INVEST IN DIGITAL POLAND
2021

digitalpoland

Polish Investment & Trade Agency
PFR Group

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Foreword

Krzysztof Drynda

Chairman, Polish Investment and Trade Agency

Polish Investment & Trade Agency
PFR Group

Today, the modern services sector is one of the fastest growing areas of the Polish economy. We are a leader in the CEE region, both in terms of the number of centres and employment in the industry. At the Polish Investment and Trade Agency, we see that interest in investing in modern technologies is systematically growing. We observe this trend in the service projects that we support, which are largely based on innovative digital technologies - mainly business service centres and research and development centres. The main reasons for locating this type of investment in our country are Poland's well-educated employees, who are open to innovation, and world-class level of technology. A visible trend is also the transfer of more complicated processes to our country and those focused on advanced research and development.

Investment projects from the modern services sector (BSS, R&D) are among the key investments currently handled by our Agency. It has long been the most popular sector in PAIH's investment portfolio. Since January 2021, we have completed 38 projects of this type with a total investment value of EUR 184 million, and another 37 are in progress. The total value of active BSS projects is EUR 121.9 million and the declared employment is 9121 employees. This proves that Covid-19 has not stopped investing in new technologies. On the contrary, we see much higher growth dynamics of such projects due to also changes in the global supply chains.

What is extremely valuable to us, are research and development centres, which significantly contribute to the digital transformation of the Polish economy, increasing Poland's innovative competitiveness. The last decade has shown the enormous progress that has been made in the field of R&D, in our country. Even 10 years ago, there were only a handful of such projects here. However, it was the beginning of an upward trend, which is currently experiencing its boom. Global leaders, from various industries are moving their R&D and GDS centres to Poland, in order to take advantage of the knowledge and experience of Polish specialists. Since last year, we have closed as many as 9 R&D projects, with a total value of EUR 87 million. We expect this positive trend to continue.

I am very pleased with the direction in which innovative technologies are going in Poland. Newly emerging research and development centres are increasingly engaging specialists in technologies based on artificial intelligence. According to the Digital Poland Foundation's data, we have over 250 companies, including startups, offering AI innovations for various sectors of the economy with which investors can cooperate. In addition, we have in Poland about 30 R&D centres belonging to large foreign companies, which create innovations based on artificial intelligence at the highest global level, using Polish talents and developing products for the needs of the whole world.

Thanks to financial incentives for such investments in the form of R&D allowances or a reduced tax rate of 5%, Poland is becoming an extremely attractive country for the development of the most technologically sophisticated products and services.

I believe that our country will soon be a key hub for innovation and technology in Europe. We have convinced many investors of this. Their constant presence and further development confirms that, as a country, we deserve this.

I encourage you to read the latest "Invest in digital Poland" report. The publication comprehensively presents the sector of new technologies and is a practical guide for foreign investors who plan to locate their innovative projects in Poland.

We at PAIH look forward to supporting your future investment in Poland.

Piotr Mieczkowski

Managing Director, Digital Poland Foundation

As a foundation, we run many international projects in the field of new technologies and digitalisation. For example, we recently organised, together with organisations from 9 countries, the European Digital Days with a final in Zurich, and in Poland - the biggest educational and technological event, called Digital Festival. We also cooperate within the European AI Forum or we created an international competition for art created by AI called Digital Ars. In this regard, I meet many people from outside Poland. I am regularly asked by entrepreneurs, scientists, investors, corporate employees or politicians about the state of digitalisation in Poland, the most interesting companies, leading universities or R&D centres. Many of them are considering investing in Poland, want to establish partnerships within scientific projects or settle down in Poland and develop their startups here. However, before they make this decision, they want to get to know Poland better. Many of them already know that Poland is a great place to invest in new technologies. They have heard about the achievements of our programmers, scientific breakthroughs, further investments of PE/VC funds in Poland. Subsequent reports, such as fDi Markets, indicate Poland as a TOP10 destination for foreign direct investments to develop STEM projects. All this translates into great interest and number of questions addressed to the foundation. Until now we have always tried to answer individually, targeting partners, foundations and organisations operating in Poland dealing with a specific topic, e.g. quantum computing. However, with time this has become impossible. In addition, more and more people are asking me about the whole Polish ecosystem of innovation, new technologies and digitalisation. More and more people realize the importance and relevance of collaboration. Yes, collaboration, because in today's world, which has accelerated thanks to new technologies and hyperconnectivity, there is no time to build everything from scratch - you need to use ready-made solutions, complement each other, cooperate. One organisation or one university is no longer important. What matters are whole clusters, or even ecosystems that cooperate dynamically. It is a rich and broad ecosystem that today creates the fastest innovations and new technologies. This is what the best entrepreneurs or outstanding scientists are looking for today.
All right, but how to show the whole ecosystem? Until now there has been no such report in Poland - each organisation, including ours, prepared studies on a selected topic, e.g. artificial intelligence (State of Polish AI 2021). At the Foundation we focus on collaboration, we know very well from our colleagues from Switzerland or Germany how important it is. We know that it is necessary to build bridges, not walls, and to look for a compromise, and above all to focus on our common success, and not only the success of an individual. There is even a famous saying - *If you want to run fast, run alone. If you want to run far, run together*. We at the foundation very much identify with this. That is why, as a foundation, we took the initiative to prepare the most comprehensive and unbiased report on tech and digital in Poland. Our idea was to create a guide that would present Poland in an objective and transparent way to investors from abroad. We also wanted to help entrepreneurs and scientists to better understand our country. Additionally, we wanted to point out the leading organizations to which it is worth going for additional help or establishing cooperation with them. After many months of cooperation, I am pleased to present to you the result of our joint work. I would also like to thank the nearly 60 experts and over 25 organisations that responded to our request for collaboration.
I am even happier that we did it together, working on a voluntary basis. This shows even more our willingness to work together. I would also like to especially thank PAIH (PFR Group), which from the very beginning believed in the sense of cooperation, focusing on long-term development of Poland, new technologies and STEM. I encourage you to read the whole report and I wish you many successful investments, meetings, research results, but above all, lasting and reliable partnerships.

1. Poland in numbers / Non-tech

IN COOPERATION WITH KPMG

1.1. General and economic data

Photo by Adam Borkowski, Unsplash

38,3 mln | 2020

Population | 38th in the world, 5th in the EU and 7th in Europe

USD 15 653 | 2020

GDP per capita | 49th in the world, 23rd in the EU, 28th in the Europe

USD 594,2 billion | 2020

GDP | 22nd in the world, 6th in the EU, 8th in the Europe

-2,5% | 2020

GDP growth | Decline as a result of the pandemic, one of the smallest in Europe

3,2% | 2020

Unemployment | 2nd lowest in the European Union

PLN 5885,75 | Q3 2021

Avg. monthly gross salary in enterprise sector | USD 1501 | EUR 1283

EUR 10 billion | 2020

Trade balance | Positive trade balance, 2,4% of economy

A- | Nov, 2021

Investment grade | From all three major credit rating agencies

3rd place | 2020

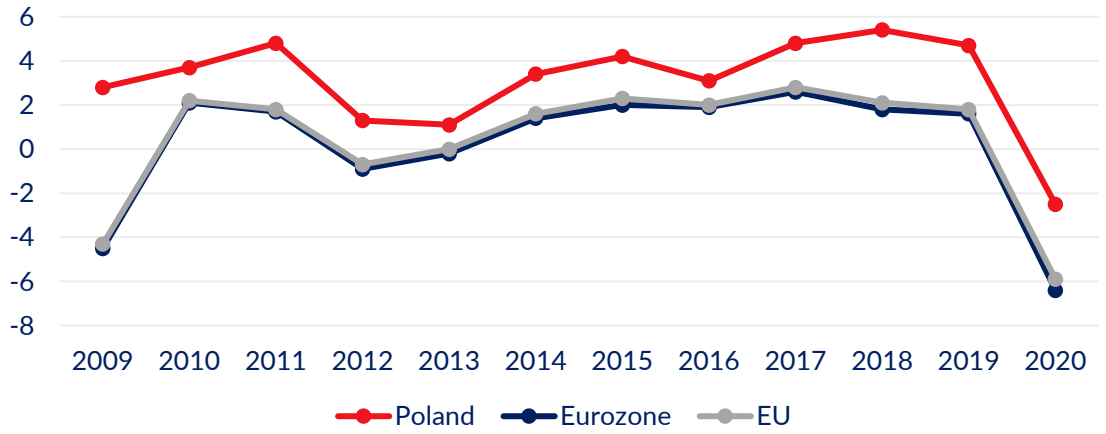
Foreign greenfield investments | 3rd place in Europe for foreign greenfield direct investment

EUR 173,6 billion | 2021-2027

EU Funds | This is how much Poland will receive in grants and loans in the coming years

Source: GUS (Statistics Poland), World Bank, IMF, fDi Markets, EU

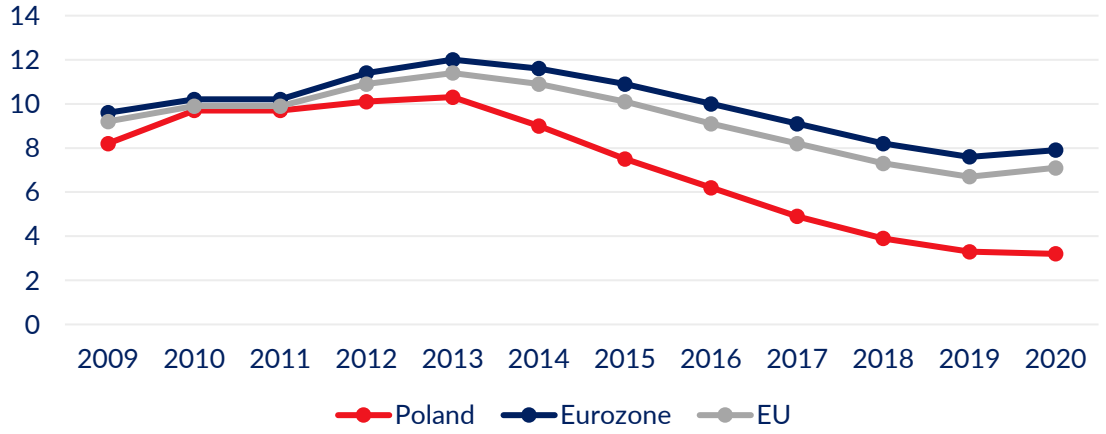
GDP growth rate



Since 1989, Poland has experienced recession only twice - the first time in 2001 and the second time in 2020 due to a pandemic. After the fall of communism, Poland's economy has grown rapidly and continuously. The Polish economy was **the only one in the EU to grow during the great global crisis of 2008-2009**. While the EU's GDP fell by 4.3%, Poland's economy grew by 2.8% at the same time.

