POLICY BRIEFING 10| 2021

German Economic Team

UKRAINE

In cooperation with

INSTITUTE FOR ECONOMIC RESEARCH AND POLICY CONSULTING

IT Sector Monitor Ukraine

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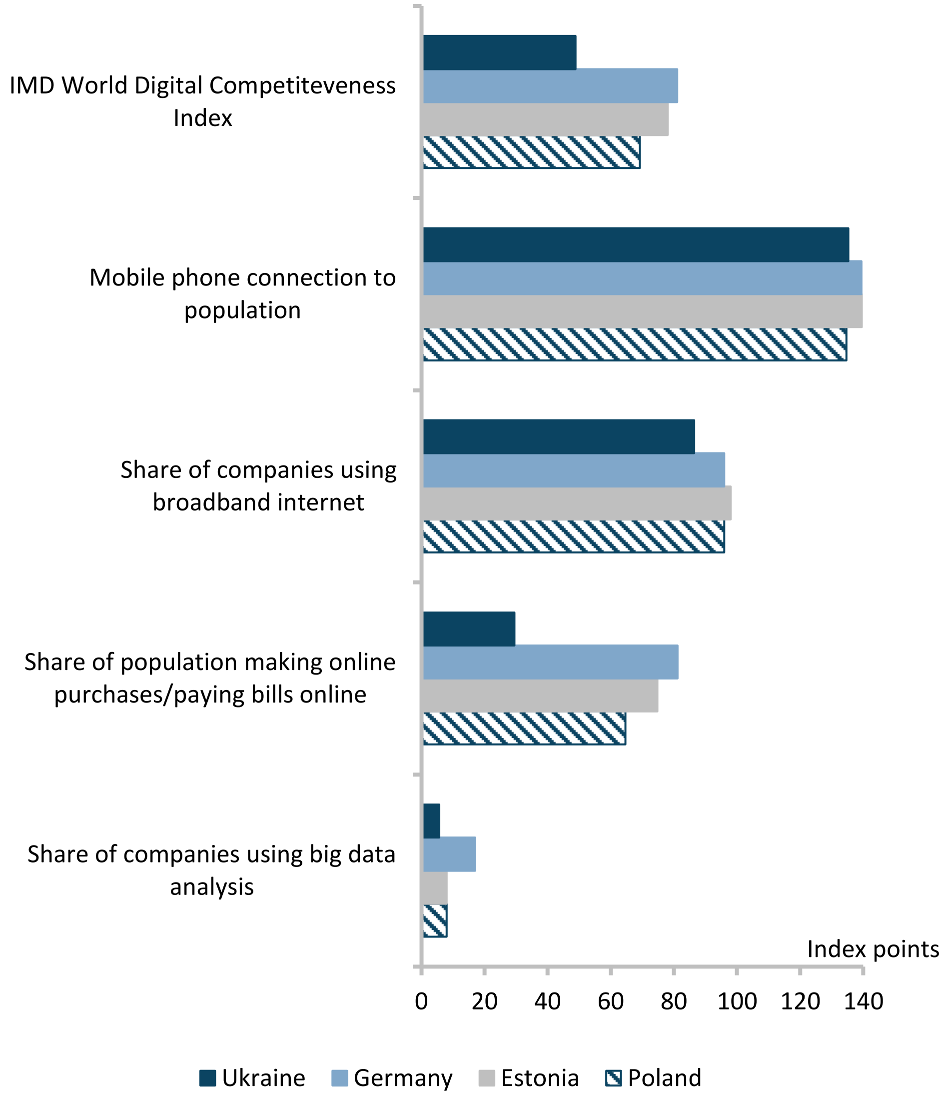
Executive Summary

- IT sector accounts for 3.1% of gross value added (GVA) in 2019, compared to 2.0% in 2015
- Employment in IT sector makes up 2.9% of total employment in UKR (including individual entrepreneurs)
- High, above-average wages make the sector highly attractive for workers, but skilled IT workers are in short supply
- Large IT service exports of USD 2.8 bn in 2020. Overall Ukraine has a limited trade surplus in IT goods and services as goods are mainly imported
- The sector is strongly dominated by IT services, especially programming. IT related retail and manufacturing only account for 15% of the sector
- IT services continue to grow fast and the sector is maturing towards more independent product companies marketing their own products
- Regional distribution: The sector is spread out over the urban areas of Ukraine with strong IT clusters in Lviv, Kharkiv, Dnipro and Kyiv
- Tax revenues from the IT sector are underrepresented compared to economic size due to widespread use of individual entrepreneurs instead of employees

Content

1. State of digitalisation in Ukraine

Indicators of digitalisation



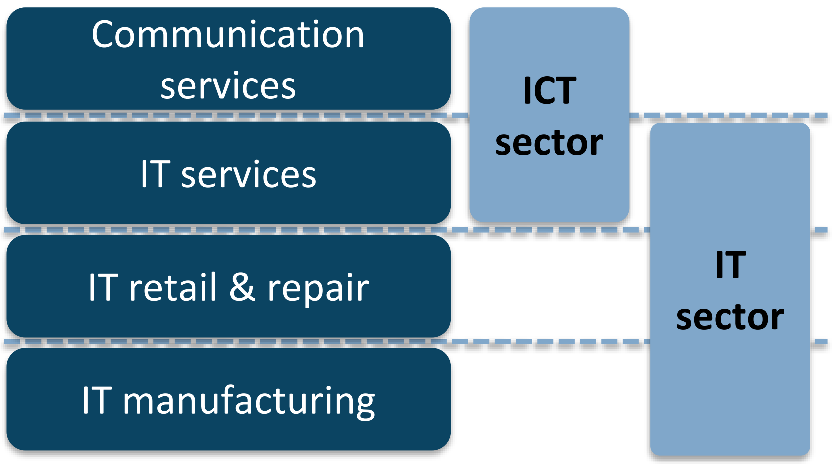
Source: Datareportal, Ukrstat, Statista, trade.gov, Eurostat, IMD

- Low IMD digital competitiveness score: Ukraine not yet ready to reap full benefits of digitalisation
- Penetration of mobile phones and broadband internet close to EU peers
- Substantial gap in uptake of e-commerce:
  - 29.5% in UKR
  - 81.2% in GER
  - 64.4% in POL
- Clearly behind Eastern EU peers in usage of big data (proxy for advanced methods in companies)
  - 5.7% in UKR
  - 8.0% in POL/EST
  - 17% in GER

