.2</td>
</tr>
<tr>
<td>2021</td>
<td>311.0</td>
<td>243.9</td>
<td>67.0</td>
</tr>
<tr>
<td>2022</td>
<td>336.8</td>
<td>272.8</td>
<td>58.1</td>
</tr>
<tr>
<td>2023</td>
<td>346.2</td>
<td>265.0</td>
<td>58.1**</td>
</tr>
</tbody>
</table>

**Individual entrepreneurs**
An IT specialist is registered as an entrepreneur and can enter service agreements with IT companies to work on projects. An individual entrepreneur pays taxes on their work and can work with several companies simultaneously.

**Hired employees**
An IT specialist enters into an employment contract with an IT company and becomes its full-time employee. Usually, such specialists are limited to working for one company.

**Gig specialists**
An IT specialist who works with companies that are part of Diia.City (founded in 2022) can make a gig contract with it. It allows the specialist to retain the benefits of freelancing but, at the same time, receive social guarantees from the employer.

*One IT specialist can be an individual entrepreneur, an hired employee and a gig specialist at the same time

**No new data on the number of hired employees in 2023**

Sources: State Tax Service of Ukraine, State Statistics Service of Ukraine
IT SPECIALIST: SOCIAL OVERVIEW

**Gender**
- 74% Men
- 26% Women

**Age**
- 3% Up to 20
- 24% 21–25
- 31% 26–30
- 25% 31–35
- 17% 36+

**Offspring**
- 27% Have children
- 73% Do not have children

**Family status**
- 42% Married
- 21% Single
- 18% Cohabiting
- 17% In a relationship
- 2% Divorced

**Education**
- Higher: 87%
- Incomplete higher education: 4%
- Still a student: 4%
- Secondary, secondary specialized: 3%
- PhD: 2%

**English language skills**
- 43% Upper-Intermediate
- 22% Intermediate
- 10% Pre-Intermediate
- 2% Elementary

**Self-development**
- 60% Take courses and training
- 45% Read professional literature
- 15% Regularly attend specialized IT events
- 21% Do not have time for self-development

*total does not equal 100%, as there was a possibility to choose several answers

Source: dou.ua
IT SPECIALIST: PROFESSIONAL OVERVIEW

**Years of experience**
- Up to one year: 6%
- 1–2 years: 28%
- 3–5 years: 36%
- 6–9 years: 23%
- 10+ years: 7%

**Number of companies worked for**
- 3–4: 34%
- 2: 26%
- 1: 26%
- 5–7: 12%
- 8 and more: 2%

**Most common positions**
- Software Engineer: 47%
- QA/QA Engineer: 20%
- Manager/Product Owner: 6%
- HR/Recruiter: 5%
- Designer/Artist: 4%
- Other: 18%

**Titles**
- Junior: 16%
- Middle: 36%
- Senior: 26%
- Lead/Head: 12%
- Other: 10%

**Workplace**
- Fully remote: 63%
- More often remote: 22%
- More often in the office: 7%
- Equally in the office and remote: 4%
- Fully in the office: 4%

**Main areas of activity**
- E-commerce: 19%
- FinTech: 14%
- MedTech: 9%
- GameDev: 7%
- Mobile: 6%
- Gambling: 5%
- EdTech: 5%
- Other: 35%

Source: dou.ua
SALARIES IN 2023

Top 3 significant factors affecting Ukrainian Tech salary dynamics

- Competition for talent scales down
  A significant increase in the number of unemployed allowed companies to reorient in the recruitment process
- Salary freezes and decreases
  A decline in investor interest has decreased funds and resources for scaling
- Number of candidates increasing
  Layoffs and redundancies have led to an influx of job seekers, reducing the talent shortage and increasing competition

Most In-Demand positions, from Junior to Lead, USD/month

Due to SaaS web applications and online games, JavaScript Developers are in the highest demand. The big data, finance, web, and mobile application niches drive the demand for Java developers.

Most dynamic positions, from Junior to Lead, USD/month

In the top positions, the dynamics of Java developers' salaries remained almost unchanged. DevOps specialists are constantly in demand in fintech companies, where the salary level is among the highest.

Highest salaries, USD/month

The development of AI, cybersecurity, and constant hiring in fintech companies with the highest salaries in the tech segment are among the factors behind the high wages for top titles.

Salaries:
- Lead DevOps: 8,500 USD/month
- Lead Fullstack Developer: 8,800 USD/month
- Lead Python Developer: 9,000 USD/month

Source: Talando
UKRSIBBANK BNP PARIBAS GROUP

One of the system banks of Ukraine with foreign capital: 60% of shares belong to the BNP Paribas Group – one of the leaders among foreign banks in Ukraine in terms of assets, net income and market capitalization; 40% of the shares belong to the EBRD. The bank supports the IT community, partner of the IT Association and most IT clusters.

COMPANY VALUES

We are reliable partner making safe banking in agile way by caring about customers and employees, bringing positive impact and contributing to sound Ukrainian economy, leveraging the strength of the leading European banking Group.

AREAS OF SPECIALIZATION

- IT companies
- IT specialists
- Clients of SME & Individual entrepreneur
- Large companies
- International corporations
- Personal banking
- Premium clients
- Private individuals
- SME customers
- Payroll projects
- Loans
- Local & multinational expertise
- Servicing both IT companies & IT specialists

ABOUT THE BANK

Andrii Kashperuk
Deputy Chairman of the Management Board on Retail Banking of UKRSIBBANK BNP Paribas Group

E-mail: info@ukrsibbank.com

Website: www.ukrsibbank.com

Head office: Kyiv, Ukraine
SERVICES FOR IT COMPANIES & FOR IT SPECIALISTS

Comprehensive service that includes all necessary: IT companies of the resident, IT companies of the non-resident, IT companies of the DIIA CITY residents and IT individual entrepreneurs.

SERVICES FOR IT COMPANIES

- UKRSIB business – free internet banking & mobile application
- Opening of personal accounts for individual entrepreneurs, salary accounts for full-time employees & GIG
- Financial Control Center – simultaneous management of several company’s accounts & individual entrepreneurs in UKRSIB business
- API – integration of the client’s system with UKRSIB business

SERVICES FOR IT SPECIALISTS

- UKRSIB online – internet banking for personal needs
- Business account “IT Entrepreneur” in UAH/USD/EUR
- Personal card account in UAH/USD/EUR, Premium card
- Loyalty program “EXTRA bilshe” and deposits programs
- Premium benefits: personal manager, family banking and concierge service 24/7

GENERAL BENEFITS

- Favourable service for IT companies and a special package offer for IT specialists;
- Using the UKRSIB business key as a KEP for signing documents on external resources with free online registration;
- Medical insurance in Ukraine and for travelers. Protection cards against fraud.

MORE INFO ABOUT THE PROJECTS
TAXES FROM THE IT INDUSTRY

Due to the peculiarities of the Ukrainian IT market, most taxpayers are individual entrepreneurs, accounting for 97% of all taxpayers. In 2023, the number of taxpayers decreased by 3.1% due to the war.

The share of legal entities in the structure of taxes paid is almost 50%, which is significantly higher than in the structure of taxpayers. Along with the decrease in the number of taxpayers, the taxes paid decreased by 1.4%

**Number of taxpayers from the IT industry, thou.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Active individual entrepreneurs</th>
<th>Legal entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.01.2020</td>
<td>176.9</td>
<td>168.6</td>
</tr>
<tr>
<td>1.01.2021</td>
<td>203.7</td>
<td>195.1</td>
</tr>
<tr>
<td>1.01.2022</td>
<td>253.5</td>
<td>243.9</td>
</tr>
<tr>
<td>1.01.2023</td>
<td>281.7</td>
<td>272.8</td>
</tr>
<tr>
<td>1.01.2024</td>
<td>273.1</td>
<td>265.0</td>
</tr>
</tbody>
</table>

**Growth, 2019-2023**

+54.4%

**Taxes paid by the IT industry, USD mln**

<table>
<thead>
<tr>
<th>Year</th>
<th>Active individual entrepreneurs</th>
<th>Legal entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.01.2020</td>
<td>650.4</td>
<td>344.4</td>
</tr>
<tr>
<td>01.01.2021</td>
<td>732.2</td>
<td>381.9</td>
</tr>
<tr>
<td>01.01.2022</td>
<td>1,018.3</td>
<td>497.8</td>
</tr>
<tr>
<td>01.01.2023</td>
<td>996.7</td>
<td>470.8</td>
</tr>
<tr>
<td>01.01.2024</td>
<td>982.6</td>
<td>490.3</td>
</tr>
</tbody>
</table>

**Growth, 2019-2023**

+51.1%

*Data on taxes paid are presented in Ukrainian hryvnia, as payments are made in this currency, and it more accurately reflects the industry’s sustainability.