High growth rates are characteristic of most of the countries in Central and Eastern Europe that embarked on the path of dynamic growth in the 1990s, but none of these countries can boast of uninterrupted growth for almost three decades like Poland. This is thanks to Poland's diversified and competitive economy. It is also worth mentioning that the **Polish economy has grown most dynamically in the EU over the last three decades.**

Unemployment rate



During the great financial crisis of 2008-2009, unemployment was 8.2% in Poland, compared to 9.2% in the EU as a whole and 17.9% in Spain. Over the last 10+ years, **unemployment has fallen to 3.2% in Poland**, compared to 7.1% in the EU in 2020. Poland currently has the **second lowest unemployment in the European Union**, just after the Czech Republic where unemployment is only 2.6%, while in Spain it is 15.5%.

Since 2013, inflation in Poland has been lower than in the EU as a whole. Only 2019-2021 period marked the beginning of higher inflation rates, mainly due to the rising energy prices and increased expenditure stemming from rapidly rising income levels, government expenditures and supply shocks dynamics due to pandemic.

Source: GUS (Statistics Poland)

In 2020, Poland recorded a **positive balance of trade in goods**, **exporting EUR 239.9 billion worth of products**. At that time, imports were lower by than **EUR 10 billion**, amounting to EUR **229,4 billion**. Only a year earlier, Poland's trade balance in goods was also slightly positive (EUR 1,8 bln). In **relation to gross domestic product**, the positive balance of goods turnover increased from 0.2% in 2019 to **2.4% in 2020**. Poland's trade balance reflects its **high integration with the European Union economy**. In 2020, as much as 74,1% of Polish exports and 55,4% of Polish imports were within the EU.

Germany is the most important partner in both directions of trade (29% of export and 21,9% of import), with Poland having a positive balance of trade with that country. In the export, the Czech Republic, United Kingdom and France were responsible in total for 17,2% of Polish exports. The situation is different for Poland's purchases abroad. In 2020, the second largest import partner after Germany was China (14,4%). As much as a quarter of all imported goods came from Asia. Italy is the next country in terms of the value of imports (with a 5,1% share in imports), followed Russia and other EU countries.

Goods turnover of foreign trade by region | Export

Export	In billions of euros	Total [%]
Developed countries	207,2	86,4%
- Including the EU	177,7	74,1%
- Including the euro area	139,2	58,0%
Developing countries	18,4	7,7%
Central & Eastern European countries	14,3	6,0%

Goods turnover of foreign trade by region | Import

Import	In billions of euros	Total [%]
Developed countries	149,3	65,1%
- Including the EU	127,2	55,4%
- Including the euro area	105,5	46,0%
Developing countries	66,0	28,8%
Central & Eastern European countries	14,0	6,1%

Top 10 countries | Goods turnover | Export

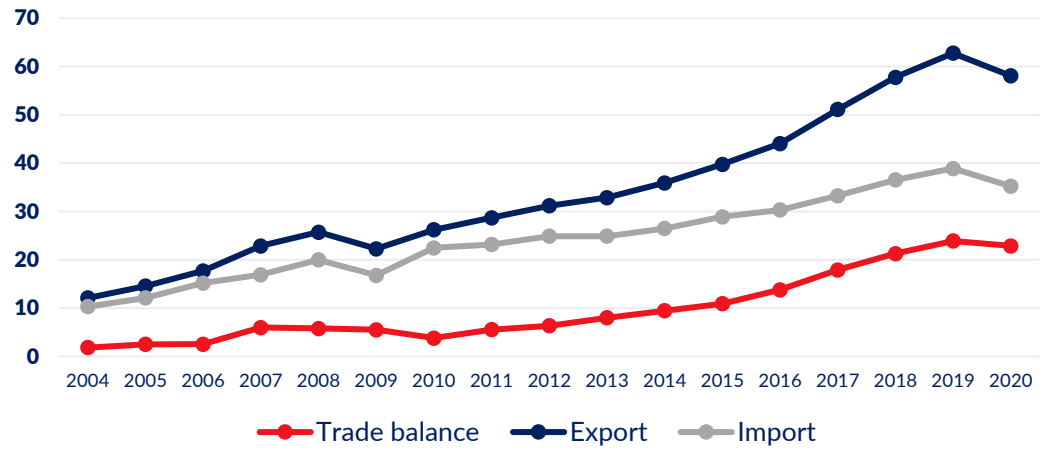
Country	In billions of euros	Total [%]
Germany	69,4	29,0%
Czech Republic	14,1	5,9%
United Kingdom	13,7	5,7%
France	13,5	5,6%
Italy	10,4	4,3%
Netherlands	10,2	4,3%
Russia	7,2	3,0%
Sweden	7,0	2,9%
United States	6,7	2,8%
Hungary	6,1	2,5%

Top 10 countries | Goods turnover | Import

Country	In billions of euros	Total [%]
Germany	50,2	21,9%
China	33,0	14,4%
Italy	11,8	5,1%
Russia	10,2	4,4%
Netherlands	9,1	4,0%
France	7,9	3,5%
Czech Republic	7,3	3,2%
United States	7,2	3,1%
South Korea	5,5	2,4%
Belgium	5,2	2,3%

Source: GUS (Statistics Poland), National Bank of Poland's data

Poland's foreign trade in services in billions of euros



Poland has had a positive balance of payments in international trade in services since joining the European Union (2004). In 2020, the balance amounted to **22.83 billion euros**. Exports of services amounted to EUR 58.04 billion and imports of services amounted to EUR 35.21 billion.

Poland is an economic powerhouse in logistics services and advanced business services. As much as 28.2% of exports were transport services, and business services 27.4%. Together with telecommunications, IT and travel services they accounted for 82.2% of total exports. This high share of advanced services is due to the large number of foreign shared service, business processes and R&D centres. In Poland there are over 1600 of them (see chapter 5.2).

Again, as in trade in goods, Germany is Poland's main partner in international trade in services. In the case of imports and exports of services, however, three non-EU partners play an important role: Switzerland, United Kingdom and the United States.

Services turnover of foreign trade by type | Export

Service type	In billions of euros	Total [%]
Transportation	16,34	28,2%
Other business services	15,87	27,4%
Telecommunications, computer & information	8,25	14,2%
Travel	7,22	12,4%
Goods for processing	3,79	6,5%
Maintenance and repair services	1,86	3,2%
Construction services	1,60	2,7%
Charges for the use of intellectual properties	0,96	1,7%
Financial services	0,96	1,7%
Personal, cultural and recreational services	0,77	1,3%
Insurance and pension services	0,41	0,7%

Services turnover of foreign trade by type | Import

Service type	In billions of euros	Total [%]
Other business services	10,67	30,3%
Transportation	7,65	21,7%
Telecommunications, computer & information	5,12	14,5%
Travel	4,64	13,2%
Charges for the use of intellectual properties	3,08	8,7%
Maintenance and repair services	0,94	2,7%
Insurance and pension services	0,87	2,5%
Financial services	0,86	2,4%
Personal, cultural and recreational services	0,48	1,4%
Construction services	0,46	1,3%
Goods for processing	0,34	1,0%

Source: National Bank of Poland's data

Poland's debt rating

Moody's	S&P	Fitch
A2	A-	A-

All three major credit rating agencies give Poland a **good, investment grade, describing it as 'upper medium grade'.** The rating agencies also give a positive confirmation of Poland's economic stability during the pandemic. They also emphasise the good performance of the country's economy and the stability associated with membership of the European Union and diversified economy. The current outlook for the credit ratings of the three key credit rating agencies has been described for Poland as '**stable**'.

Source: Based on the Ministry of Finance of the Republic of Poland news portal. Ratings current for October 2021.