➢ **Ukraine behind its peers in digitalisation of economy**

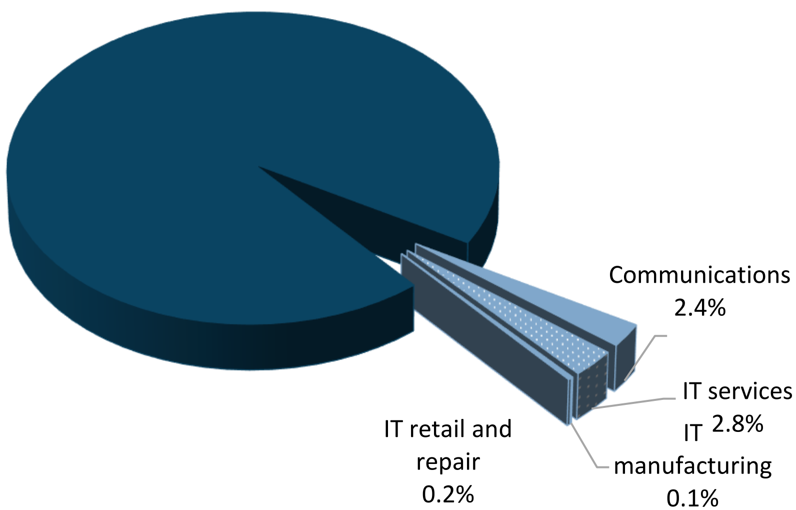
2. IT sector definition

Sector definition and components



Source: Own illustration

IT sector concepts and share of 2019 GVA

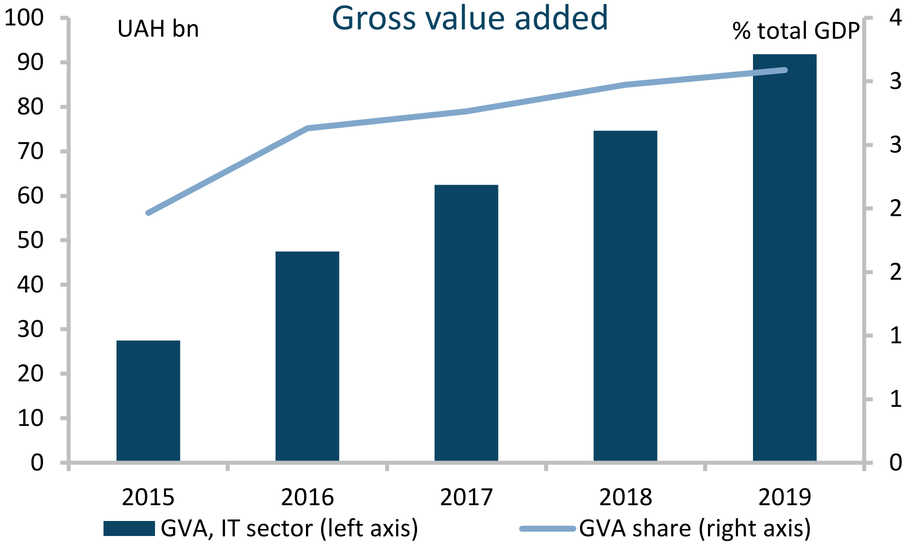


Source: Ukrstat

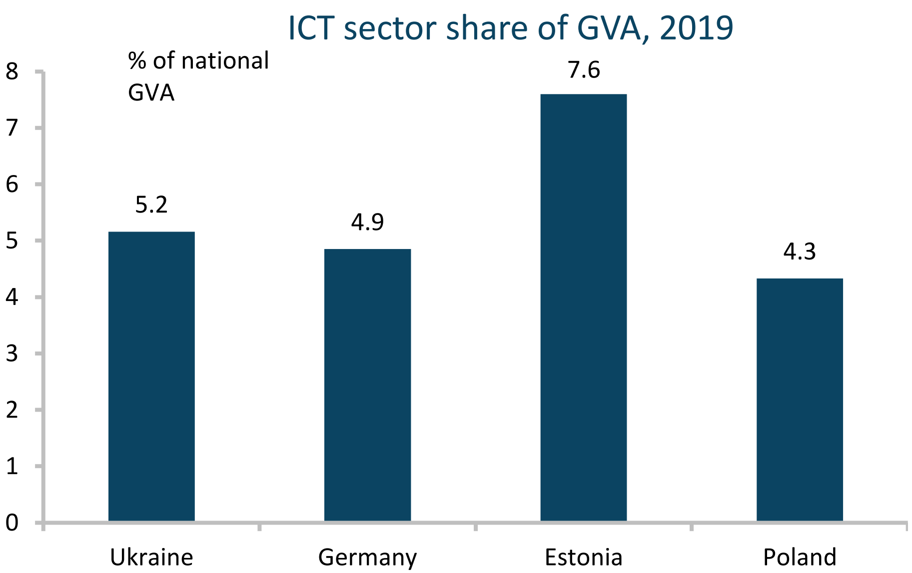
- Comprehensive IT sector concept:
  - IT services (e.g. programming)
  - Retail & repair of IT hardware and software
  - IT related manufacturing
- Difference with "ICT sector" concept (often used in statistics)
  - Communications services excluded
  - Manufacturing, retail/repair included
- IT sector in Ukraine makes up 3.1% of gross value added (GVA) in 2019
  - IT services is the largest main component of IT sector
  - Comparison: ICT sector accounts for 5.2% of GVA

➢ **Comprehensive concept used here better suited for analysing IT sector**

3. Size of the IT sector



Source: Ukrstat



Source: National statistical offices, Eurostat

Contribution to gross value added

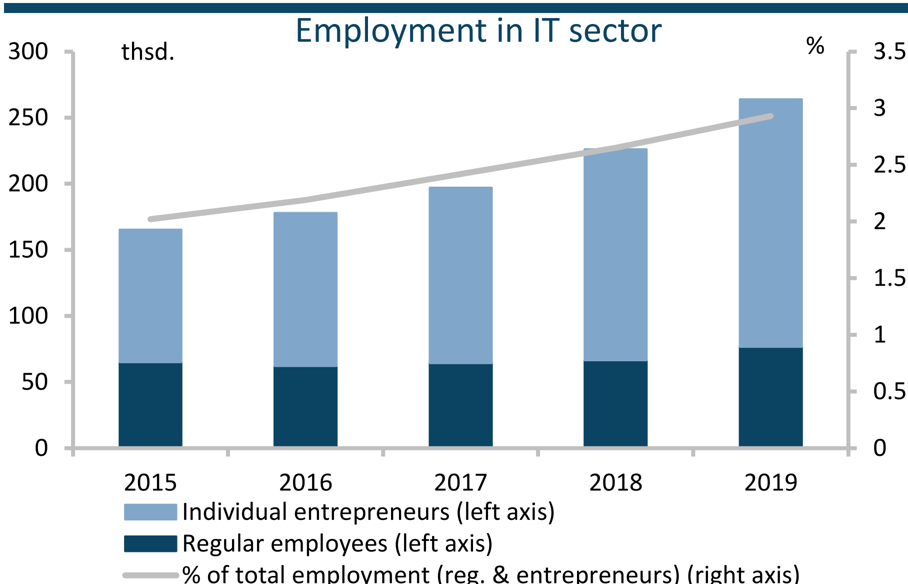
- Sector still relatively small, but its share of total GVA increased substantially
  - 2.0% in 2015
  - 3.1% in 2019
- IT sector grows 50% quicker than Ukrainian economy average