Source: State Tax Service of Ukraine
Payoneer is the financial technology company empowering the world’s small and medium businesses (SMBs) to transact, do business, and grow globally. Our mission is to make it easier for millions of SMBs, particularly in emerging markets, to pay and get paid, manage their funds, and grow their business.

COMPANY VALUES
Payoneer values Ukraine's entrepreneurs, providing decade-long digital payment solutions. During the war, we prioritized safety and continued support, partnering with top banks and platforms to facilitate global transfers for freelancers and SMBs, ensuring business continuity.

OUR SERVICES
- Pay & get paid internationally
- Expand your business network
- Send bulk payments
- Receive working capital
- Convert currencies effortlessly

ALL-IN-ONE PLATFORM

INDUSTRIES
- IT outsourcing agencies
- Wholesalers and exporters
- eCommerce sellers
- Web & mobile app developers
- Freelancers

TOP CLIENTS
- Google
- Amazon
- eBay
- Etsy
- Wish
- Envato
- Upwork
- Airbnb
- CrossOver
- 99designs
- Freelancer
- Fiverr
- Taboola

E-mail: info@payoneer.com
Website: www1.payoneer.com/ua
Head office: New York, USA

Liubov Danylina
Ukraine Country Manager
Whether you develop software, create websites, mobile apps or run an IT company, Payoneer allows you to receive payments in multiple currencies from international customers. With Payoneer, it's easy to pay employees anywhere in the world and with low fees.

**PAYONEER: SERVICES FOR IT BUSINESSES**

**Global Scale**
Receive and send payments in 200+ countries.

**Fast**
Receive payments as quickly as in your city.

**Low fees**
Save on exchange rates and costs when making transfers.

**Flexibility**
Choose a convenient way to use and access your funds.

**Get Paid**
Get local bank details to receive payments in multiple currencies seamlessly.

**Make Payments**
Pay expenses, suppliers, employees, and taxes with Payoneer. Transfer funds easily.

**Manage Business**
Open new markets, grow your business, connect to partners and customers.
UKRAINE IN THE GLOBAL IT MARKET
UKRAINE IN THE GLOBAL IT MARKET

Ukraine is a country that prioritizes IT as one of its economic development priorities and has excellent growth potential. In the global market, Ukraine is already well known as a reliable and qualified partner for IT consulting and the development of complex products. Ukraine already earned the moniker of a "digital tiger" from Europe – a well-deserved accolade.

Apart from Ukraine, many other countries provide similar services, but each has advantages and disadvantages for potential customers. To ensure the objectivity of the research, we have selected several countries with which it would be appropriate to compare Ukraine in the global IT market.

How did we choose the countries to compare with Ukraine?

We have analyzed various authors' articles, ratings, and analytical reviews about the best countries for IT consulting. For example, research by Kearney, ratings by Atlasiko Inc., PixelCrayons, We Are Amnet, N-iX, and numerous other sources. Most of these materials mention Ukraine and some other countries, which were usually partially the same.

What criteria did we use to select countries for comparison?

<table>
<thead>
<tr>
<th>Competitiveness</th>
<th>Business climate</th>
<th>Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talent pool and level of technical education</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What countries did we choose to compare with Ukraine?

- POLAND
- BRAZIL
- INDIA
- CZECHIA
ECONOMIES AND OPPORTUNITIES

The country’s large territory and population provide more significant opportunities for economic development. However, a country’s potential does not necessarily depend on these criteria in the digital world.

**Land area, thou. sq km**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>8,515.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>3,287.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ukraine</td>
<td>603.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>312.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czechia</td>
<td>78.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**GDP (PPP) per capita, USD thou.**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>8,515.8</td>
<td>3,287.3</td>
<td>603.6</td>
<td>312.7</td>
<td>78.9</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>2,650</td>
<td>2,060</td>
<td>524.6</td>
<td>216.6</td>
<td>112.1</td>
<td>160.5</td>
</tr>
<tr>
<td>Czechia</td>
<td>1,350</td>
<td>1,420</td>
<td>44.8</td>
<td>38.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ukraine</td>
<td>1,920</td>
<td>1,350</td>
<td>688.1</td>
<td>290.5</td>
<td>112.1</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
<td></td>
<td>-3.2%</td>
<td>-15.2%</td>
<td>49.2</td>
<td></td>
</tr>
</tbody>
</table>

**Population, mln people**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>1,350</td>
<td>1,420</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>208.5</td>
<td>215.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ukraine</td>
<td>44.8</td>
<td>38.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>38.0</td>
<td>38.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czechia</td>
<td>10.6</td>
<td>10.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Nominal GDP, USD bln**

India has the largest population and Brazil – the largest land area. Thus, these countries should, a priori, be better able to generate large GDP. However, GDP alone does not always indicate the strength of an economy.

**GDP (PPP) per capita, USD thou.**

Technology enables countries to increase resource efficiency. Poland and Czechia are prime examples of this, growing their economies with limited resources. Ukraine is also managing to maintain its economy despite the challenges of war and territorial occupation.

Source: State institution “Entrepreneurship and Export Promotion Office”
In today's post-industrial world, services are becoming an increasingly vital part of the economy. This transition has been driven by globalization, changes in consumer aspirations, and, especially, digital transformation.

In recent decades, many countries have transformed their economies to become more service-oriented. Ukraine is one of the most dynamic countries in the world in terms of the share of services in GDP, having doubled this figure since 1991 (the year of Ukraine's independence).

Sources: State institution "Entrepreneurship and Export Promotion Office", The World Bank
The IT sector is becoming increasingly important to the economy for most countries prioritizing its development. Since 2017, the share of IT services exports in the economy has increased significantly. For countries such as Ukraine and India, it has become one of the strategic industries, accounting for almost 5% of GDP and up to half of all service exports.

The importance of IT grows every year in every economy

**Share of IT services export in GDP, %**

- **UKRAINE**: 4.6% in 2017, increasing to 44.2% in 2022.
- **INDIA**: 2.0% in 2017, increasing to 44.2% in 2022.
- **CZECHIA**: 1.3% in 2017, increasing to 15.8% in 2022.
- **POLAND**: 1.0% in 2017, increasing to 12.8% in 2022.
- **BRAZIL**: 0.1% in 2017, increasing to 10.1% in 2022.

**Share of IT services export in total services export, %**

- **UKRAINE**: 17.5% in 2017, increasing to 37.8% in 2022.
- **INDIA**: 28.0% in 2017, increasing to 32.7% in 2022.
- **CZECHIA**: 107% in 2017, decreasing to 15.8% in 2022.
- **POLAND**: 9.2% in 2017, decreasing to 12.7% in 2022.
- **BRAZIL**: 5.2% in 2017, decreasing to 10.1% in 2022.

Sources: The World Bank, National Bank of Ukraine
GROWTH OF IT SERVICES EXPORT

Digital technologies create new opportunities for economic development. The effective use of technology and the transition to a digital world is becoming the key to success in a rapidly changing environment. Therefore, most countries are actively increasing the production and export of IT services.

**IT services export**, USD bln

<table>
<thead>
<tr>
<th>Country</th>
<th>2017</th>
<th>2022</th>
<th>Change in 2022 compared to 2017, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>51.8</td>
<td>95.5</td>
<td>+84.4%</td>
</tr>
<tr>
<td>Poland</td>
<td>5.4</td>
<td>12.2</td>
<td>+127.0%</td>
</tr>
<tr>
<td>Czechia</td>
<td>1.7</td>
<td>5.3</td>
<td>+80.8%</td>
</tr>
<tr>
<td>Brazil</td>
<td>2.5</td>
<td>7.3</td>
<td>+195.7%</td>
</tr>
</tbody>
</table>

**IT services export per capita**, USD

<table>
<thead>
<tr>
<th>Country</th>
<th>2017</th>
<th>2022</th>
<th>Change in 2022 compared to 2017, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>38</td>
<td>141</td>
<td>+75.3%</td>
</tr>
<tr>
<td>Poland</td>
<td>67</td>
<td>331</td>
<td>+134.4%</td>
</tr>
<tr>
<td>Czechia</td>
<td>8</td>
<td>19</td>
<td>+79.1%</td>
</tr>
<tr>
<td>Brazil</td>
<td>276</td>
<td>495</td>
<td>+128.2%</td>
</tr>
</tbody>
</table>

Sources: TradeMap, The World Bank, National Bank of Ukraine

*data for Czechia and Poland in 2022 and for India in 2017-2022 are estimated by UNCTAD and WTO
A large number of IT specialists indicate a growing interest in the IT industry and professional development of the workforce. Numerous professionals contribute to developing innovation potential and expanding the startup ecosystem. Their number has grown in recent years, providing countries with a highly skilled workforce capable of competing in the global IT market.