FDI in top 10 most popular countries in Europe by capital investment in 2020

#	Country	Capital investment [$bn]	Total [%]
1	UK	34,4	19%
2	Germany	22,9	13%
3	**Poland**	**20,1**	**11%**
4	France	12,8	7%
5	Spain	11,7	7%
6	Ireland	9,8	6%
7	Russia	7,3	4%
8	Italy	6,2	4%
9	Netherlands	5,8	3%
10	Belgium	4,3	2%
	Other	42,1	24%
	Total	177,3	

FDI in top 10 most popular countries in Europe by number of projects in 2020

#	Country	Number of FDI in 2020	Total [%]	vs 2019 [%]
1	UK	868	17,01%	-35%
2	Germany	733	14,37%	-37%
3	Spain	448	8,78%	-34%
4	France	385	7,55%	-46%
5	**Poland**	**378**	**7,41%**	**-1,46%**
6	Netherlands	255	5,00%	-24%
7	Ireland	222	4,35%	+2,3%
8	Belgium	191	3,74%	-0,5%
9	Turkey	160	3,14%	-26%
10	Russia	156	3,06%	-38%
	Other	1306	25,60%	-31%
	Total	5102		-30%

- **3rd** | More than $177.3 billion in foreign direct investment flowed into Europe in 2020 into **greenfield projects**. As much as **11% found their way to Poland, with a value of over $20 billion**. Poland took **high third place** just after Great Britain and Germany and before France or Spain. Taking into account that all foreign direct investments in the world in 2020 amounted to $528.2 billion, **Poland's share in greenfield investments was almost 4%**.
- **5th** | Poland is among the leading countries in Europe in which foreign direct investments are located in greenfield projects. In 2020, in terms of the number of projects, **Poland ranked high in 5th place in Europe**. Although the number of investments in **Europe fell by nearly 30% on average**, in Poland, as a result of the pandemic, the number of **investments fell by only 1.46%**.
- **Over 40%** | Poland is the leader in the CEE region. **More than 30%** of foreign direct investment in greenfield projects that were located in the CEE region, has been **located in Poland**. Interestingly, **Poland in 2020 for the first time overtook Russia** in this respect, the difference amounted to over USD 0.5 billion in favour of Poland.
- At the end of 2020, Poland's liabilities under foreign direct investments (FDI) amounted to **EUR 203.4 billion**. Throughout the year, foreign investors invested EUR 12.1 billion net, which comprised reinvested earnings of EUR 9.9 billion, equity and shares of EUR 3.8 billion and debt instruments worth EUR -1.6 billion. In 2020, foreign investment inflows to Poland slightly increased, by EUR 67 million despite the extraordinary situation in which the economy found itself. At that time a decline was recorded in the revenues earned by foreign investors in Poland, the value of which steadily grew in the preceding years. In 2020 those revenues amounted to EUR 19 billion, compared to EUR 20.8 billion in the preceding year
- **The majority of foreign investments in Poland are related to industry**. At the end of 2020, Poland's FDI liabilities in this sector of the economy amounted to EUR 62.7 billion. The next largest destination sectors in terms of attracted investments are financial and insurance services (EUR 37 billion), wholesale and retail trade plus vehicle repairs (EUR 29.2 billion) and real estate (EUR 19.2 billion). Considering the number of entities with foreign capital operating in Poland, according to the GUS (Statistics Poland) data, the largest number, i.e. almost 28%, were active in wholesale/retail trade and vehicle repairs sector in 2019. The total number of companies with foreign capital operating in all sectors at that time was 24.2 thousand, most of them being small and micro businesses, with large enterprises representing almost 6.5%

Source: The fDi report 2021. Global greenfield investment trends | unctadstat.unctad.org | Investment in Poland The rough guide to successful investing in Poland by KPMG, 2021

- Poland is one of **the biggest beneficiaries of the new European Union budget** for the years 2021-2027. Under the Multiannual Financial Framework and the Next Generation EU, which will amount to nearly EUR 1.8 trillion, **Poland will receive almost 10% of this amount**.
- **Poland will receive EUR 139.4 billion in non-repayable grants** and **EUR 34.2 billion in low-interest loans**. This is more than EUR 7 billion more than in previous MFF budget (2014-2020) in 2018 prices. Poland will also be the **biggest beneficiary of the cohesion policy**, as it will receive **€66 billion**, i.e. nearly 20% of the total budget of €330 billion (in 2018 prices). A large part of these funds will go to companies in an effort to increase the innovativeness of our economy.
- To date, **Poland has received €86 billion** under the EU's cohesion policy in **2014-2020** and **€67 billion in 2007-2013**.

Source: EU

World Bank
Doing Business 2020

Country	Rank
Lithuania	11
North Macedonia	17
Estonia	18
Latvia	19
Russia	28
Slovenia	37
Poland	**40**
Czech Republic	41
Serbia	44
Slovakia	45
Croatia	51
Hungary	52
Romania	55
Bulgaria	61
Albania	82

IMD
World Competitiveness Ranking 2021

Country	Rank
Estonia	26
Lithuania	30
Czech Republic	34
Latvia	38
Slovenia	40
Hungary	42
Russia	45
Poland	**47**
Romania	48
Slovakia	50
Bulgaria	53
Croatia	59
Albania	none
North Macedonia	none
Serbia	none

Transparency
Corruption Index 2020

Country	Rank
Estonia	17
Lithuania	35
Slovenia	35
Latvia	42
Poland	**45**
Czech Republic	49
Slovakia	60
Croatia	63
Bulgaria	69
Hungary	69
Romania	69
Serbia	94
Albania	104
North Macedonia	111
Russia	129

Heritage Foundation
Economic Freedom Index 2021

Country	Rank
Estonia	8
Lithuania	15
Czech Republic	27
Latvia	30
Bulgaria	35
Poland	**41**
Romania	43
North Macedonia	46
Slovenia	48
Serbia	54
Hungary	55
Slovakia	61
Albania	66
Croatia	79
Russia	92

Investment in Poland
The rough guide to successful investing in Poland
This report contains key information relevant to a potential foreign investor. The publication presents key economic indicators, describes the mergers and acquisitions market and highlights the legal and tax issues of key importance for investing and running a business in Poland. Investors will also find a short guide to the country's geographic regions.

Click here to download the report

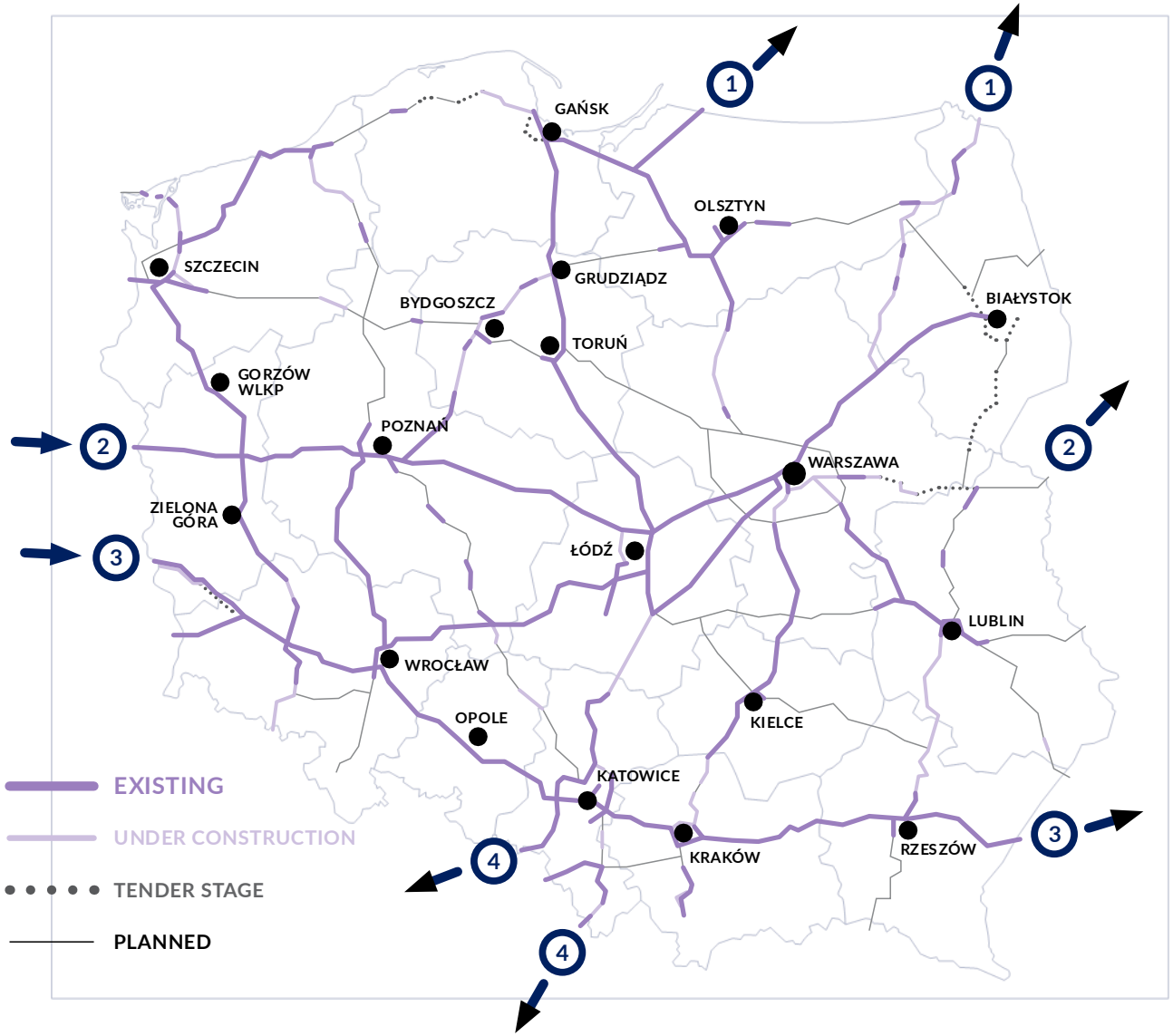
1.2. Transport

- **The Centre of Europe** | Poland lies in the centre of Europe. It is ideally situated between the west and the east. Four major European trade corridors intersect in Poland, placing Poland in the centre of European trade.
- **5th** | Poland ranks fifth in terms of total length of motorways and expressways (over 4,000 kilometres) in Europe
- **7th** | Poland ranks seventh in the EU in terms of total length of roads (over 423,000 kilometres) in the EU