Comparison of ICT sector size

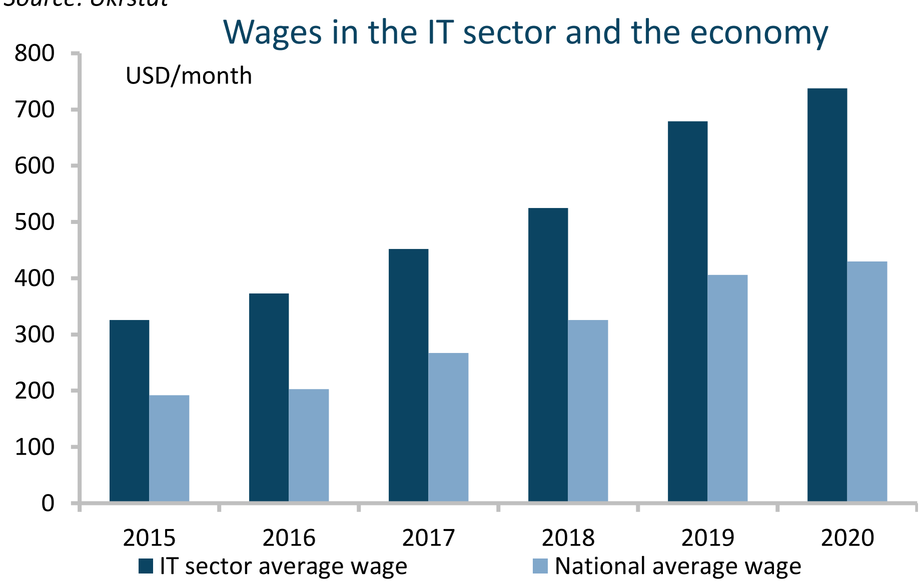
- Data only allows comparison of ICT sector (incl. Communication, excl. IT-related manufacturing, retail)
- At 5.2% of GVA, ICT sector already bigger than in Germany and Poland

➢ **IT already a strength of the Ukrainian economy; will grow further in importance**

4. Wages and number of IT specialists



Source: Ukrstat



Source: Ukrstat, note: Only regular employees' wages

Employment

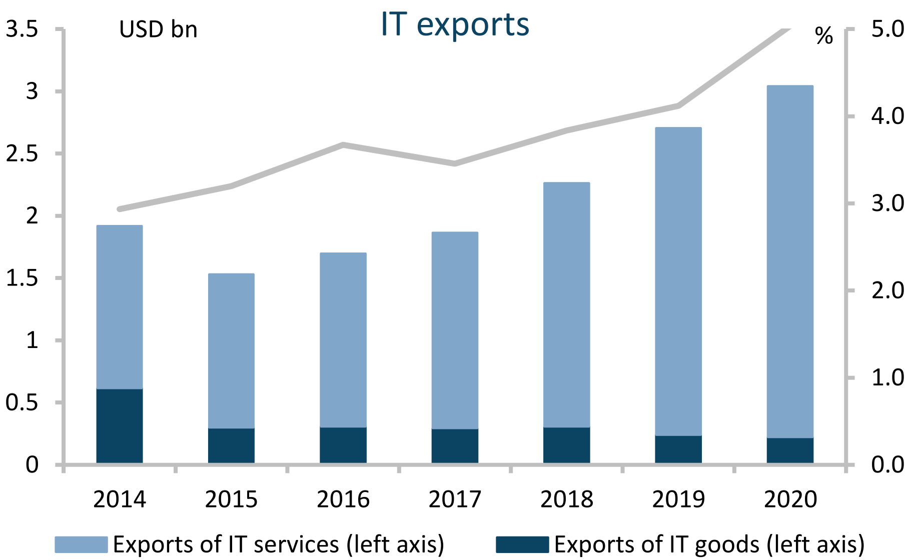
- Employment share of IT sector constantly increasing
  - 2.2% in 2015
  - 2.9% in 2019
- Individual entrepreneurs make up majority of IT workforce
- Tight labour market:
  - IT-sector: Number of vacancies exceeds candidates by 46% (Sep-2021)
  - Total economy: By 4% (Sep-2021)

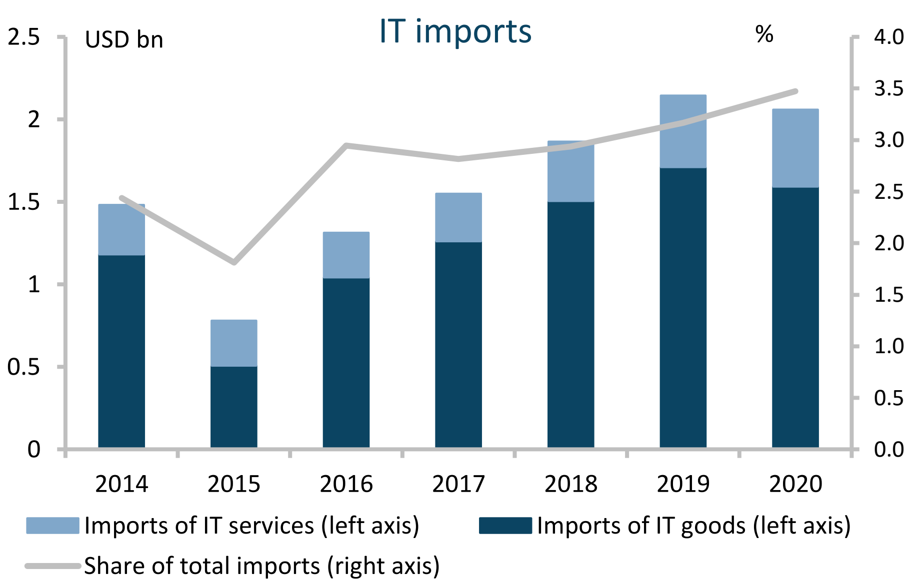
Wages

- Wages above national average:
  - IT sector average monthly wage: USD 737/month (2020)
  - National average: USD 430/month
- Actual wages may be yet higher, according to survey in IT services: USD 2280/month