**Number of employees in the IT industry*, persons per 100 thou. population**

<table>
<thead>
<tr>
<th>Year</th>
<th>Brazil</th>
<th>Ukraine</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>357.3</td>
<td>435.1</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>380.5</td>
<td>517.9</td>
<td>820.8</td>
</tr>
<tr>
<td>2020</td>
<td>388.2</td>
<td>580.7</td>
<td>897.6</td>
</tr>
<tr>
<td>2021</td>
<td>416.3</td>
<td>709.6</td>
<td>997.3</td>
</tr>
<tr>
<td>2022</td>
<td>403.0</td>
<td>886.3</td>
<td>1,039.7</td>
</tr>
</tbody>
</table>


*no data about Poland and Czechia*
AREAS AFFECTING THE IT INDUSTRY

Population
The number of future and current IT professionals depends on the demographic situation

Infrastructure
The development and availability of the Internet, technical equipment, and electricity

Education
Level of education, number of students and programs in IT specialties

Urbanization
The size and development of cities concentrate IT talent in one place

Investments
Development while attracting investment

Banking sector
Development and convenience partially determine the ease of doing business

Country brand
Perception of the country in the international arena as a reliable partner

Taxes
The level of taxation for companies and professionals

Legislation
Regulation of the IT industry, the role of the state in the development of IT

Competition
General business climate

Sources: open data
URBANIZATION

Urbanization is increasing every year in Ukraine and other countries. It is manifested in the growing role of urban settlements, the ever increasing share of industrial and service enterprises, the expansion of city boundaries, etc. This trend is a positive change for the IT sector due to the concentration of IT talent within a single center.

Urbanization is an essential stage for the IT industry

- **Investments**
  Concentration of a significant number of investors and startups. Access to financing, partnership, and development.

- **Formation of IT clusters**
  Urbanization can encourage companies to unite around a common idea/industry.

- **Innovative ecosystems**
  Due to the concentration of talent, cities facilitate the creation of ideas and projects.

- **Infrastructure**
  Access to high-speed Internet, innovation parks, and IT hubs.

- **Concentration of talent**
  Highly qualified specialists are concentrated in cities, contributing to developing an environment for exchanging ideas, creating innovations, etc.

**Countries are actively urbanizing**

**Urban population of countries, % of total population**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>85.5%</td>
<td>86.0%</td>
<td>86.6%</td>
<td>87.1%</td>
<td>87.6%</td>
</tr>
<tr>
<td>Czechia</td>
<td>73.4%</td>
<td>73.6%</td>
<td>73.8%</td>
<td>74.1%</td>
<td>74.4%</td>
</tr>
<tr>
<td>Ukraine</td>
<td>69.0%</td>
<td>69.2%</td>
<td>69.4%</td>
<td>69.6%</td>
<td>69.9%</td>
</tr>
<tr>
<td>Poland</td>
<td>60.4%</td>
<td>60.2%</td>
<td>60.1%</td>
<td>60.0%</td>
<td>60.1%</td>
</tr>
<tr>
<td>India</td>
<td>32.4%</td>
<td>33.2%</td>
<td>34.0%</td>
<td>34.9%</td>
<td>35.9%</td>
</tr>
</tbody>
</table>

Sources: The World Bank, open data
ELECTRICITY AND INTERNET ACCESS

A country can only become an IT leader with an advanced basic infrastructure. So providing the population with electricity and access to quality internet should be a priority.

Access to electricity, % of population

<table>
<thead>
<tr>
<th>Year</th>
<th>Ukraine</th>
<th>Poland</th>
<th>Czechia</th>
<th>India</th>
<th>Brazil</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>95.7%</td>
<td>99.7%</td>
</tr>
<tr>
<td>2019</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>95.9%</td>
<td>99.8%</td>
</tr>
<tr>
<td>2020</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>96.5%</td>
<td>99.7%</td>
</tr>
<tr>
<td>2021</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>99.6%</td>
<td>99.5%</td>
</tr>
</tbody>
</table>

Internet usage, % of population

Despite high levels of electrification, internet penetration varies widely between countries. For example, Poland and Czechia have the highest proportions of internet users, while India has the fewest.

<table>
<thead>
<tr>
<th>Year</th>
<th>Poland</th>
<th>Czechia</th>
<th>Brazil</th>
<th>Ukraine</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>77.5%</td>
<td>80.7%</td>
<td>70.4%</td>
<td>62.6%</td>
<td>20.1%</td>
</tr>
<tr>
<td>2019</td>
<td>80.4%</td>
<td>80.9%</td>
<td>73.9%</td>
<td>70.1%</td>
<td>20.5%</td>
</tr>
<tr>
<td>2020</td>
<td>83.2%</td>
<td>81.3%</td>
<td>81.3%</td>
<td>75.0%</td>
<td>43.4%</td>
</tr>
<tr>
<td>2021</td>
<td>85.4%</td>
<td>82.7%</td>
<td>80.7%</td>
<td>79.2%</td>
<td>46.3%</td>
</tr>
</tbody>
</table>

Internet speed and cost by country in 2023

<table>
<thead>
<tr>
<th>Country</th>
<th>Average internet speed, Mbps</th>
<th>Price per 100 Mbps, USD</th>
<th>Cost per month, USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ukraine</td>
<td>49.8</td>
<td>11.3</td>
<td>5.6</td>
</tr>
<tr>
<td>Poland</td>
<td>90.4</td>
<td>14.0</td>
<td>12.7</td>
</tr>
<tr>
<td>India</td>
<td>48.1</td>
<td>19.7</td>
<td>9.5</td>
</tr>
<tr>
<td>Brazil</td>
<td>91.8</td>
<td>22.9</td>
<td>21.0</td>
</tr>
<tr>
<td>Czechia</td>
<td>48.4</td>
<td>42.5</td>
<td>20.6</td>
</tr>
</tbody>
</table>

Brazil has the fastest internet speed but also has the highest price; thus, the cost of IT services there will be a priori higher than in other countries. Instead, Ukraine has the best price/speed ratio. This is partly due to the domestic production of cables and good government policy.

Sources: The World Bank, Today Testing
DIGITAL SKILLS

In the world of technology, digital skills are essential for anyone. Without general user skills, access to the possibilities of the Internet is limited, even with all the available Internet infrastructure in the country.

Technology skill proficiencies according to Coursera’s Global Skills Report, %

Ukraine ranks 15th in the world in terms of technical skills. This helps it develop its economy, because more educated people can create more added value, which contributes to the country’s economic development and the value of specialists.

Source: Coursera
THE POTENTIAL OF THE IT INDUSTRY

The basis of the population's digital literacy is its education, especially in the IT industry. Ukraine provides complete statistical data on educational processes, including the number of entrants and graduates in higher education institutions, indicating data openness. Unfortunately, other countries do not provide access to such data.

Number of entrants to IT specialties, by level of education, in Ukraine, thou.

<table>
<thead>
<tr>
<th>Year</th>
<th>Professional</th>
<th>Bachelor's degree</th>
<th>Master's degree</th>
<th>Junior bachelor</th>
<th>Professional junior bachelor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>45.6</td>
<td>25.9</td>
<td>9.3</td>
<td>12.3</td>
<td>0.1</td>
</tr>
<tr>
<td>2021</td>
<td>51.7</td>
<td>30.1</td>
<td>9.1</td>
<td>12.3</td>
<td>0.2</td>
</tr>
<tr>
<td>2022</td>
<td>59.8</td>
<td>29.6</td>
<td>18.4</td>
<td>11.7</td>
<td>0.1</td>
</tr>
<tr>
<td>2023</td>
<td>49.7</td>
<td>26.5</td>
<td>12.1</td>
<td>11.2</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Number of graduates in IT specialties, by level of education, in Ukraine, thou.

<table>
<thead>
<tr>
<th>Year</th>
<th>Professional</th>
<th>Bachelor's degree</th>
<th>Master's degree</th>
<th>Junior bachelor</th>
<th>Professional junior bachelor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>33.0</td>
<td>15.7</td>
<td>8.0</td>
<td>9.3</td>
<td>0.1</td>
</tr>
<tr>
<td>2021</td>
<td>31.4</td>
<td>17.0</td>
<td>6.4</td>
<td>6.4</td>
<td>0.2</td>
</tr>
<tr>
<td>2022</td>
<td>31.5</td>
<td>17.1</td>
<td>6.6</td>
<td>6.6</td>
<td>0.3</td>
</tr>
<tr>
<td>2023</td>
<td>31.5</td>
<td>17.3</td>
<td>6.0</td>
<td>6.0</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Why does a significant number of students indicate the potential of the IT industry?