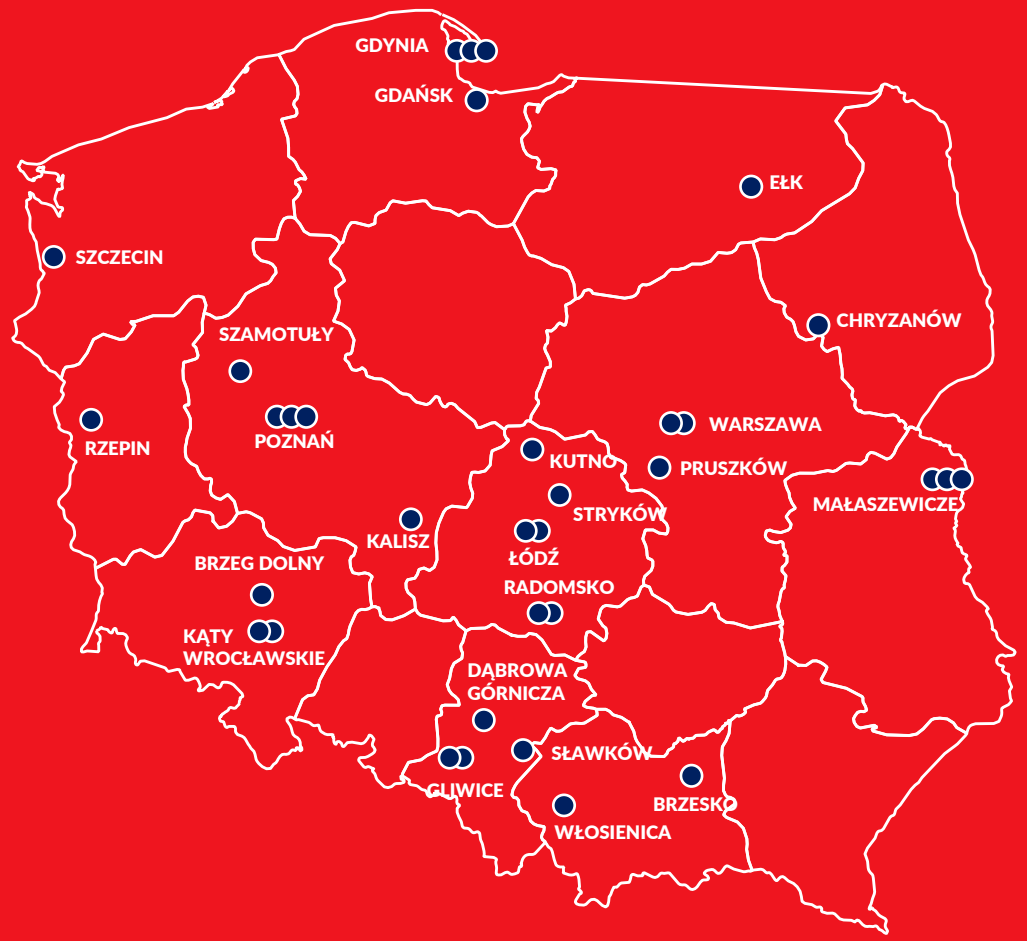
TRADE ROUTE	COURSE	NUMBER OF COUNTRIES
I	HELSINKI – TALIN – RIGA – WARSAW / GDAŃSK	6
II	BERLIN WARSAW MINSK – MOSCOW – NIŻNY NOWOGRÓD	4
III	BERLIN / DRESDEN WROCŁAW – KATOWICE – KRAKÓW RZESZÓW – LVIV – KIEV	3
IV	GDAŃSK – GRUDZIĄDZ – TORUŃ ŁÓDŹ – KATOWICE ŻYLINA – OSTRAVA	3

Source: GDDKiA, PAIH

Motorways and expressways | 28.11.2020



Distribution of intermodal terminals | 2020



Source: GUS (Statistics Poland), Eurostat

- **1st** | Poland ranks first in the EU in terms of freight loading in international road transport
- **3rd** | Poland ranks third in the EU in terms of tonnes transported by road in EU
- **34** | There were 34 active intermodal terminals in Poland in 2020. Four handled sea-rail, sea-road shipments (sea terminals) and thirty handled rail-road shipments (land terminals)
- **5%** | Intermodal terminal transhipment growth compared to 2019
- **77,9 mln** | A total of 77.9 million tonnes of containerised cargo will be handled at intermodal terminals in 2020
- **25 mln tonnes** | In 2020, intermodal road transport will carry more than 25 million tonnes of containerised cargo

Source: Six Good Reasons For Investors To Choose Poland by PAIH, Eurostat, UTK data (Office of Rail Transport)

Three key corridors pass through Poland's territory

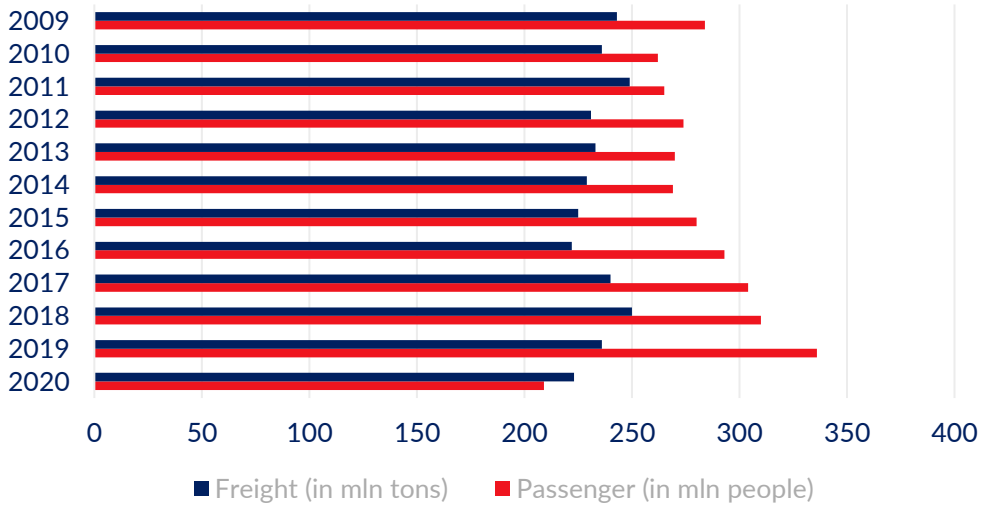
- **The Baltic Sea-Adriatic Sea** (RFC5 Baltic-Adriatic) freight corridor | runs through Poland, the Czech Republic, Slovakia, Austria, Slovenia and Italy.
- **The North Sea-Baltic Freight Corridor No. 8** (RFC8 North Sea-Baltic) | runs through Poland, Belgium, the Netherlands, Germany, the Czech Republic and Lithuania.
- **The Amber Freight Corridor No. 11** (RFC11 Amber) | connects South East Poland, Slovakia, Hungary and Slovenia with Belarus.

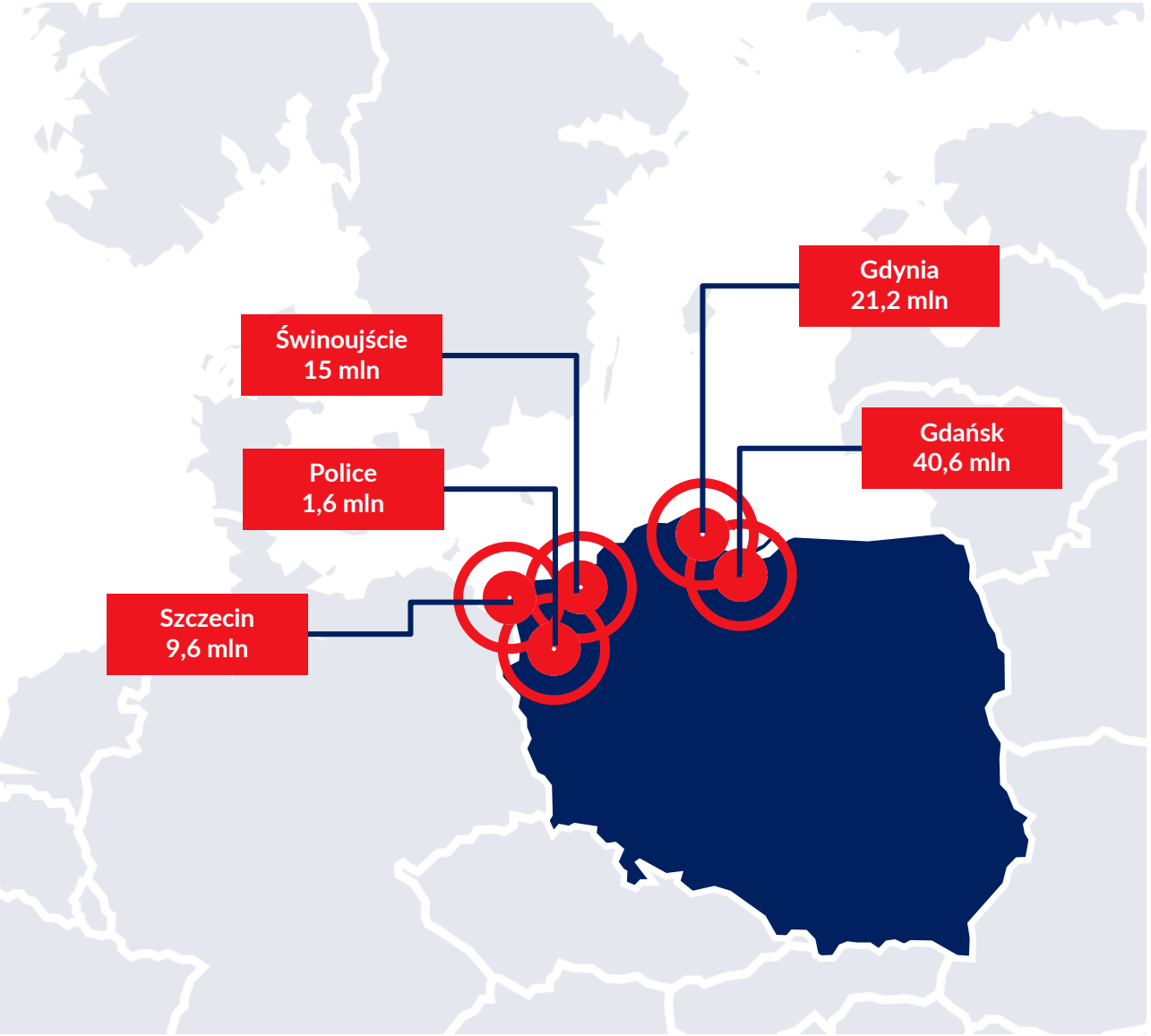
Poland is one of the key players in the **New Silk Road** project. The land "Belt" is to connect China with Central Asia and Europe, and the sea "Route" – the Far East with the Middle East and Africa.