➢ **Highly attractive sector for employment**

5. Role in international trade





Source: Ukrstat

- Ukraine is a net exporter of IT services and a net importer of IT goods

<u>Exports of IT sector:</u>

- 2020: 5% of total UKR exports, 2% of GDP
- Strong growth of services exports: from USD 1.4 bn 2016 to USD 2.8 bn in 2020
- Exports of IT-goods have declined from ca. USD 0.6 bn (2014) to ca. USD 0.2 bn (2020)
- Share of IT exports in total exports is increasing

<u>Imports of IT equipment:</u>

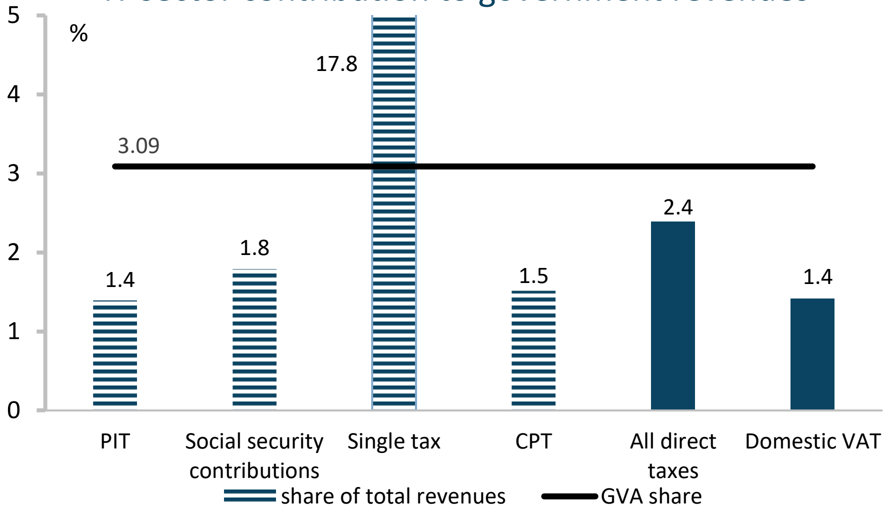
- Imports dominated by goods (hardware)
- 2020: USD 2.0 bn goods imports, USD 0.5 bn services imports
- Slightly increasing share of IT goods in total imports indicates investment in new IT technologies

➢ **Service exports are most important**

➢ **Net IT trade balance positive, despite net imports of IT equipment**

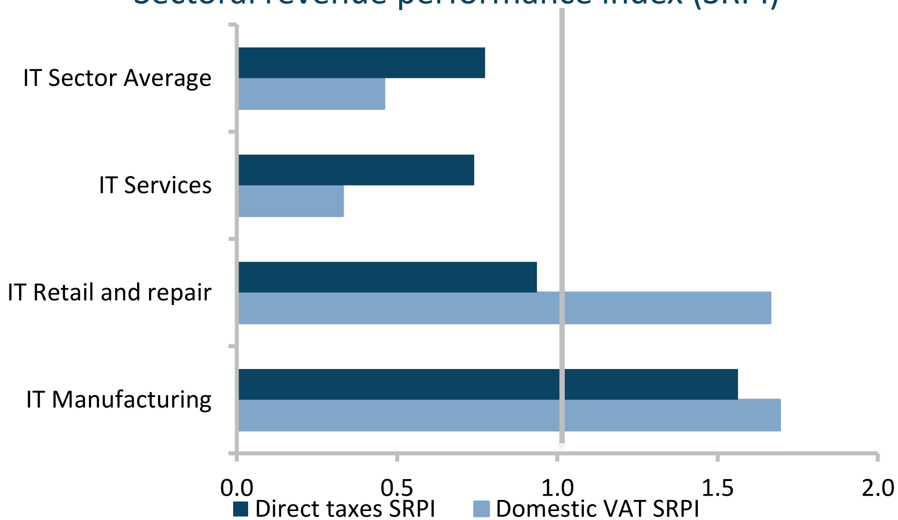
6. Tax revenues from the IT sector

IT sector contribution to government revenues



Source: Ukrstat, own calculations

Sectoral revenue performance index (SRPI)



Source: Ukrstat, own calculations

Revenue contributions of IT in 2018

- Direct taxes (incl. SSC): UAH 16.8 bn
- VAT on domestic sales: UAH 3.4 bn
- Gap between direct tax revenue and GVA shares indicate relative undertaxation
- Share of direct taxes should be roughly comparable to value added share
- Lower share in domestic VAT is due to high export focus of sector