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth of the labor force</td>
<td>Creates significant reserves for further growth of the IT workforce.</td>
</tr>
<tr>
<td>A wide range of competencies</td>
<td>Graduates of IT specialties acquire various technical and professional skills, unlike courses or schools focusing on one area.</td>
</tr>
<tr>
<td>Stimulating innovation</td>
<td>Thanks to their education and environment, graduates can become catalysts for innovation in the IT industry.</td>
</tr>
</tbody>
</table>

Source: Ministry of Education and Science of Ukraine
HIGHER EDUCATION IN UKRAINE

There are 316 higher education institutions in Ukraine, which creates ample opportunities for applicants to choose the most suitable institution and specialty. **96% of Ukrainian students and graduates recommend studying at a university**, as higher education provides needed skills and facilitates the exchange of ideas with like-minded people to solve problems.

The number of higher education institutions in Ukraine according to the Ukrainian Tech Ecosystem Overview

![Map showing the number of universities and colleges in Ukraine](image)

**316 Universities**

**133 Colleges**

Top 5 universities, according to the recommendations of IT students and graduates according to dou.ua

<table>
<thead>
<tr>
<th>Name</th>
<th>Developer salaries, USD thou.</th>
<th>English level, %</th>
<th>Points*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ukrainian Catholic University</td>
<td>3.7</td>
<td>83%</td>
<td>9.3</td>
</tr>
<tr>
<td>Simon Kuznets Kharkiv National University of Economics</td>
<td>3.0</td>
<td>56%</td>
<td>8.7</td>
</tr>
<tr>
<td>National University of Kyiv-Mohyla Academy</td>
<td>2.7</td>
<td>79%</td>
<td>8.4</td>
</tr>
<tr>
<td>Taras Shevchenko National University of Kyiv</td>
<td>3.0</td>
<td>73%</td>
<td>8.3</td>
</tr>
<tr>
<td>Odesa I.I. Mechnikov National University</td>
<td>2.9</td>
<td>70%</td>
<td>7.9</td>
</tr>
</tbody>
</table>

Sources: Ukrainian Tech Ecosystem Overview, dou.ua

*the maximum score is 10
INFORMAL AND ADDITIONAL EDUCATION

Ukrainian IT schools have trained more than 600,000 specialists, many of whom have successfully found jobs. IT schools and courses are essential for learning, providing an opportunity to gain practical skills and specific knowledge. This education creates unique opportunities for those who want to quickly gain valuable knowledge and get acquainted with IT without spending years studying at universities.

The number of IT schools and courses in Ukraine*

- 620K+ IT specialists graduated from all IT schools for last 20 years
- 96K+ students were employed

Top 10 IT schools in Ukraine

<table>
<thead>
<tr>
<th>Company</th>
<th>Number of graduates, thou. people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laba</td>
<td>78.3</td>
</tr>
<tr>
<td>ITVON IT school</td>
<td>67.6</td>
</tr>
<tr>
<td>hillel IT school</td>
<td>60.0</td>
</tr>
<tr>
<td>GO IT</td>
<td>24.0</td>
</tr>
<tr>
<td>CREATIVE &amp; TECH PROCTOR ONLINE INSTITUTE</td>
<td>23.0</td>
</tr>
<tr>
<td>SOURCE i</td>
<td>15.1</td>
</tr>
<tr>
<td>[DAN.IT] EDUCATION</td>
<td>6.5</td>
</tr>
<tr>
<td>A-Level</td>
<td>5.0</td>
</tr>
<tr>
<td>choice 31</td>
<td>4.9</td>
</tr>
<tr>
<td>Nate academy</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Sources: Ministry of Digital Transformation of Ukraine, Ukrainian Tech Ecosystem Overview, Forbes

*the list is based on quantitative and qualitative indicators; it is not exhaustive or recommended
IT companies implementing training play a significant role in developing the IT industry. Only 50% of the total number of specialists in demand were provided by universities. Hence, an individual approach from companies helps train specialists who already know the company and are ready to solve specific problems.

**Top training initiatives from IT companies**

<table>
<thead>
<tr>
<th>Company</th>
<th>Forms of education</th>
<th>Number of graduates</th>
<th>Possible job opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPAM University</td>
<td>online</td>
<td>59K</td>
<td>95%+ of successful, motivated graduates receive job offers.</td>
</tr>
<tr>
<td>SoftServe</td>
<td>offline</td>
<td>35K</td>
<td>The course leads to an internship at the company, and the best candidates receive job offers.</td>
</tr>
<tr>
<td>ELEKS University</td>
<td>hybrid</td>
<td>7K+</td>
<td>Today, students are employed. After their internships, the best graduates will be added to a database of potential specialists.</td>
</tr>
<tr>
<td>Sigma Software University</td>
<td>online</td>
<td>4.5K per year</td>
<td>95%+ of interns stay with the company as Junior Specialists.</td>
</tr>
<tr>
<td>GlobalLogic BaseCamp</td>
<td>offline</td>
<td>2K+</td>
<td>Upon successful completion of the internship, participants have an opportunity to continue cooperation with the company on a permanent basis.</td>
</tr>
<tr>
<td>IntelliStart</td>
<td>online</td>
<td>166</td>
<td>Participants can continue their professional path in IT on their own or be interviewed for open positions.</td>
</tr>
</tbody>
</table>

*Sources: IT Ukraine Association, Forbes

*according to an ITU survey of the largest companies with corporate training programs*
IT ECOSYSTEM
WHAT IS AN IT ECOSYSTEM?

IT Ukraine Association
The preeminent national association promoting the interests of the IT industry in Ukraine and globally

Regional IT clusters and business associations
Development of all areas of the IT industry

Governmental support & ITA
Grants, donors projects, promotion activities

Education and science
Establishing a robust groundwork for future growth in the IT sector at the state and corporate levels

IT professionals and specialists
A team of talents that creates a product and generates ideas

Policy & Regulatory issues
Laws, rules, and regulations governing

Innovation and research
Research and development of new technologies and creation of startups

Leading technologies
High-quality network infrastructure, big data analytics and data storage, processing and exchange services

Sources: open data
MINISTRY FOR THE IT INDUSTRY

Almost every country has a specialized ministry that regulates and stimulates the development of the IT industry.

Key objectives of specialized ministries by country

**BRAZIL**

**Ministry of Science, Technology, and Innovation**

- **Key objectives**
  - Implementing the E-Digital Strategy (Enabling Axes):
    - ICT infrastructure and access
    - Research, Development, and Innovation
    - Trust in the digital environment
    - Education and professional training
    - International dimension
  - Digital transformation of the economy:
    - Data based economy
    - A world of connected devices
    - New business models

**Ministry of Industry and Trade**

- **Key objectives**
  - Digitalization: public administration (e-governmental solutions), society, value-based government
  - Enhancing cybersecurity measures and resilience; promoting the adoption of the best cybersecurity practices among both businesses and individual citizens
  - Implementing the Right to Digital Services Act
  - Making all public services accessible digitally by 2025 (for every citizen)

**CZECHIA**

**Ministry of Industry and Trade**

- **Key objectives**
  - Digitalization: public administration (e-governmental solutions), society, value-based government
  - Enhancing cybersecurity measures and resilience; promoting the adoption of the best cybersecurity practices among both businesses and individual citizens
  - Implementing the Right to Digital Services Act
  - Making all public services accessible digitally by 2025 (for every citizen)

**IN India**

**Ministry of Electronics and Information Technology**

- **Key objectives**
  - e-Government: providing e-infrastructure for delivery of e-services
  - e-Industry: promotion of electronics hardware manufacturing and IT-ITeS industry
  - e-Innovation / R&D: implementing R&D framework, creating relevant infrastructure, establishing mechanism for R&D translation
  - e-Learning: providing supporting the development of e-Skills and knowledge network
  - e-Security: securing India’s cyber space
  - Building a ubiquitous digital infrastructure to ensure ease of living

**Ministry of Digital Affairs**

- **Key objectives**
  - Responsible for digital policies, public administration reform, public sector digitalization, and development of electronic government
  - Achieving user-friendly and advanced public e-services via the European Funds for Digital Development, the newest edition of the OP Digital Poland for 2021-2027

**POLAND**

**Ministry of Digital Affairs**

- **Key objectives**
  - Developing an “electronic government” as of 2024, it is already 90% “mature” for services and 85% for citizens

Sources: Ministry of Science, Technology, and Innovation (Brazil), Ministry of Industry and Trade (Czechia), Ministry of Electronics and Information Technology (India), Ministry of Digital Affairs (Poland), open data
MINISTRY OF DIGITAL TRANSFORMATION

Ukraine has its own specialized ministry, the Ministry of Digital Transformation of Ukraine, established on 2 September 2019. The youngest minister in the history of Ukraine, Mykhailo Fedorov, became its head.