Rail network in Poland

- **3rd** | Poland has the third longest rail network in the EU (after Germany and France)

Passenger and freight transport by rail





- Through the Baltic Sea, **Poland has access to markets all over the world**, enabling it to directly receive and dispatch bulk goods. The largest Polish port, which is also the **fourth largest port in the Baltic Sea**, is located in **Gdańsk**, with a cargo volume of 40.6 million tonnes handled in 2020. Considering container transport only, the **Gdańsk reloading terminal is the second largest in the Baltic after St. Petersburg**. In terms of the number of ships received, Świnoujście outperforms all other Polish ports with 6.2 thousand calls in 2019

- **Cargo turnover at seaports in 2020 amounted to 88.5 million tonnes**, 5.7% less than in 2019; a decrease was observed in Gdańsk (by 10.9%), Świnoujście (by 5.3%) and Police (by 1.9%). An increase in turnover was recorded only in Gdynia (by 3.3%), while in Szczecin its volume remained at the same level as last year

- **Gdańsk – Key logistics hub in Europe**

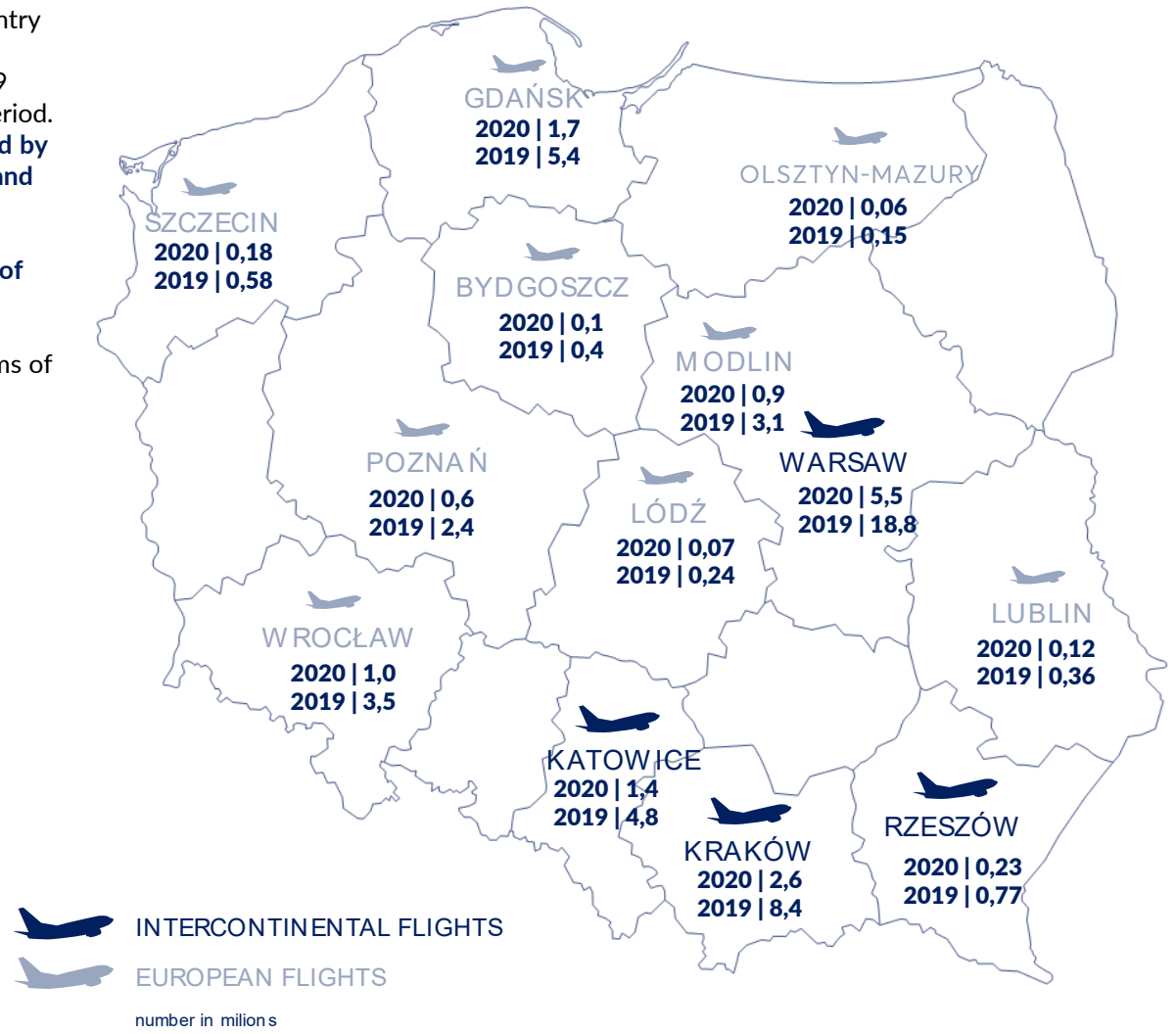
    - The Deepwater Container Terminal Gdańsk (DCT Gdańsk) and the Central Port in Gdańsk are two projects thanks to which the Tri-City of Gdańsk, Gdynia and Sopot, will soon become one of the most important logistic points on the map of Europe

    - Launched in 2005, DCT Gdańsk is the largest container terminal in Poland and the only deep-water terminal in the Baltic Sea region. It is the fastest growing container port on the continent. In turn, as part of the Central Port in Gdańsk, nine terminals, four turning areas and three approach fairways will also be built. Ultimately, by 2045, the port is to handle 100 million tons of goods annually

Source: Six Good Reasons For Investors To Choose Poland, PAIH and GUS (Statistics Poland)

- Air transport in Poland is constantly developing. At present, there are **14 civil airports around the country**. A reopening of the previously suspended airport in Radom is planned, alongside the construction of the Central Transport Hub (CPK) in the Mazowieckie Voivodship, intended to become a reloading and passenger hub at the heart of the country
- In 2019, the number of passengers using airports in Poland increased by 7% y-o-y to 49 million, while the volume of cargo rose by 8% to 123 thousand tons during the same period. **Due to pandemic in 2020, the number of passengers using airports in Poland decreased by 70,3% y-o-y to 14,5 mln, while the volume of cargo decreased by 18,1% to 101 thousand tonnes**
- **Chopin Airport** in Warsaw handled nearly **38% of passenger traffic** in Poland and **74% of cargo** traffic in Poland in 2020
- **8th** | Poland ranks 8th in the EU in terms of air transport of passengers and 13th in terms of air transport of goods in 2020

APPROXIMATE TIME OF AIR TRAVEL FROM WARSAW	
Warsaw – Berlin	1.5h
Warsaw – Paris	2h
Warsaw – Stockholm	2h
Warsaw – Moscow	2.5h
Warsaw – London	3h
Warsaw – Madrid	4h
Warsaw – Beijing	9h
Warsaw – New York	10h
Warsaw – Seoul	11h
Warsaw – Tokyo	11h
Warsaw – Singapore	12h



Source: ULC (Civil Aviation Authority, Poland)

2. Poland in numbers / Tech

IN COOPERATION WITH KPMG

GEDI
Digital Platform Economy Index 2020
(116 countries)

Country	Rank
Germany	14
Estonia	18
Czech Republic	28
Slovenia	31
Lithuania	32
Latvia	35
Poland	**39**
Slovakia	40
Hungary	41
Bulgaria	44
Croatia	45
Romania	47
Russia	48
Serbia	62
Albania	81

Poland is in the 33% of the most entrepreneurial and digital countries in the world. As indicated by "The Global Entrepreneurship and Development Institute" in the 2020 DPE ranking, Poland was ranked 39th.

IMD
World Digital Competitiveness Ranking 2021
(64 countries)

Country	Rank
Germany	18
Estonia	25
Lithuania	30
Czech Republic	33
Slovenia	35
Latvia	37
Poland	**41**
Russia	42
Hungary	45
Slovakia	47
Romania	50
Bulgaria	52
Croatia	55

In a world digital competitiveness ranking, the prestigious Swiss university IMD, placed **Poland 41st among the 64 most digitally competitive economies in the world**.

Bloomberg
Innovation Index 2021
(60 countries)

Country	Rank
Germany	4
Slovenia	22
Poland	**23**
Russia	24
Czech Republic	26
Hungary	27
Romania	32
Latvia	34
Estonia	39
Lithuania	40
Bulgaria	41
Slovakia	44
Croatia	45
Serbia	48

Bloomberg, the world's largest news agency, specialises in providing information on financial markets, has ranked **Poland as the 23rd most innovative economy in the world**. Bloomberg analysed 111 countries and published a list of 60 most innovative economies.

WIPO
Global Innovation Index 2021
(132 countries)

Country	Rank
Germany	10
Estonia	21
Czech Republic	24
Slovenia	32
Hungary	34
Bulgaria	35
Slovakia	37
Latvia	38
Lithuania	39
Poland	**40**
Croatia	42
Russia	45
Romania	48
Serbia	54
Albania	84

The World Intellectual Property Organization (WIPO) analysed more than 130 economies in terms of innovation and property rights or patents. **Poland was ranked 40th, among 30% most innovative economies in the world**.