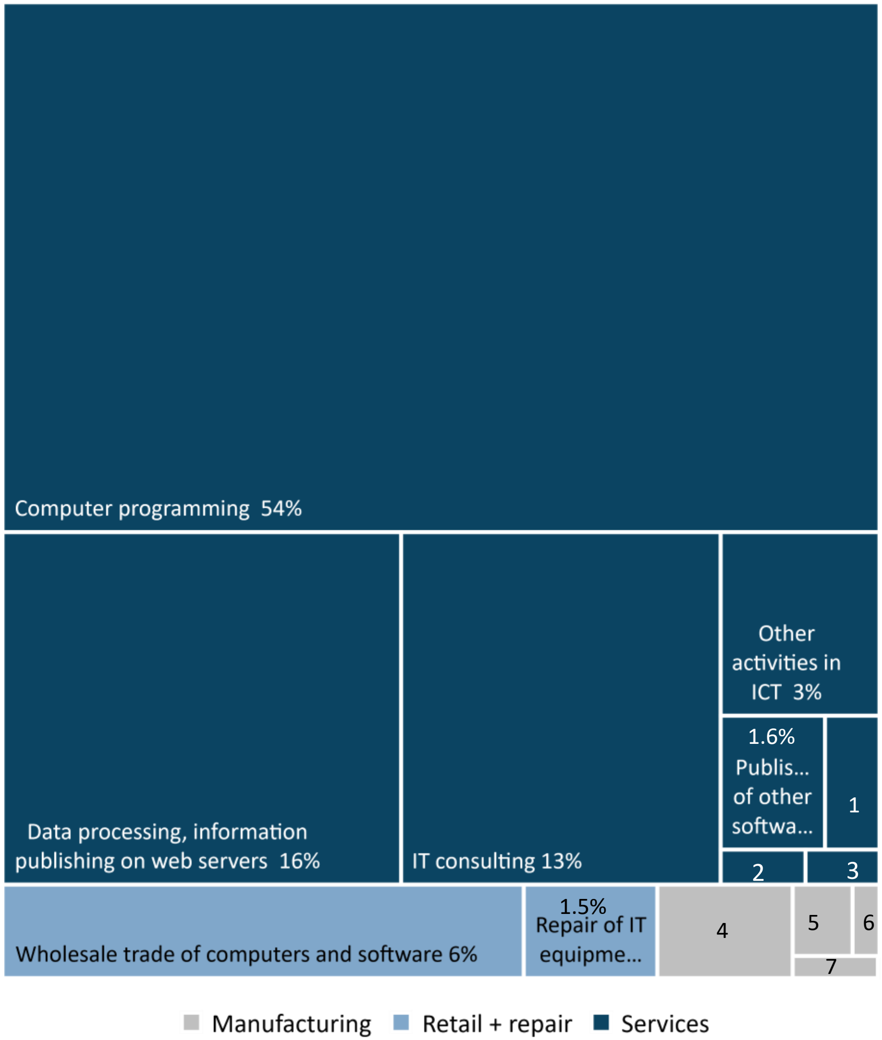
Sectoral revenue performance index

- SRPI: revenue share / GVA share
- Low SRPI of IT services in direct taxes drives sector underperformance
- Retail/repair and manufacturing contribute in or above proportion to government revenues

➢ **Underperformance of IT sector in tax revenues exists, but on a moderate level**

7. Distribution of activities within the IT sector

GVA shares of IT sub-sectors, 2019



Source: Ukrstat, Note: GVA of companies only, 1: Activities on managing computer equipment: 0.8%, 2: Web portals: 0.3%, 3: Computer games publishing: 0.3%, 4: Manufacturing of computers and peripheral equipment: 1.5%, 5: Manufacturing of electronic components: 0.5%, 6: Manufacturing of loaded electronic boards: 0.2%, 7: of consumer electronics: 0.2%

<u>Importance of IT services</u>

- Services dominate the Ukrainian IT sector: 85% of IT sector GVA is in services
- Programming makes up most of IT services with 54.3% of total IT sector GVA
- Data processing and IT related consulting are also sizeable parts of the sector
- Smaller service components: Managing computer equipment, web portals, software publishing, other activities

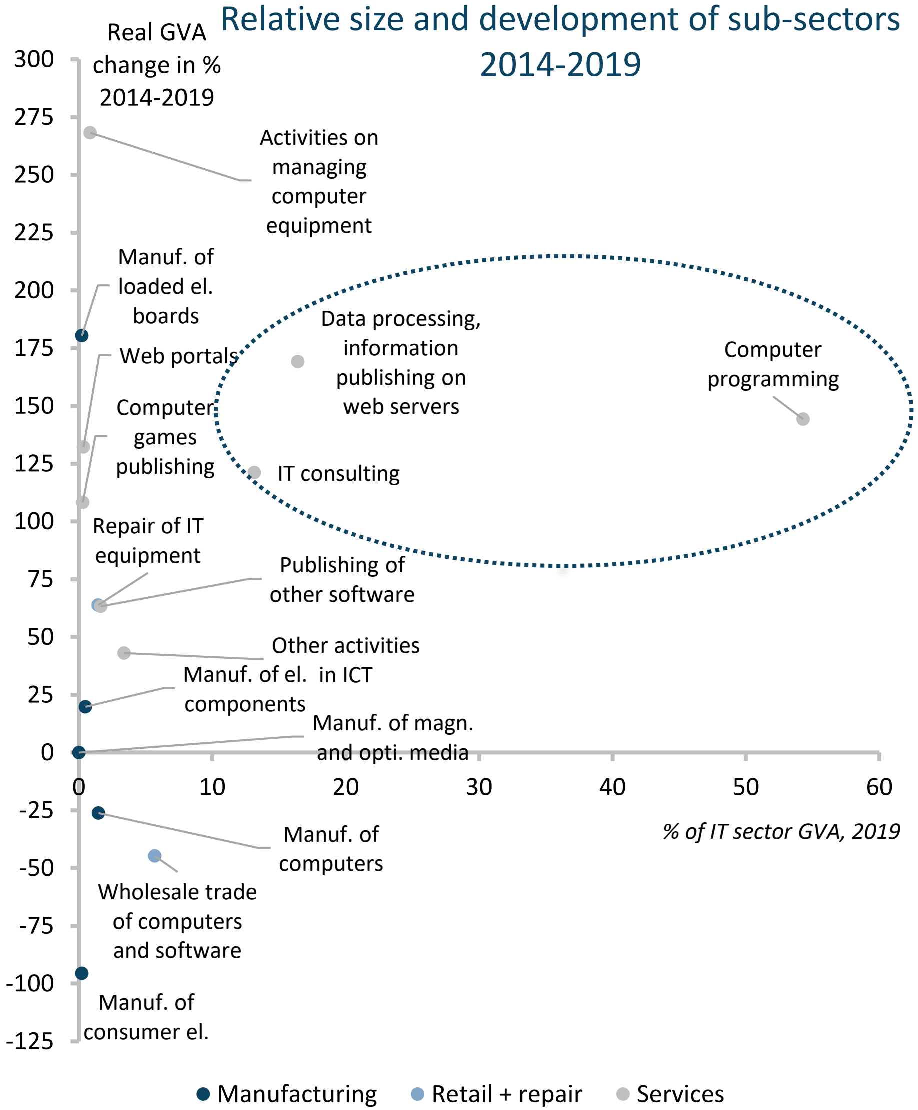
<u>IT retail, repair and manufacturing</u>

- Retail and repair account for 11.2% of GVA
- Manufacturing accounts for 4.1% of GVA
- Largest manufacturing sub-sector: manufacture of computers and peripheral equipment 1.5%

➢ **Programming activities account for more than half of IT sector activity**

➢ **Other service activities (data processing, consulting) are also substantial components of the IT sector**

8. Development of activities within the IT sector



Source: Ukrstat

IT Services

- Focus on IT services increasing
  - Computer programming +144% real GVA growth 2014-2019
  - Data processing +169%
  - IT consulting + 121%