Main functions and tasks of the Ministry

- Forming and implementing state policy in digitalization, open data, and national electronic information resources
- Implementing electronic services and developing the digital literacy of citizens
- Developing broadband Internet access, telecommunications networks, and the IT industry
- Serving as the central certification authority in the field of electronic trust services

Mykhailo Fedorov is a visionary of Ukraine's digitalization

Ukraine's youngest minister is very ambitious. In 2020, he was included in the Ukrainian Forbes 30 Under 30 list as a young visionary. In 2022, Time magazine included him in the global TIME100 Next list in the Innovators category.

Ministry's goals

- 100% public services for citizens and businesses to be available online
- 95% high-speed Internet access to the transport infrastructure of settlements and their social facilities
- 6 mln Ukrainians to acquire digital skills
- up to 10% Increase the share of IT in Ukraine's GDP

Source: Ministry of Digital Transformation of Ukraine
DIGITALIZATION OF PUBLIC SERVICES

Today, the digitalization of public services is a necessary step. It considerably facilitates the lives of citizens by providing easy access to services, process automation, and electronic signatures. This approach is essential for all countries, affecting economic development and reducing corruption.

Digitalized bureaucratic services in countries

**BRAZIL**

- One of the leaders in digital transformation
  - Implemented E-digital: promoting digital inclusion, strengthening cybersecurity, encouraging technology entrepreneurship, digitizing public services, and promoting digital education
  - Digitalization has positively impacted efficiency, cost savings, and increased citizen participation
  - Gov.br platform offers thousands of online services

**CZECHIA**

- Cross-border Digital Public Administration Services
  - Provision of public services to citizens and businesses in other European countries:
    - extract from state basic registers
    - provides information on the current status of citizen appeals to public administration bodies
    - accesses a personal archive of documents related to public administration

**INDIA**

- Enhancing Digital Transactions
  - Unified Payments Interface (UPI) revolutionized digital payments, processing over $1.5 trillion in transactions in 2022

- Access to Government Services
  - Unified Mobile Application for New-age Governance and myScheme simplify access to government services through a unified platform
  - Common Service Centres provide assisted access in rural areas, offering services in over 22 languages and voice-enabled assistance

**POLAND**

- The mobile citizen app 'mObywatel' (mCitizen)
  - Access to various public services via smartphone
  - Accepted as valid identification for voters in parliamentary elections

- e-Tax Office
  - Comprehensive online tax services, personalized user experience, and automated workflows for citizens and businesses

- e-PIT
  - A component that provides pre-filled income tax returns for individual entrepreneurs not engaged in business activities and simplifies compliance with tax laws

Sources: ABES, Interoperable Europe, OECD, The Economist, Ministry of Electronics & IT (Government of India), AIAIT, Invest India, Ministry of Finance of the Republic of Poland, ACM Digital Library
**DIGITALIZATION IN UKRAINE**

### Digitalized government services

- **64%** Ukrainians used state e-services in 2023
- **78.5%** rate the experience of receiving services rather or very positively
- **20 mln** Ukrainians use the Diia app, including 14 digital documents and over 30 government services

The government aims to digitize 100% of public services in the Diia app. The Global Innovation Vision of Ukraine set 2030 as the deadline for achieving this goal.

### Diia is an ecosystem of digital service platforms

**Diia** is an app for digital documents and services

**Diia.City** is a legal regime for developing Ukrainian IT companies

**Diia.Digital Education** is a portal with online courses on basic literacy and, for teachers and parents, "Online Safety for Children"

**Diia.Business** is a one-stop shop platform for future and experienced entrepreneurs with answers to all questions

**E-Residency** is an online service that allows foreigners to do business online in the jurisdiction of Ukraine and open bank accounts

### Hundreds of public services are already digitalized

**Structure of digitalized public services**, number

- 125 Production and turnover of certain product types
- 92 Fuel and energy complex, water supply
- 51 Social protection
- 40 Finance and taxes
- 37 Land and environment
- 30 Life safety
- 22 Construction and real estate
- 18 Education, sports and tourism, culture and religion
- 17 Activities of business and public organizations
- 16 Transportation
- 12 Other

### 10 most popular services in Diia*

- Military bonds
- Services for internally displaced persons
- Exchange of incandescent lamps for new LED lamps
- eRecovery. Restoration of damaged housing
- Replacement of a driver’s license
- Car sharing
- Services for individual entrepreneurs: automatic registration, changes, and automatic closure
- Construction services
- eMalyatko. Services for the birth of a child
- Marriage registration

*according to Diia*
Diia.City — a unique tax and legal space for IT companies in Ukraine

880+ companies are residents of the space

65K+ specialists work for resident companies

2,150

41%

active verified IT companies in Ukraine that are residents of Diia.City

Advantages of Diia.City

Diia.City offers a range of incentives for IT business development. The space conditions will allow Ukrainian companies to develop more actively, scale up, and attract investments. The project was created with the industry to meet its interests to the fullest extent possible.

Special taxation conditions for resident companies and for their employees and gig specialists. Diia.City’s tax system is one of the best in Europe. The tax burden is almost five times lower than in the general taxation system.

A company can choose different forms of cooperation: an employment contract, an individual entrepreneur’s model (their number in the company’s structure is determined by specific conditions), or a gig contract (for specialists, it preserves the benefits of freelancing; for companies, it allows them to do business transparently with a favorable tax burden).

Elements of UK law have been implemented, specifically, universal tools for protecting corporate rights and stimulating venture capital investment. Ukrainian legislation on intellectual property rights was harmonized with global legislation, eliminating legislative gaps and conflicts regarding the distribution of rights to work for hire and work made to order.

Other countries

Ukraine has prioritized providing perhaps the best legal and tax environment for IT companies in the world. Most countries engaged in digitalization prefer, however, conditions tailored to “digital nomads”.

Remote workers are entitled to comfortable living and taxation arrangements, usually limited to several years.

Some countries go beyond an employment verification requirement, such as Czechia, and require a certificate of IT education and work experience.

Other countries, such as Brazil, prohibit employees from joining local companies.

Some countries, such as Poland, encourage employment, particularly in the technology sector, and provide a legal basis for their establishing companies in (IT) business ecosystem. For example, Diia.pl is modeled and targeted at Ukrainian workers, and issues individual business visas with a Polish clientele required.

Sources: Ministry of Digital Transformation of Ukraine, open data
For a long time, Ukraine was depicted as a "white spot" regarding innovations and entrepreneurship spirit. Until 2018, there were no unicorn startups in Ukraine. In recent years, however, at least six companies with a billion-dollar valuation have emerged. This trend indicates the overall development of the startup ecosystem and its potential unlimited prospects.

Startup industry in Ukraine

<table>
<thead>
<tr>
<th>Market size, EUR bln</th>
<th>Number of startups</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017: 2.6</td>
<td></td>
</tr>
<tr>
<td>2022: 23.3</td>
<td>2,600</td>
</tr>
</tbody>
</table>

90% of startups see high growth potential in the future

62% of startups see their advantage in flexibility and ability to adapt to changing circumstances

Ukraine has given birth to many talented startups

<table>
<thead>
<tr>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grammarly</td>
</tr>
<tr>
<td>Depositphotos</td>
</tr>
<tr>
<td>GitLab</td>
</tr>
<tr>
<td>AJAX</td>
</tr>
<tr>
<td>Readable</td>
</tr>
<tr>
<td>Preply</td>
</tr>
<tr>
<td>MacPaw</td>
</tr>
<tr>
<td>Competera</td>
</tr>
<tr>
<td>PetCube</td>
</tr>
<tr>
<td>Restream</td>
</tr>
<tr>
<td>Reface</td>
</tr>
<tr>
<td>Firefly Aerospace</td>
</tr>
<tr>
<td>People.ai</td>
</tr>
<tr>
<td>3DLOOK</td>
</tr>
</tbody>
</table>

Support programs for the development of startups

The Ukrainian Startup Fund is a one-of-a-kind state institution that helps innovative projects and technology startups raise funds in the early stages and launch their projects.