United Nations E-government Development Index 2020 (193 countries)

Country	Rank
Estonia	3
Lithuania	20
Slovenia	23
Poland	**24**
Germany	25
Russia	36
Czech Republic	39
Bulgaria	44
Slovakia	48
Latvia	49
Croatia	51
Hungary	52
Romania	55
Serbia	58
Albania	59

The United Nations analysed 193 countries in terms of **state digitalisation and placed Poland 24th**. Poland was among 15% of countries in the world where public services are the most digital.

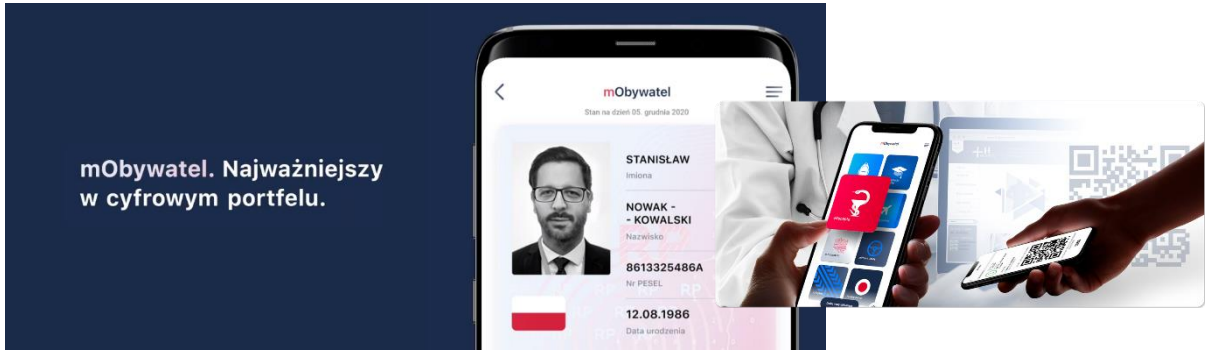
United Nations E-Participation Index 2020 (193 countries)

Country	Rank
Estonia	1
Poland	**9**
Bulgaria	23
Croatia	23
Russia	27
Slovenia	29
Albania	36
Serbia	41
Romania	46
Germany	57
Lithuania	64
Czech Republic	65
Slovakia	70
Hungary	75
Latvia	93

Poles are among the world's leading nations that most actively use public digital services. **Poles are among the 5% most digital nations in the world**.

Did you know?

Poland is one of the few countries in the world that offers its citizens an identity card, driving licence, school ID card and many other official documents in a mobile application called mCitizen (**mObywatel**). Poles can also use an Internet Patient Account (**IKP**) where they can quickly check information about their health: their own, their children's or those who have authorised them to do so. Poles also receive **prescriptions** from their doctor digitally (**E-Recepta**), on their phone. Most Poles have been filing their **tax returns online** for many years.



Top 10 destination countries for STEM greenfield FDI by project numbers, 2015-2020

Country	2015	2016	2017	2018	2019	2020	Share
US	595	595	685	709	724	533	14,7%
UK	376	314	318	432	419	283	7,8%
Germany	278	253	243	263	264	169	4,7%
India	346	356	283	383	328	154	4,2%
China	330	272	308	345	303	137	3,8%
France	150	144	233	231	195	132	3,6%
Spain	68	78	107	171	191	129	3,6%
Canada	80	100	103	121	121	122	3,4%
Mexico	190	226	206	185	219	104	2,9%
Poland	**78**	**113**	**97**	**102**	**100**	**101**	**2,8%**
Other	1968	2065	2120	2498	2430	1756	48%
Total	4459	4516	4703	5440	5294	3620	

Science, Technology, Engineering, and Mathematics (STEM) form the cornerstones of the modern economy. The term was originally coined in the early 2000s to frame a discussion around preparing students for 21st century high-tech jobs. **STEM and its neighbouring economic development agent, FDI, are key drivers of the innovation that lies at the core of modern economic growth**. The hybrid term, STEM FDI, seeks to capture high-value cross-border investments in sectors with higher levels of STEM inputs. This will help to understand which economies are receiving larger volumes of value-adding investments. fDi Markets recorded a total of 3620 FDI projects in STEM in 2020 which represented approximately one third of all projects, retaining the market share it held over the previous four years despite the economic downturn.

More than **half of all STEM FDI projects recorded in 2020 were concentrated in the top 10 destination countries**. **The top 10 destination countries for STEM FDI have consistently attracted investment projects in industries characterised by high knowledge intensity and economic value added, such as life sciences and ICT**. Globally, software and IT services ranked as the top sector within STEM for FDI project numbers.

Source: The fDi report 2021. Global greenfield investment trends, GUS (Statistics Poland), ABSL, Eurostat, KPMG

Poland is a great place to develop STEM R&D for global corporations

- **1,39%** | Relation of **gross domestic expenditure on R&D to Polish GDP** (in %) in 2020
  - 1,1% avg. for CEE region (2019)
  - 2.2% avg. for EU27 (2019)
- **6 381** | Number of **entities in R&D** in Poland, 83% increase since 2014
- **283k** | Total **employment in R&D** sector in 2020
- **1602** | The **number of business service centres** in Poland (Business Process Outsourcing, Shared Services Centre, Global Business Services, IT and R&D)
- **EUR 22.83 bln** | Poland has had a **positive balance of payments in international trade in services** since joining the European Union. In 2020, the balance amounted to **22.83 billion euros**. Exports of services amounted to EUR 58.04 billion and imports of services amounted to EUR 35.21 billion
- **27,4%** | Poland is an economic powerhouse in logistics services and advanced business services. As much as 28.2% of exports were transport services, and **business services** 27.4%. Together with telecommunications, IT and travel services they accounted for 82.2% of total exports.

- **42% of deals** | Poland is the leader in Central and Eastern Europe in terms of the number of Venture Capital deals. Of the 733 disclosed funding rounds in 2020, almost half (313) were directed to Polish companies
- **100+** | Number of active Venture Capital funds in Poland
- **12 billion euro** | Money that PE/VC funds invested in Poland so far
- **1600 Polish companies** | PE/VC funds have invested in so many companies in Poland
- **7th in the World** | Poland has been voted the seventh most friendly country in the world for Start-Ups, in a survey by CEO World Magazine
- **4 300 – 4 700 startups** | Number of tech startups in Poland
- **A grade** | In 2019 almost 40% of startups have been cooperating with corporations, with 75% rating this cooperation as good or very good (A). the corporate world in Poland is increasingly ready to drive the growth of startups
- **45** | Poland is home to the largest number of top technology companies in the CEE region. As many as 45 of the top 100 technology companies in CEE are located in Poland (2021, Digital Champions CEE 2021 ranking)

Source: Vestbee, PFR, Startup Poland foundation, Digital Poland foundation

- **3rd in human capital ranking** | Poland's place in the human capital talent ranking among 23 maturing economies in Europe
- **5th place in OECD** | In Poland, 92% of adults aged 25-64 have completed upper secondary education, much higher than the OECD average of 78% and one of the highest rates in the OECD
- **16th in English language skills** | Poland's place among 100 countries in terms of English language skills
- **Over 1.2 million students in higher education** institutions in 2020 (57.6% are female)
- Warsaw, the **Polish capital is the 2nd city in Europe in terms of the number of students with 235,000 people** (just after the Paris).Large number of students majoring in STEM faculties (Science, technology, engineering and mathematics)
- **349 higher education institutions** across Poland
- **554,000** | Number of ICT employees in Poland in 2020, including 400,000 IT employees
- **1st in CEE region and 5th place in EU** | Huge pool of ICT specialist. Polish ICT community accounts for nearly 36% of the entire ICT population in the CEE region
- **6th country in EU in terms of number of women working in ICT** | As many as 84 000 women work in ICT in Poland
- **3rd place** | World's Most Hardworking Programmers
- **3rd place** | The Best Developers in The World ranking (SkillValue)
- **5th place** | TopCoder Country Ranking (as of Feb 2020)
- Poland's **3rd place at the International IT Olympiad** in terms of medals won

Source: Research in Poland, GUS (Statistics Poland), Eurostat, SkillValue, Hacker Rank

3. Capital for innovation

IN COOPERATION WITH

Baker McKenzie.

MCI

- **12 billion euro** | Money that PE/VC funds invested in Poland so far
- **1600 Polish companies** | PE/VC funds have invested in so many companies
- **460 in the portfolio** | More than 460 Polish companies are currently in the portfolios of private equity / venture capital funds
- **Active PFR Ventures** | PFR Ventures' only investor is the Government of Poland. It's the **largest fund investor in the CEE** region:
  - **PLN 3 billion** assets under management,
  - more than **50 portfolio funds,**
  - more than **350 indirect portfolio companies**
  - In the VC area alone, the share of financing of entities funded by PFR Ventures in the total value of 2020 rounds with the participation of Polish start-ups is 29 percent.
- **PLN 1,1 billion for Private Equity** | The state via PFR Ventures will invest PLN 1.1 billion in the domestic Private Equity market:
  - **PLN 0,6 billion** already invested: Accession Capital Partners, Apax, Avallon, H.I.G Capital, Innova Capital, PAI Partners, Value4Capital
  - **PLN 0,5 billion** to be invested**.** PFR Ventures is recruiting PE funds under the PFR PE programme in a continuous formula. Interested entities can count on investments between 20 and 110 million PLN (the maximum share of an institutional investor may not exceed 25%). Money for funds will be invested until the full pool is used up. However, PFR announces that in the future the outlays for PE-type investments will increase.
- **Poland as the top investment market in CEE** | According to the dealmakers questioned by Baker Tilly - CEE offers some of Europe's best M&A opportunities. There were **672 deals worth US$49bn in 2019 in CEE**, what was an increase of 6 % in volume and 5% in value from 2018 (as only one of the few sub-regions in Europe). There is still a growth potential, since CEE still accounts for only 9% for deal volume and 6% for deal value of all European M&As
- **Poland is home to the largest number of top technology companies in the CEE region** | As many as 45 of the top 100 technology companies in CEE are located in Poland (2021, Digital Champions CEE 2021 ranking)

Source: PFR, PSIK, Baker Tilly TPA 2020 report, digitalpoland

- **The biggest potential for further investments have companies from Tech and IT sectors (according to 56% of the PE funds)**
- **The biggest factor building Polish companies' value is international expansion of their businesses (according to 69% of the PE funds)**
- **Most of the expected exits will be acquisitions by strategic players (according to 90 % of the PE Funds) or other PE funds (80%)**

It can be anticipated that due to rising target valuations, the majority of bidders will be foreign entities

Source: According to the survey and report „Barometr branży PE i VC w Polsce" by JP Weber, 2020

Year	Number of deals in total (according to Fordata)	TMT deals share (according to Fordata)
2 Q 2021	82	29%
1 Q 2021	76	16%
2020	229	22%
2019	179	20%
2018	199	18%

Source: Reports "M&A Index Poland" by Fordata & Navigator Capital

Tech/Media deals was the Top 3 sector of the Polish M&As in 2020.