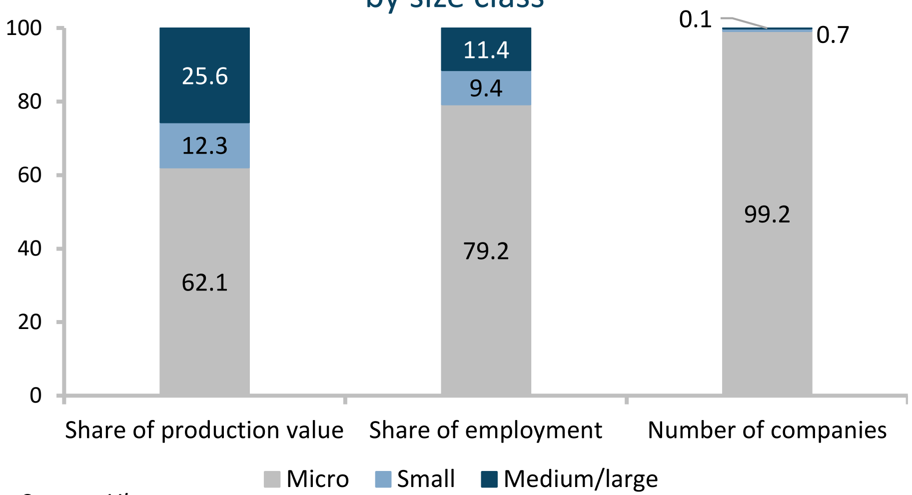
IT retail and manufacturing

- Most manufacturing activities in steep decline
- Retail has declined between 2014 and 2019, repair activities increased

➢ **Dominance of programming and other services increasing further**

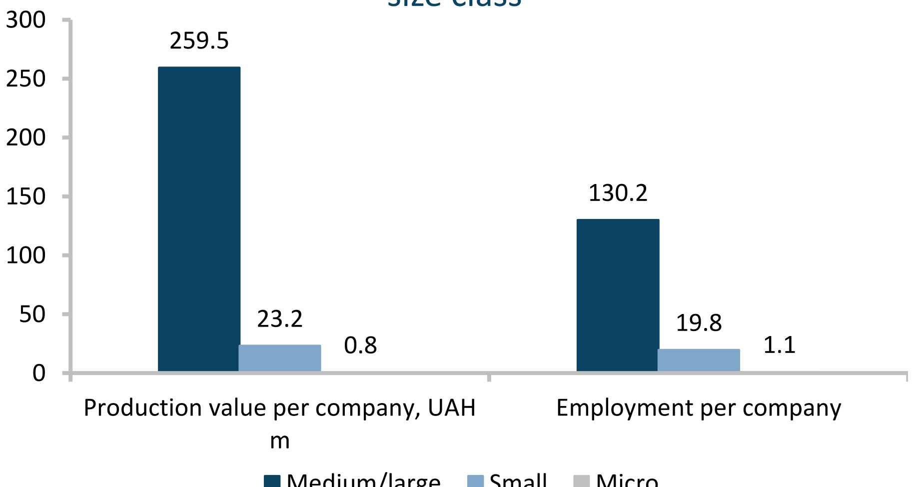
9. Company structure of the IT sector

Production, employment and company count by size class



Source: Ukrstat

Average production value and employment by size class



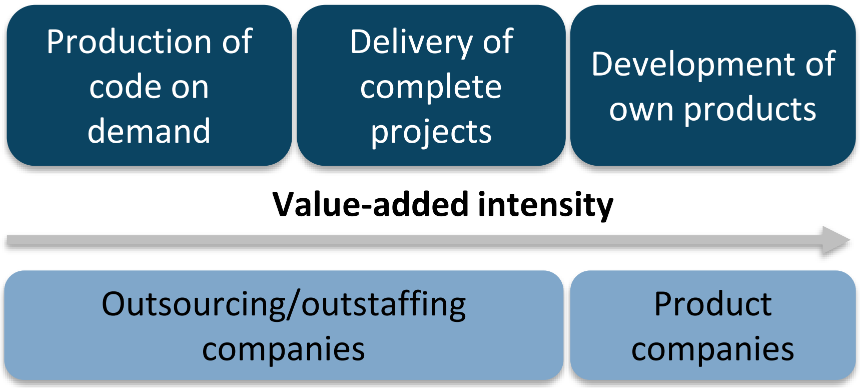
Source: Ukrstat

- Micro companies dominate shares of production and employment
- Prevalence of fake self-employment obscures statistics
- 188.9 thsd. total companies
  - 187.5 thsd. are “micro” companies
  - Of these, 178.3 thsd. are private entrepreneurs
- Most companies are de-facto employees of larger companies

➢ **Role of medium and large companies probably substantially understated**

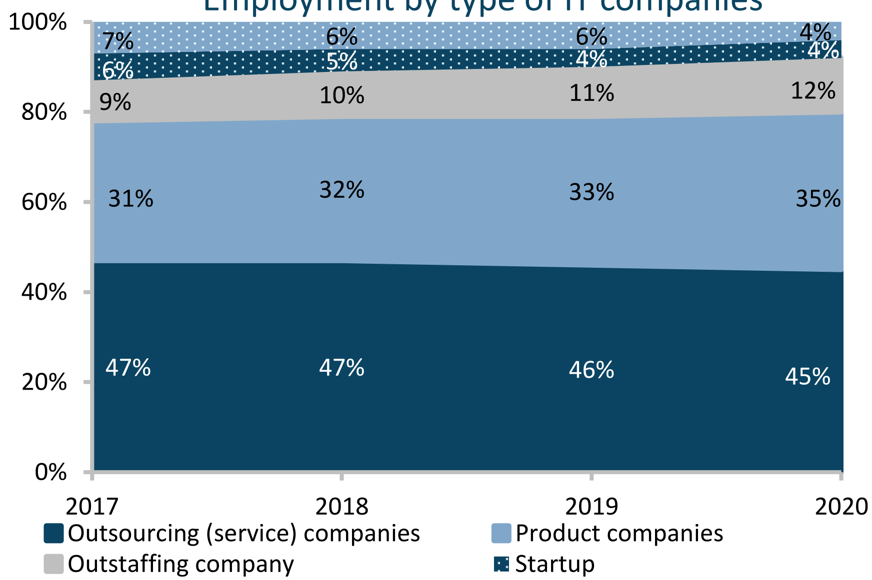
10. Value chain position in IT services

Value-added intensity across company types



Source: Own illustration

Employment by type of IT companies



Source: DOU.ua, note: Data based on regular survey of IT services professionals

<u>Companies position in the value chain</u>

- Outsourcing/outstaffing companies provide limited services for third companies
- Product companies develop and market their own products
  - ➢ Usually higher value-added intensity

<u>Maturing of Ukrainian IT sector</u>

- Employment data indicates product companies growing in importance
- Outsourcing companies still play the largest role in software services
- Slight decrease in start-ups

➢ **IT sector is increasingly moving towards product companies, can expect value-added to grow**