The whole world is witnessing vibrant and dynamic growth in the Ukrainian technological ecosystem, while all of us stand united in a mission to elevate Ukrainian ingenuity on a global scale, positioning our startup ecosystem as a beacon for future technological breakthroughs. Our commitment is unwavering towards spawning success narratives that not only redefine our local tech landscape but also cast a lasting influence globally.

EIT is an independent body of the European Union created to support and implement innovations and technologies. In 2023, EIT launched a regional hub in Ukraine with an office in Kyiv.

The speed and adaptability of Ukrainian businesses and startups can set an example for the global ecosystem. Readiness for change, innovation in processes and solutions, as well as courage and resilience to any circumstances are our key advantages. We are constantly working on developing European ties in Ukraine to create a single platform for knowledge exchange, support and expertise.

Sources: Ukrainian Startup Fund, EIT
IT INDUSTRY CHALLENGES

BRAZIL
- Unequal access to the benefits of the digital economy
- Instabilities in the trade flows of essential digital products and inputs
- Growing threats to privacy and cybersecurity

INDIA
- Too much emphasis on low-quality IT services can impede movement up the value chain
- Excessive dependence on the export market and lack of qualified technical specialists
- Neglect of Electronic Hardware Manufacturing

CZECHIA
- Bureaucracy burdens businesses, despite measures taken by authorities
- The lack of ICT specialists is the biggest obstacle to digitalization
- Infrastructural bottleneck issues that could hinder future digitalization efforts

POLAND
- Increased layoffs in the IT sector, especially in outsourcing
- Budget cuts instead of investments in new technologies
- Rising business costs due to inflationary policy

Sources: MCTI (Brazil), International Trade Administration, NIFO, OECD, The Times of India, IJTRD, European Commission
IT INDUSTRY CHALLENGES IN UKRAINE

In 2023 for the first time in its history, the export of IT services decreased

The reasons

1. Full-scale war - international partners are hesitant to sign new contracts with Ukrainian IT companies.
2. Global trends - slow economic growth, massive staff reductions by tech giants.

What does this affect?

Decrease in exports negatively affects the country's foreign exchange earnings and the overall situation in the IT industry. The IT industry is almost entirely export-oriented, so its decline significantly reduces growth opportunities for tech companies.

How will it be solved?

The Ministry of Digital Transformation will continue to create all conditions for the stable operation and growth of the IT industry. To this end, Diia.City will be developed so that tech companies can use the space. The state has taken on the role of an ambassador for the IT industry, both domestically and abroad, to actively work on shaping Ukraine's image as a mighty technological power.

The biased attitude of international partners toward Ukrainian companies due to the full-scale war

The reasons

Because of the Russian invasion, global customers of Ukrainian IT services fear that contracts will not be fulfilled on time and with quality.

What does this affect?

International partners are afraid to sign new contracts with Ukrainian IT companies, which affects the export of IT services. Foreign vendors are often looking for other markets where there are fewer risks and more predictability.

How will it be solved?

The main advantage of Ukrainian business, which will continue to be improved the developers' high qualifications and willingness to work on the most complex projects in all possible niches. There is almost no other ratio of such high quality to cost of IT services on the international market.

The state will continue actively communicating with international partners, convincing them that Ukrainians are reliable partners and that the Ukrainian IT industry is robust and sustainable.

Businesses must join forces to create a positive image of Ukraine as a reliable partner and provider of quality IT services.

Source: Ministry of Digital Transformation of Ukraine
DEVELOPMENT PROSPECTS

BRAZIL

- Implementation of cloud technologies as part of a nationwide digital initiative. In 2022, cloud computing generated significant revenue estimated at $12.8 billion.

- Brazil's IT consulting and implementation market is forecast to grow at a CAGR of 6.13% (2024-2028), resulting in a market size of $1.37 billion in 2028.

- The Brazilian IT outsourcing market is expected to experience growth, with application management driving market growth as digital transformation increases relevance.

INDIA

- The Indian IT industry is increasing, with an expected CAGR of 10%, driven by new technologies and an increasing demand for skilled IT professionals.

- Promoting the IT/ITeS sector. The Indian government has undertaken important initiatives focusing on cybersecurity, hyperscale computing, artificial intelligence, and blockchain.

- The country's low data transmission costs and digital infrastructure provide easy access to services, which can facilitate the growth of cloud computing, artificial intelligence, and other emerging technologies.

CZECHIA

- ICT exports will reach $6.6 billion by 2026, growing by an average of 3.2% annually.

- The Czech Republic's ICT revenues are projected to reach €24.3 billion by 2026, growing by an average of 2.1% annually.

- The Czech Republic's IT sector is expected to continue growing, focusing on software development, cybersecurity, and analytics.

POLAND

- By 2028, Poland's IT market is projected to reach 4.5% of its GDP. This growth is driven by increasing demand for IT services.

- The number of Polish enterprises in the IT sector is growing by an average of 10.1% per year. This growth in the number of startups is a testament to the flourishing of innovation and entrepreneurship.

- The Polish government is investing in IT infrastructure and services, and this is expected to continue, providing a favorable backdrop for the growth of the IT industry.

Sources: OECD, EU Commission, MCTI Brasil, MEITY India, U.S. Department of Trade, Statista, The Economist
# Development Prospects in Ukraine

## Global Leadership in Developing Defense Technologies

**Prerequisite**
- The war stimulated the emergence of many companies that test their developments on the battlefield.

**Potential Positive Impact**
- The share of the product sector in IT and new export ability through unique developments will increase.

**Business Plan for Realization**
- Companies should have a transparent corporate structure to attract investment. To do this, they can join Diia.City and operate under favorable tax conditions.

**State Plan for Realization**
- The Brave1 coordination platform has already been launched to support projects. The priority is to find investors for scaling.

## Increase the Number of Successful Startup Projects

**Prerequisite**
- A large number of talented developers who, despite the war, are creating startups that are often unique.

**Potential Positive Impact**
- A large number of innovative companies emerges. Export potential and competitiveness in global markets will grow.

**Business Plan for Realization**
- Companies are actively participating in trade missions to attract investors, clients, and partners. In 2023, 200 Ukrainian startups showcased their developments at 19 of the world’s most prominent technology events.

**State Plan for Realization**
- The Government is fostering a culture of technological entrepreneurship among schoolchildren and students, creating acceleration opportunities, and simplifying access to investment and grant opportunities.

## Restore Export Growth in 2024

**Prerequisite**
- Ukrainian IT companies have adapted to working under martial law. They have retained their human resources and expertise.

**Potential Positive Impact**
- With more foreign exchange earnings, the industry's turnover will grow, which will positively impact further development.

**Business Plan for Realization**
- IT companies plan to enter new markets and launch new projects, including unique products.

**State Plan for Realization**
- The Ministry of Digital Transformation acts as an ambassador for the IT industry and creates conditions for its sustainability.
MYTHS ABOUT UKRAINE

Ukraine is a young country with a unique IT infrastructure and a developed digital economy. Over the past 12 years alone, the share of IT services exports in Ukraine has increased 18-fold, and the share of computer services exports in total services exports is 41.0%.

The most common myths about Ukraine

1. Working with Ukraine is dangerous
   - Ukraine is an attractive country for cooperation due to its talented IT professionals, innovative IT industry, and strategic location in Europe. Many technology companies are opening offices and operating successfully in Ukraine. The economic potential and successful management of security risks make Ukraine an attractive partner for cooperation and investment.

2. Corruption is rampant in Ukraine
   - The government at all levels is actively fighting the phenomenon of corruption. Ukraine's anti-corruption system includes many effective structures. Digitalized public procurement and administrative services are actively implemented, which is the most significant deterrent to corruption.

3. Ukraine is a predominantly agricultural country
   - Industry, construction, science, technology, and more are developing in Ukraine. Thus, in 2023, the IT industry became the second-largest export industry, accounting for 41% of total services exports from Ukraine.

4. Ukrainians do not speak English
   - About 68% of Ukrainians, especially the younger generation and IT professionals, speak foreign languages.

5. Ukraine is a poor country
   - Ukraine has a dynamic economy and an active IT sector. Ukraine's economy was resilient throughout 2023 and has shown GDP growth up to 5.7%.

Sources: Ukrainian Institute for the Future, Incredible Tech, dou.ua, Ministry of Finance of Ukraine, Kyiv International Institute of Sociology
Security is an essential factor for doing business, and it covers a wide range of issues – from direct property protection to the overall security situation in the country. Security threats can arise unexpectedly, so systematic and high-quality risk management should be a priority for any company.