It is expected that the share of the tech PE deals will further increase.

Year	Number of deals	Deals total value (PLN)
2018	50	156
2019	269	1266
2020	313	2127
1H 2021	212	1179

Both the number and size of VC deals in Poland are growing steadily and it can be expected that 2021 will be another very good year.

Source: Reports by PFR Ventures and Inovo Venture Partners „Transakcje na polskim rynku VC". source: Polish VC Market 2017–2018. The Polish venture capital market is… | by Tomasz Swieboda | Inside Inovo | Medium

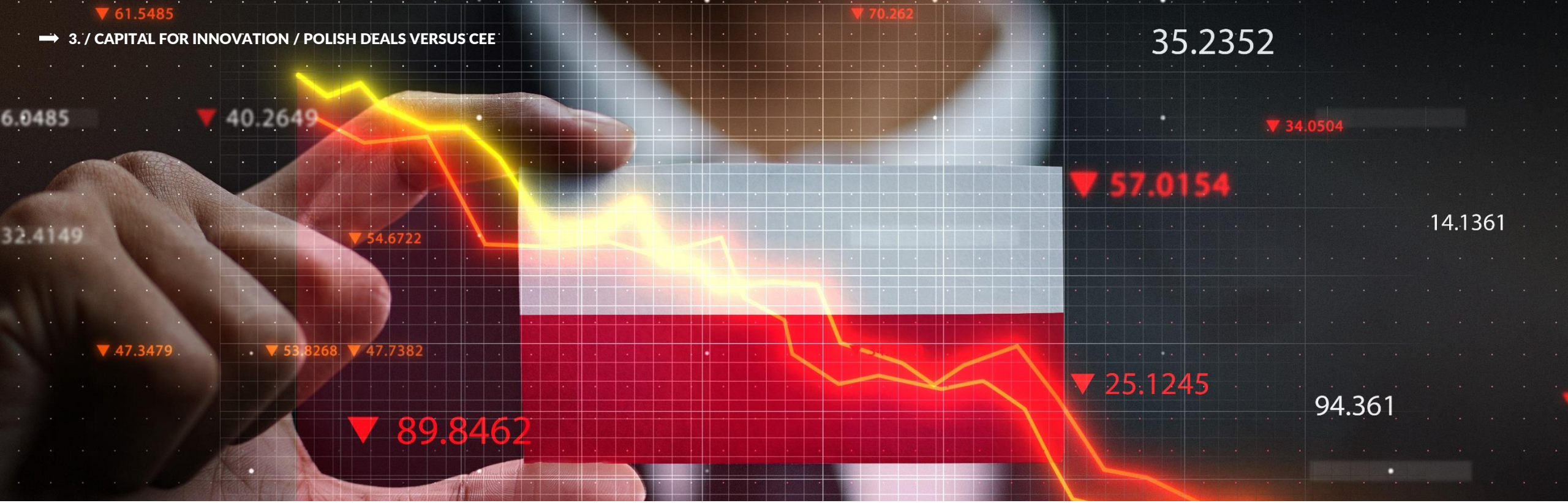
2020 mega-rounds:

- Booksy EUR 59m
- Brainly EUR 67m
- ICEYE EUR 74m

EUR 200m

2019 mega-round:

- Docplanner EUR 80m

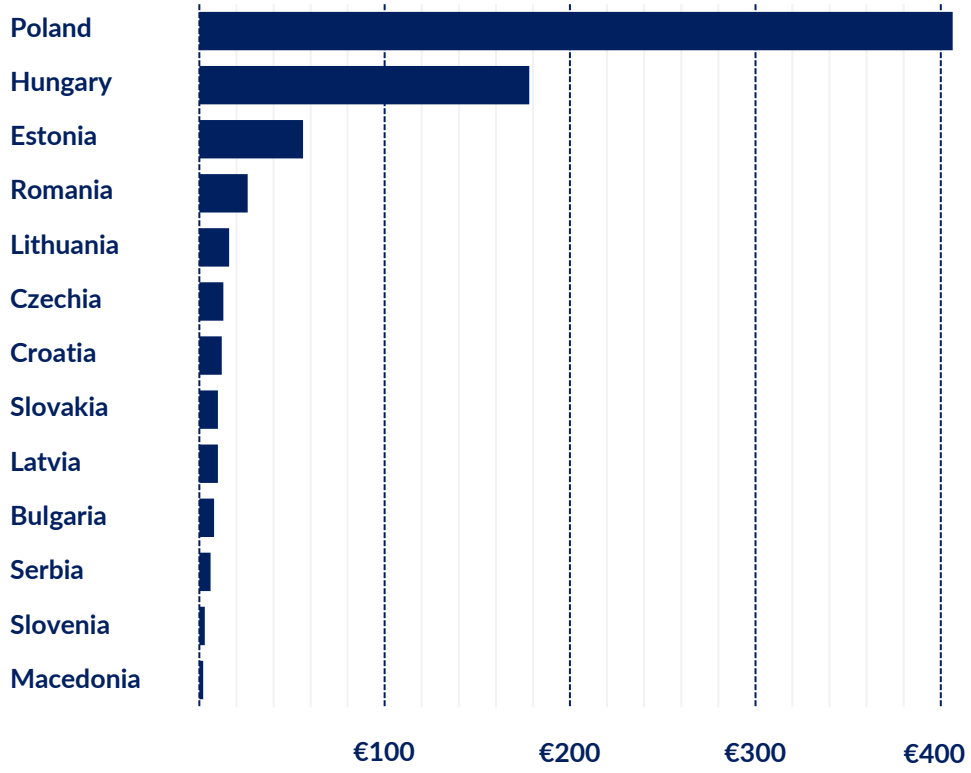


Country	Investments number [2020]	Investments amount [2020]
CEE	733	EUR 1B
Poland	313	EUR 430 m
Hungary	110	EUR 110 m
Estonia	97	EUR 100 m

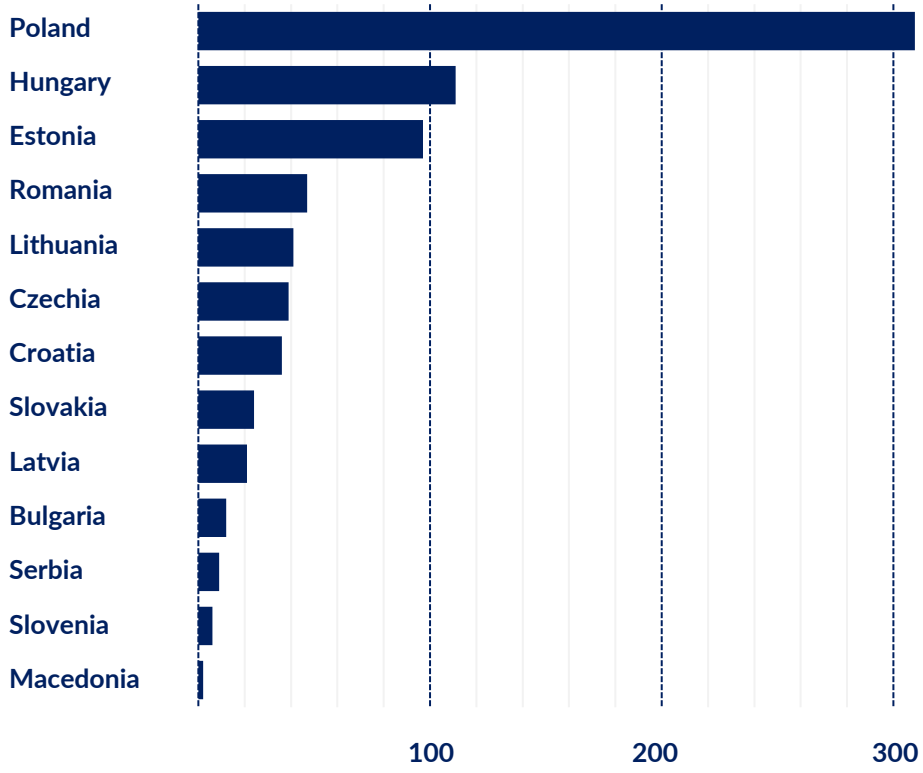
Source: Vestbee, VC Funding In CEE Report - 2020

Poland is the leader in Central and Eastern Europe in terms of the number of VC transactions. From 733 disclosed financing rounds in 2020, almost a half (313) targeted Polish companies. Companies from the region raised almost EUR 1B (in disclosed deals) - share of the Polish companies was over €430 m according to Vestbee.