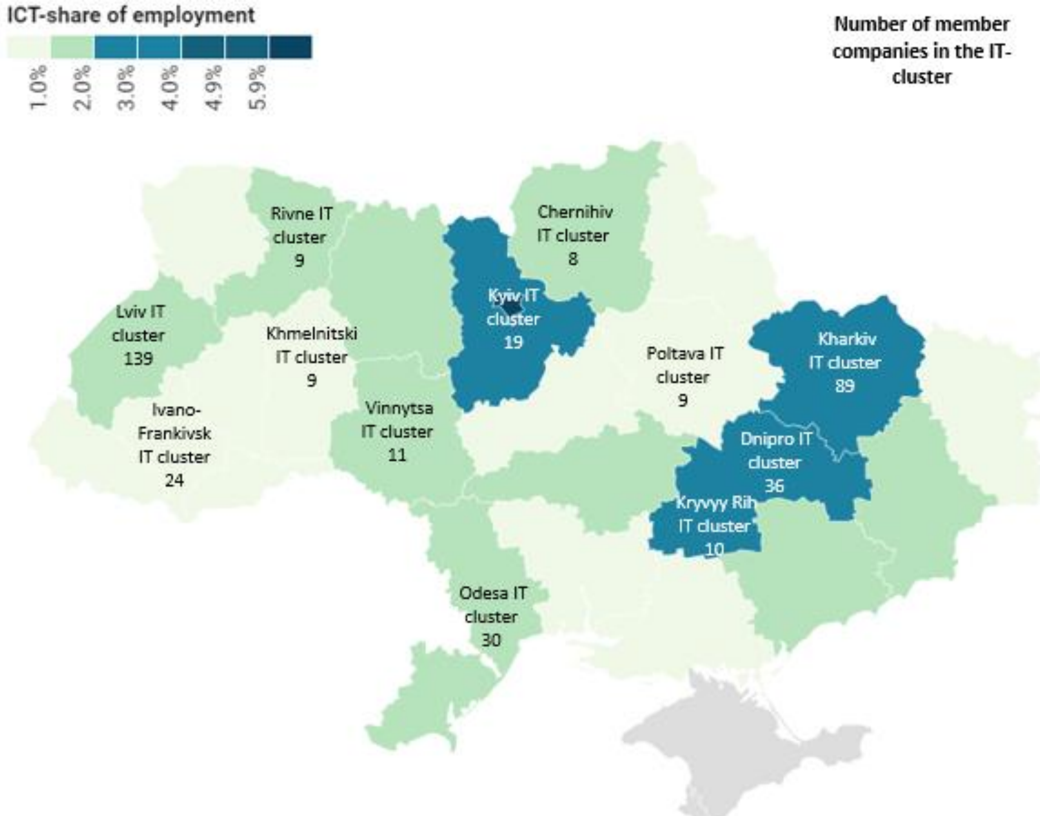
11. Top companies in the IT sector

	Number of employees in Ukraine	Year of foundation	Country of origin	Location of HQ	Location in Ukraine
EPAM Systems	11,600	1993	USA	Newtown, USA	Kyiv, Kharkiv, Lviv, Dnipro, Vinnytsya
SoftServe	9,462	1993	Ukraine	Austin, USA	Lviv
Global Logic Ukraine	6,365	2000	USA	San Francisco, USA	Kyiv, Kharkiv, Lviv, Mykolaiv
Luxoft Ukraine	3,581	2000	Russia	Tysons, USA	Kyiv, Odesa, Dnipro
Ciklum	3,006	2002	Ukraine	London, UK	Kyiv, Dnipro, Kharkiv, Vinnitsya, Lviv, Odesa
NIX	2,748	1994	Ukraine	San Jose, USA	Kyiv, Lviv
DataArt	2,625	1996	USA	New York, USA	Kyiv, Kharkiv, Lviv, Dnipro, Odesa, Kherson
Evoplay	2,345	2003	Ukraine	Kent, UK	Kyiv
Infopulse Ukraine	1,990	1991	Ukraine	Oslo, Norway	Kyiv, Odesa, Kharkiv, Lviv, Vinnytsya, Zhytomyr, Chernihiv

Sources: Ruslana, DOU.ua

12. Regional distribution

Regional distribution of employment and IT-clusters



Sources: Regional cluster websites, ucluster.org, map is created with Datawrapper, data for 2021

Regional IT employment

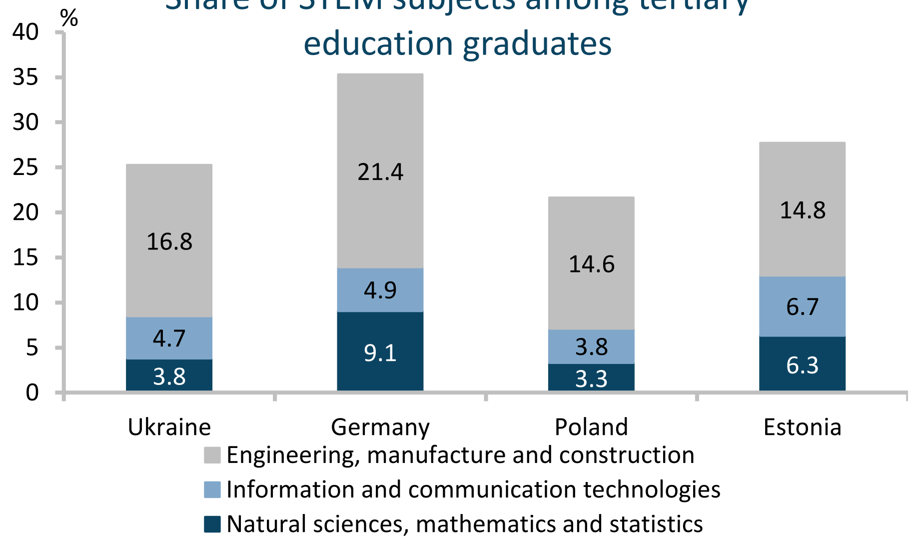
- Highest employment share is in Kyiv City with 7%
  - Kyiv City+Oblast have more than 110k in ICT employment
- Followed by Kharkiv, Lviv and Dnipro with ~2% ICT-share of employment

IT clusters

- Organisations of regional IT companies and related institutions
- Clusters help improving IT ecosystem, allow cooperative work on joint interests such as skilled workers
- Most important clusters: Kharkiv, Lviv, Dnipro, Kyiv
- ➢ **IT sector well developed in several urban centres across Ukraine**
- ➢ **Strong clusters indicate strength of sector**