**Security Threat Index, points**

The Security Threat Index consists of The Security Apparatus indicator from the Fragile States Index. This Index considers security threats to a state, such as bombings, attacks and battle-related deaths, rebel movements, mutinies, coups, and terrorism.

Brazil, India, and Ukraine all had roughly the same index value until 2022. But the reasons for the high index were different: Brazil and India had problems with cartels, banditry, and crime; while Ukraine had been at war with Russia for ten years.

The Security Threat Index can range from 0 to 10. The higher the value, the more the threats to the state.

<table>
<thead>
<tr>
<th>Year</th>
<th>Poland</th>
<th>Czechia</th>
<th>India</th>
<th>Brazil</th>
<th>Ukraine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>2.1</td>
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<td>7.1</td>
<td>6.8</td>
<td>7.4</td>
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<td>2.4</td>
<td>3.2</td>
<td>7.2</td>
<td>6.9</td>
<td>7.1</td>
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<td>2019</td>
<td>2.7</td>
<td>2.9</td>
<td>6.6</td>
<td>6.6</td>
<td>7.0</td>
</tr>
<tr>
<td>2020</td>
<td>2.4</td>
<td>2.6</td>
<td>6.3</td>
<td>6.8</td>
<td>6.8</td>
</tr>
<tr>
<td>2021</td>
<td>2.1</td>
<td>2.3</td>
<td>6.0</td>
<td>7.1</td>
<td>6.5</td>
</tr>
<tr>
<td>2022</td>
<td>1.8</td>
<td>2.0</td>
<td>6.0</td>
<td>6.2</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Russia's full-scale invasion of Ukraine

Source: The Fund for Peace
SECURITY IN UKRAINE

In 2022, Russia invaded Ukraine and started a full-scale war, and the security threat index for Ukraine reached the highest level (10). However, Russia’s aggression began much earlier. In 2014, it annexed Ukraine's Crimea and started the war in Donbas. This aggression led to a severe decline in the Ukrainian economy. In 2022, the country was more resilient to military risks, although the scale of hostilities was much greater.

Security Threat Index* for Ukraine

<table>
<thead>
<tr>
<th>Year</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>7.9</td>
</tr>
<tr>
<td>2013</td>
<td>7.8</td>
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<tr>
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<td>7.6</td>
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<tr>
<td>2016</td>
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<tr>
<td>2017</td>
<td>7.0</td>
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<td>2018</td>
<td>6.7</td>
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<td>2019</td>
<td>6.4</td>
</tr>
<tr>
<td>2020</td>
<td>4.4</td>
</tr>
<tr>
<td>2021</td>
<td>4.7</td>
</tr>
<tr>
<td>2022</td>
<td>10.0</td>
</tr>
</tbody>
</table>

*index can range from 0 to 10. The higher the value, the more the threats in the state

GDP of Ukraine, USD bln

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP, USD bln</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>112.1</td>
</tr>
<tr>
<td>2013</td>
<td>130.9</td>
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<tr>
<td>2014</td>
<td>156.6</td>
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<tr>
<td>2015</td>
<td>153.9</td>
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<tr>
<td>2016</td>
<td>190.5</td>
</tr>
<tr>
<td>2017</td>
<td>175.8</td>
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<tr>
<td>2018</td>
<td>133.5</td>
</tr>
<tr>
<td>2019</td>
<td>-29.9%</td>
</tr>
<tr>
<td>2020</td>
<td>-31.8%</td>
</tr>
<tr>
<td>2021</td>
<td>-19.7%</td>
</tr>
</tbody>
</table>

Ukrainian economy, business, and society demonstrate resilience in times of war

GDP, USD bln

- 2021: 199.8
- 2022: 160.5
- 2023: 169.5

New businesses opened, thou.

- 2021: 340.5
- 2022: 231.5
- 2023: 341.3

Taxes paid to the consolidated budget, USD bln

- 2021: 53.3
- 2022: 41.5
- 2023: 44.8

Sources: The Fund for Peace, National Bank of Ukraine, Opendatabot, Ministry of Finance of Ukraine

*index can range from 0 to 10. The higher the value, the more the threats in the state.
UKRAINIAN IT MITIGATION STRATEGY

Actions taken by Ukrainian IT companies to effectively manage and mitigate risks

1. **Market diversification**
   Companies reduce the risk of economic and political changes in Ukraine by expanding their customer base to foreign markets that are not dependent on a specific geographic region.

2. **Offer segmentation**
   Companies choose their priorities wisely and concentrate their efforts on the most promising segments of the IT industry where they have the best expertise.

3. **Resources for crisis management**
   Creating a crisis management team and developing BCP plans ensure that companies are constantly prepared for any crisis, can effectively respond to adverse events, and can minimize consequences.

4. **Increasing cybersecurity**
   Investing in cybersecurity tools and conducting regular audits provides protection against potential cyberattacks and data breaches.

5. **Active communication and lobbying**
   Participation in professional associations and public communication with the authorities helps companies keep abreast of the latest changes in legislation and influence regulatory processes in the industry.

6. **Infrastructure redundancy**
   Providing backups and backup storage on secure servers outside the country reduces the risk of data loss in unforeseen circumstances.

Sources: IT Ukraine Association based on interviews with IT companies, open data.
VALUE OF UKRAINE'S IT INDUSTRY
The IT Ukraine Association analyzed the core competencies and emerging trends within the sectors of activity for the dominant Ukrainian IT service and product companies. The Association has identified areas in which Ukraine has a strong positioning on the global IT landscape.

In line with the nation’s commitment to innovation, the Ukrainian Global Innovation Vision 2030 (according to the WINWIN strategy) articulates priority areas for the coming years.

**Areas in which Ukraine has a strong position**

**Industrial Tech**
- DefenseTech
- HealthTech
- EdTech
- Martech & Media
- FinTech
- Software & Hi-Tech
- eCommerce
- GovTech
- CyberTech & Cybersecurity

**Priority areas of innovation by 2030**

- **2024-2027**
  - DefenseTech
  - MedTech
- **2024-2030**
  - AgriTech
  - XR
- **2024-2035**
  - UAV
  - BioTech
  - GreenTech

**Cross-cutting directions**

- AI
- Semiconductors
- Secure Cyberspace
- Fluid Economy
- EdTech
- GovTech
M&A IN IT IN UKRAINE

The Ukrainian M&A market in the IT sector has not been significantly affected by the war but deals are still infrequent. Successful projects periodically make exits. For example, the Lifecell deal has not yet been closed, but if it does in 2024, it will significantly impact the M&A market this year.

Dynamics of M&A deals in the Ukrainian IT market

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of deals</th>
<th>Total, USD mln</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>16</td>
<td>505.1</td>
</tr>
<tr>
<td>2018</td>
<td>12</td>
<td>12.0</td>
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<tr>
<td>2019</td>
<td>20</td>
<td>910.8</td>
</tr>
<tr>
<td>2020</td>
<td>16</td>
<td>135.6</td>
</tr>
<tr>
<td>2021</td>
<td>43</td>
<td>225.8</td>
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<tr>
<td>2022</td>
<td>10</td>
<td>146.0</td>
</tr>
<tr>
<td>2023</td>
<td>11</td>
<td>161.2</td>
</tr>
</tbody>
</table>

Deals by sector in 2023

1. Telecom
2. Design
3. GameDev
4. MarTech
5. Software development

M&A deals in 2023

- 7 deals with an estimated value: 95.2 USD mln
- 4 deals with disclosed amounts: 161.2 USD mln

Top 5 M&A deals in 2023

1. Dmarket: 85.0 USD mln, investor: Mythical Games (USA)
2. YouAppi: 45.0 USD mln, investor: Affle International (India)
3. Freenet LLC: 15.0 USD mln, investor: Vodafone Ukraine (Ukraine)
4. Artkai: 4.0 USD mln, investor: Euvic Group (Poland)
5. 7Devs: 3.0 USD mln, investor: Euvic Group (Poland)

Sources: mind.ua, Crunchbase, Dealroom, ain.ua, Unified State Register of Legal Entities (analysis in cooperation with Clarity Project)

*The study includes deals in various segments of the technology industry, such as IT, communications, internet providers, and so on.
VENTURE CAPITAL AND PE IN UKRAINE

Over the last two years, local venture capital industry has seen a downturn due to war, leading to fewer investments in Ukrainian teams. Historically, they thrive by focusing on the US market. However, it’s predicted that the sector will rebound strongly once the conflict ends, fueled by accumulated demand and the comeback of teams that had relocated temporarily.