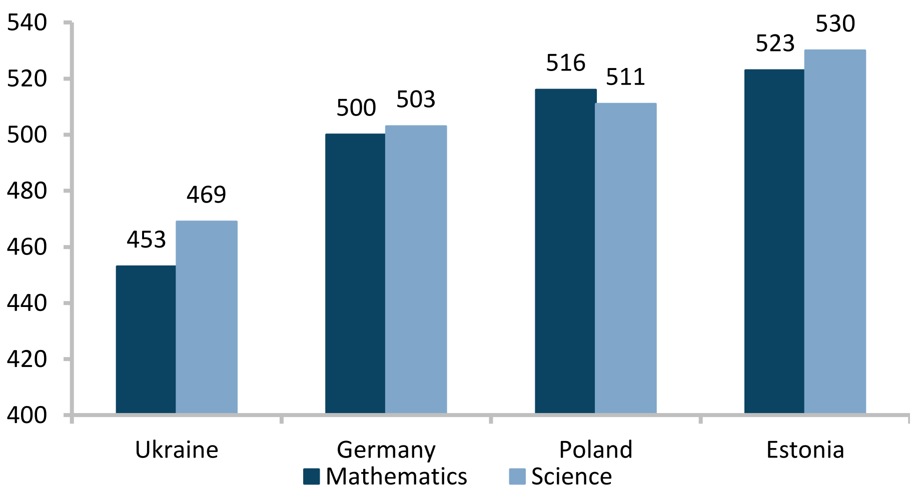
13. Education of new IT professionals

Share of STEM subjects among tertiary education graduates



Source: Unesco, Note: 2018 data

PISA scores in fields relevant for IT



Source: OECD, Note: 2018 data

- Lack of skilled workers is a key constraint to IT sector growth in Ukraine and elsewhere

<u>University education of potential IT workers</u>

- Relatively low share of STEM (science, techn., engineering, maths) graduates
  - Ukraine: 25.3% of all graduates
  - Germany: 35.3%
  - Estonia: 27.7%

<u>Quality of school education</u>

- Education in STEM subjects in Ukraine has generally a good reputation
- Yet, Ukraine scores relatively low on standardised PISA test of 15 year olds
- This might be due to differences in school quality across rural/urban regions etc.

➢ **Education in STEM subjects should be further promoted and improved**

14. Special regime for IT companies: Diia City

Regulation and tax under Diia City

	Regulation	Taxation
Instruments	Non-competition/non-disclosure clauses	Choice between regular 18% CPT or 9% exit capital tax
	Companies may appeal against authorities' decisions	5% PIT, no PIT on dividends or capital gains from shares
	Possibility to appoint a legal entity as an executive body	No exemptions on military duty (1.5%)
Legislative stage	Adopted in June 2021 (project started)	Passed in 1st reading, 2nd open

Source: Deloitte, Diia City, Mondaq, Ukrinform, own illustration

Eligibility requirements

Principal activity of companies	• Software development, distribution • Digital marketing • R&D in IT • Cybersport and security • Robotics • Virtual assets
Company characteristics	<u>Established companies:</u> • Min remuneration of IT-experts EUR 1200 • Min. 9 employees • 90% of income from IT- activities
	<u>Startups</u> • Annual income ≤ UAH 7m • Registration ≤2 years before application • 90% of income comes from IT-activities

Source: Diia City

Background:

- Diia City is a special regulatory/tax regime for IT-companies in Ukraine
- Eligible companies can benefit from different regulation and tax models

Purpose and Goals:

- Purpose: Development of IT sector, attraction of FDI, Concentration of IT-experts
- Goals
  - 450k new jobs in the sector by 2025
  - USD 16.5 bn turnover by 2025
  - 40% to 50% annual turnover growth

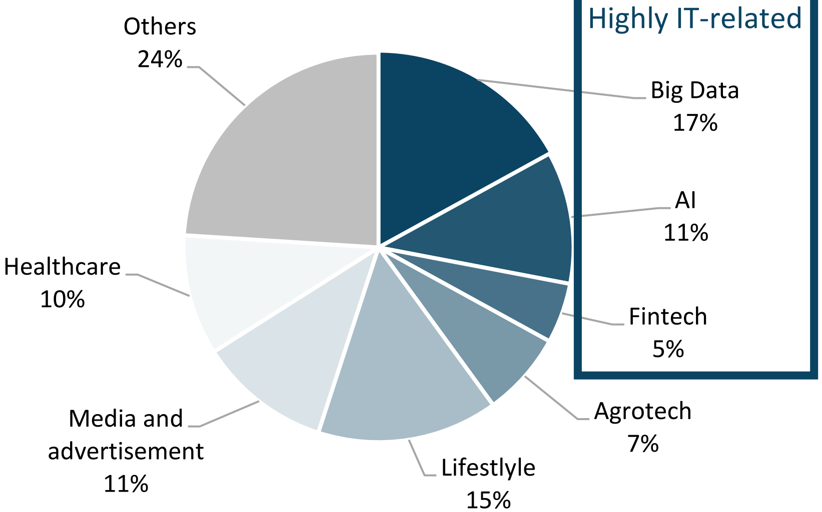
Further initiatives:

- Diia Digital state: E-government
- Diia Digital education: Digital literacy training

➢ **Attractive special regime to help attract more investment in IT**

15. Support for IT sector by Ukrainian startup fund

Role of the IT-sector in Ukrainian startup environment



Source: Ukrainian Startup Fund with support by World Bank, company websites

Overview of startup fund support

Phase	Support	Type of support
Pre-seed stage	USD 25,000	Non-equity grants for business development
Seed stage	USD 50,000	Non-equity grants for business activities
Acceleration programme	<USD 10,000	Grants for mentoring/training
	up to USD 85,000	

Source: Ukrainian Startup Fund

<u>Basic setup:</u>

- Established by Ministry of Finance
- Capital of UAH 440m
- Applications accepted since Dec-2019

<u>Funding and eligibility:</u>

- Non-equity grants for startups in Ukraine for development and business activity support and training
- Eligible activities include:
  - Agrotech, fintech, blockchain
  - AI, AR, VR
  - E-government
  - Healthcare, media, retail services
  - Energy and ecology
- Ca. 200 applications approved so far, amounting to UAH 135 m in grants

➢ **Startup fund can help finance crucial early growth phases of IT-startups**

About the German Economic Team

Financed by the Federal Ministry for Economic Affairs and Energy, the German Economic Team (GET) advises the governments of Ukraine, Belarus, Moldova, Kosovo, Armenia, Georgia and Uzbekistan on economic policy matters. Berlin Economics has been commissioned with the implementation of the consultancy.

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