Dynamics of private equity and venture capital deals in the Ukrainian IT market

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of deals</th>
<th>Total, USD mln</th>
</tr>
</thead>
<tbody>
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<tr>
<td>2020</td>
<td>163</td>
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<td>2021</td>
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<tr>
<td>2022</td>
<td>184</td>
<td>826.0</td>
</tr>
<tr>
<td>2023</td>
<td>82</td>
<td>228.8</td>
</tr>
</tbody>
</table>

Venture capital investment and PE deals in 2023

- 21 deals with an estimated value
- 61 deals with disclosed amounts

Top 5 deals in 2023

1. Preply (EdTech) - 70.0 USD mln
2. Fintech Farm (FinTech) - 22.0 USD mln
3. DressX (E-commerce) - 15.0 USD mln
4. GoIT (EdTech) - 12.5 USD mln
5. Carmoola (FinTech) - 10.9 USD mln

Deals by sector in 2023

- Other: 35
- Software development: 8
- Fintech: 7
- HR Tech: 5
- EcoTech: 5
- Medtech: 5
- Martech: 8
- Other sectors: 8

Sources: mind.ua, Crunchbase, Dealroom, ain.ua,
Unified State Register of Legal Entities (analysis in cooperation with Clarity Project)
Tvoe Kolo is a management company, a leading player in the market of investing in Ukrainian agricultural land. Since 2007, we have been working in land relations. Since 2021, we have been encouraging the implementation of land reform and the establishment of a full-fledged institution of private property.

Land is one of the most valuable and most undervalued Ukrainian assets. Every day, our team works to make the land asset a simple and reliable investment tool for Ukrainians.

- Asset with high potential for value growth;
- Low-risk asset;
- Passive investment;
- Limited asset;
- Quasi-currency asset.

E-mail: info@tvoekolo.com.ua
Website: tvoekolo.com.ua
Head office: Kyiv, Ukraine

Andriy Usenko
Co-founder
Denys Gonchar
Co-founder

317 clients
57% of investors are IT specialists
₴636M in assets

MORE INFO ABOUT THE PROJECT
The values of the IT industry in Ukraine are characterized by the scale of tasks, the level of societal development, and the experience of working with clients.

*according to an ITU expert assessment based on interviews with stakeholders and IT company public policies

Source: IT Ukraine Association
Devlight is a mobile app development company with 7 years of experience building world-class apps for Forbes Top 100 businesses. We know how to shape digital leaders and create apps that are valued.

- **7** years on market
- **35M** total app installs
- **100+** created products
- **450K** monthly active users

**KEY SERVICES**
Creating innovative and scalable digital products for startups and enterprises that will enable rapid business growth. Engage users with an exceptional mobile experience.

**COMPANY VALUE**
Expertise in mobile app development. We build apps that exceed your expectations through a flexible and user-oriented approach. Top talent, latest tech, and quality BA with stunning UX/UI designs.

**AREAS OF SPECIALIZATION**
- Retail and E-Commerce
- Neobank & Fintech
- Loyalty Program
- Healthcare
- Logistics

**E-mail:** hello@devlight.io  
**Website:** devlight.io

**PROZORRO.SALE**
E-auction system for efficient and transparent sale and lease of public assets, to generate funds for the country’s development, and increase trust among state, society and international partners. The system is 2-level: (1) state IT core and (2) private e-marketplaces.

- **100K** auctions in a year
- **20%** success rate
- **41%+** starting price increase

**KEY PRODUCT BENEFITS / FEATURES**
- Maximize profit for the state – Enhanced competition among Buyers from private Marketplaces.
- Increase trust among society and international partners – Open-Data and “Everyone sees everything” principle.
- Save costs – Reduction of parallel sales roles across different Ministries/Authorities.

**E-mail:** info@prozorro.sale  
**Website:** prozorro.sale

**MORE INFO ABOUT THE PROJECT**
NGO "Barrier-Free" is the implementation partner of the initiative "Without Barriers", spearheaded by First Lady Olena Zelenska, which strives to foster an equal opportunities society in Ukraine.

Partnering with NGO "Barrier-Free", Ukrainian IT companies implement groundbreaking projects in the DE&I realm – diversity, equity, inclusion, including:

- Digital Accessibility Training Program for University Students
- Educational Program "IT for Veterans"
- Digital Volunteering
- Women in Technical and Leadership Positions
- Office Accessibility
- Hiring and Employment of People with Disabilities
- Investment in mental health as an element of human resilience, identity, and productivity
- Workplace Productivity Enhancement Program

Providing equal opportunities for all Ukrainians is the goal, not for us only, it’s a true societal need. The IT industry is the most adaptive and innovative sector that shares inclusive values in ensuring barrier-free access to opportunities, developing talents, and supporting the work of the designated inclusivity teams.

Oksana Zbitnyeva, Head of the "Barrier-Free" NGO

Sources: NGO "Barrier-Free"
MOST SIGNIFICANT PROJECTS

The Ukrainian IT industry is committed to upholding high standards across all operational aspects, including environmental, social, and governance (ESG). This is demonstrated by the industry’s active engagement with the UN Global Compact in Ukraine and the alignment of IT company strategies and activities with Sustainable Development Goals (SDGs).

12 most significant projects undertaken by Ukrainian IT companies were in the following areas:

- Ecology
- Innovations
- Anti-corruption
- Cyber security
- Gender equality
- Partnership development
- Training Ukrainians in IT specialties from 0
- Sustainable Development Goals (SDGs)

Participants from IT industry

Cyber.Unit Technologies
N-iX
BIMEX UKRAINE
Intellias
InDevLab
IT-INTEGRATOR
Ukrainians
Training Ukrainians
in IT specialties from 0
Sustainable Development Goals
 Participating companies are part of The UN Global Compact

Ukrainian IT demonstrates resilience and high adaptability despite the full-scale Russian invasion and all the challenges. Our companies actively implement international standards and pay attention to ESG, Sustainable Development Goals, and the Ten Principles of the UN Global Compact. The IT business is one of the most agile and innovative. IT companies actively participate in the UN Global Compact Ukraine’s educational programs and campaigns. They are pushing the sustainability agenda in Ukraine, reporting on their progress, and cooperating with international partners. Our IT sector participants are always open to global initiatives and fruitful cooperation with international stakeholders.

Source: UN Global Compact Ukraine
Since 1993 EPAM Systems has used its software engineering expertise to become a leading global provider of digital engineering, cloud and AI-enabled transformation services, as well as a leading business and experience consulting partner for global enterprises and ambitious startups. We address our clients’ transformation challenges by fusing integrated strategy, experience and technology consulting with our 30+ years of engineering execution to speed our clients’ time to market and drive greater value from their innovations and digital investments.

Alongside its business operations, EPAM also dedicates daily attention to providing support to Ukraine. For two years, we have been consistently working in three directions as part of the EPAM Response program:

• providing humanitarian and medical assistance to Ukrainians;
• supporting educational initiatives and helping veterans adapt to everyday workflows;
• assisting the state with digital transformation services.

The total sum of assistance, provided during 700 days of war, amounted to over 556 million UAH.
Gartner, a leader in researching global technologies, published the Market Guide for Ukrainian Information technology in 2023. Gartner made the crucial conclusion that the IT industry remains an actively thriving export sector for Ukraine amid the full-scale Russian invasion. Ukrainian IT companies continue to attract clients worldwide due to the high qualification of professionals, efficient service, and innovation.

The world knows Ukraine for defending its freedom with courage and ingenuity. It is time to pay attention to Ukrainian IT that mirrors the country’s spirit: It is innovative, fearless, and competent.

Gartner recommends:

- Make investment decisions in Ukraine, considering favorable government policies that support the IT sector, such as tax incentives and support for startups. Ukraine’s IT industry is motivated and functional.
- Customers and investors should weigh the wartime risks against long-term opportunities in Ukraine.
- Assess Ukrainian businesses in the same way as assessing other vendors and partners in procurement.
- Monitor conditions of the market to be ready to participate in postwar rebuilding.

Source: Gartner
Ready to explore Ukrainian IT further? Here are the next steps:

1. Share the research with your team and partners to start cooperating with Ukrainian firms
2. Subscribe to IT Ukraine Association socials to keep up with relevant news about Ukrainian IT!

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- Victoria Fedorenko
- Yevheniia Shulha
- Svitlana Arteniuk

Team:
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- Yevhen Kumka
- Vladyslav Ozernyi
- Anastasiia Tkachuk
- Vitalii Storozh
- Kseniia Yefanova
- Anastasia Budnik
- Stanislav Shum

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- itukraine.org.ua/en/home/hello@itukraine.org.ua

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Featured data collected and prepared for publication in 2023 and 2024.

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