Amount of investment in CEE countries in 2020



Number of investments in CEE countries in 2020



Source: Vestbee, VC Funding In CEE Report - 2020

- **Private vs Publicly-private in 2020**
  - Per Deal Value
    - 62 % - publicly-private (cooperation with the Polish state-owned fund of funds / EU funds)
    - 38 % - private
  - Per Number of deals
    - 83% - publicly-private (cooperation with the Polish state-owned fund of funds / EU funds)
    - 17% - private
- **Polish vs Foreign**
  - Per Deal Value
    - 52 % - Polish
    - 48 % - Foreign
  - Per Number of deals
    - 87% - Polish
    - 13% - Foreign
- **Main Foreign Investor**
  - USA - 45%
  - UK – 20%
  - Germany – 5%
  - UE (Other than Germany) – 18%

A significant share of the capital invested in VCs is public, but the share of private money (including from foreign investors) is rising.

Source: Reports by PFR Ventures and Inovo Venture Partners „Transakcje na polskim rynku VC"

Radzym Wójcik

Advocate, Baker McKenzie in Poland

The last couple of months have been very successful for Polish tech companies and their investors, some of which are internationally renowned funds. IPOs of Inpost (Advent portfolio company) and Allegro (Cinven-Permira-MEP consortium portfolio company) – have been well noticed by international business and we can assume that they were quite profitable for the owners.

The Polish economy is growing and digital transformation is one of the main engines of this growth, so we can look forward with optimism to the months ahead. The internet, mobile sales and services provided online have opened the door to international markets for Polish entrepreneurs. Still, most of the turnover of Polish companies is generated locally, but there is a fast-growing number of companies that sell mostly abroad. I think they will be an interesting partners for foreign investors and will shortly become household names in the European and global economic landscape. Also, foreign investors are welcome – to help local entrepreneurs with international expansion, and there are certainly more than a few companies in Poland that, with the right companion experienced in scaling up, may significantly increase their value.

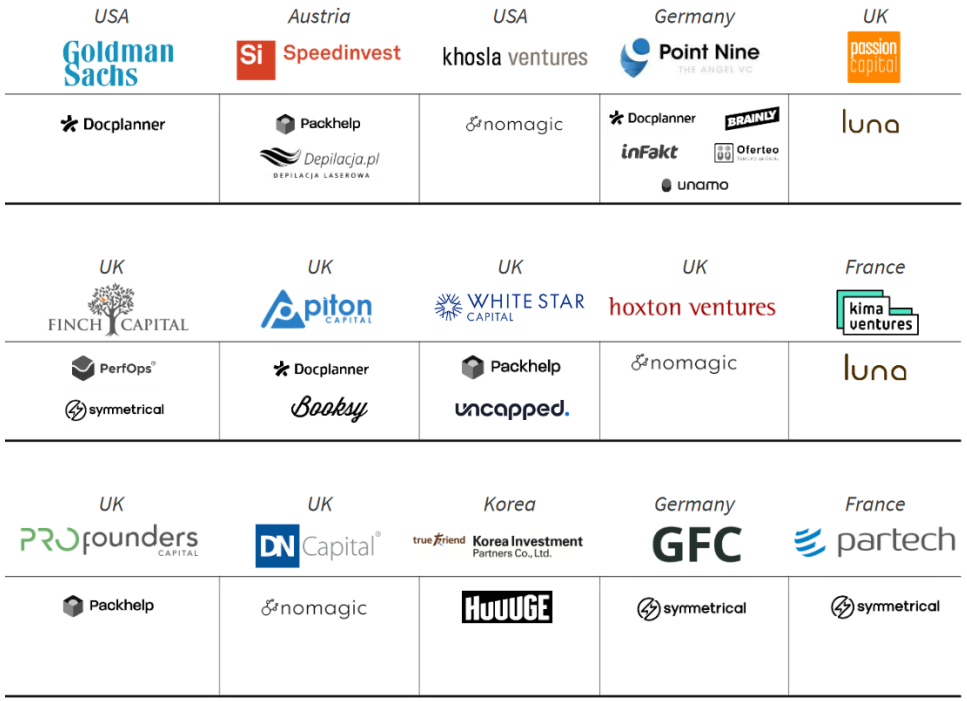
Interesting addresses to learn about the Polish investment landscape:

- **PFR Ventures** | Largest fund investor in the CEE region | Learn more
- **PSIK** | The Polish Private Equity and Venture Capital Association | Learn more
- **Startup Poland foundation** | Polish Foundation supporting startups and funds | Learn more
- **Cobin Angels** | Professional club of business angels in Poland | Learn more

Fund	Founded	Stage	Selected portfolio companies
Inovo Venture Partners	2012	Late Seed / Series A	Booksy, Infermedica, Tidio, Allset, Eyerim, Restaumatic, Brand24 (exited), ECC Games (exited)
Market One Capital	2018	Seed	Packhelp, Eversports, Genial.ly, Tier Mobility
OTB Ventures	2017	Seed / Series B	BabbleLabs, FintechOS, Cosmose, Minit, Silent Eight Search, Spaceknow, SEGRON
Black Pearls VC	2008	Seed / Series A	Autenti, Insly, Eagronom, Deep.BI, Teamscope, MN Diagnostics, IGrid
Cogito Capital Partners	2019	Series A-C	MarketFinance, APPLICA.AI
TDJ Pitango	2017	Seed / Series A	Cosmose, StethoMe, CallPage, Neptune.ml, Tylko
Innovation Nest	2010	Seed	Silvair, Infraspeak, Perfect Gym, UXPin, Cobalt Labs, Elmodis, Callpage, Infermedica, HCM Deck, Estimote
bValue Angels VC	2016	(Pre-)Seed	Shoplo (exited), Tidio, Senuto, PushPushGo, Spinbackup, CallPage
Experior Venture Fund	2013	Seed / Series A	ZenCard (exited), Cosmose, Tylko, RevDevBug, iTaxi
Montis Capital	2018	Seed	Talkkin' Things, Skriware
Alfabeat	2015	Seed	Wolt, Andiamo, RoboCamp, Recruitment Smart, Intiaro, Coinfirm, Hotailors, Perfect Gym, Promo Republic, Monetizr
Speedup Venture Capital	2009	Seed / Series A	StethoMe, Lets Deliver, Fitatu, Omni3d, Survicate
Fidiasz	2017	Seed / Series A	Versabox, Emys, FinAI

Source: Source: Dealroom.co, PFR Ventures, Startup Poland. Polish and CEE tech ecosystem outlook, July 2020

ACTIVE IN 2019



ACTIVE IN 2020

enern

FINCH CAPITAL

GFC

hoxton ventures

RHEINGAU FOUNDERS

Runa Capital

"PFR's strategy in the Polish market has enabled the ecosystem to become more aware of nuances that come with venture and attracted talent and funding across the world. We are also starting to see a number of companies graduating from the pre-seed/seed stages to series A/B companies, which is a sign that the ecosystem is starting to flourish and we expect an increase of larger rounds to take place in 2021. Finch remains very enthusiastic about Poland and recently invested into SMEO a Polish factoring company."

Arman Ghei, Partner, Finch Capital

Source: Source: Dealroom.co, PFR Ventures, Startup Poland. Polish and CEE tech ecosystem outlook, July 2020

2019

		Sector	LPs	Investments in Poland
Independent CVC funds	SpeedUp	Energy	SpeedUp Group, PFR Ventures	ZENCARD, StethoMe, OMNI3D, InStream, SMART PHARMA
	EEC ventures	Energy	Tauron Polska Energia SA, PFR Ventures	TakeTask, Challenge Rocket .com, SINTERIT, Reliability Solutions
	ICOS CAPITAL	Food/Energy	Nouryon, Bühler Group, Royal Cosun, Akzo Nobel	Reliability Solutions
Polish Corporations investing in startups	PGE ventures	Energy	PGE Capital Group	Connect Point, PYSENSE, lerta, Scanway, altlight., ABYSS GLASS
	RBL_ BY ALIOR BANK	Fintech	Alior Bank	AUTENTI, PayPo
	mBank mAccelerator	Fintech	mBank	HCM Deck, SAMITO, CYBER RESCUE, DIGITAL TEAMMATES, chatforce, DIGITAL FINGERPRINTS
	PGNiG	Oil & gas	PGNiG Group	Currently screening applicants.

2020

CVC supported by PFR	Other CVC
6 deals value of rounds: EUR ~10m	4 deals value of rounds: EUR ~1 m
EEC ventures, SpeedUp ENERGY INNOVATION POWERED BY PGE ventures	pracuj ventures
Direct	**Foreign CVC in PL company**
4 deals value of rounds: EUR ~12m	1 deal value of rounds: EUR ? m
ALIOR BANK, ING, Bank Polski, ?, ?, BNP PARIBAS, Przelewy24	Mastercard

Source: Dealroom.co, PFR Ventures, Startup Poland. Polish and CEE tech ecosystem outlook, July 2020; Polish VC Market Outlook 2020. PFR Ventures, Inovo.

Almost **one in two companies in the ranking of the 100 largest technology companies in the CEE region comes from Poland**

The total capitalisation of the **largest Polish technology companies** in the **Digital Champions CEE** ranking is **over USD 43 billion.** This constitutes **32% of the capitalization of the entire region within TOP100** as of October 2021

20 largest technology companies in Poland		
#1	allegro	Allegro
#2	InPost	InPost
#3	CD PROJEKT	CD Projekt
#4	eobuwie.pl	Eobuwie
#5	TECHLAND	Techland
#6	Docplanner Group	DocPlanner
#7	booksy	Booksy
#8	blik	Blik
#9	pracuj.pl	Pracuj.pl
#10	WP	Wirtualna Polska
#11	LiveChat	Livechat Software
#12	PlayWay	PlayWay
#13	HUUUGE	Huuuge
#14		Ten Square Games
#15	neo by E100	E100
#16	Shoper	Shoper
#17	RTB HOUSE	RTB House
#18	BRAINLY	Brainly
#19	X-kom	X-kom
#20	Displate	Displate

Source: Digital Poland Foundation, October, 2021

Digital Champions CEE 2021 | Report

- Within a decade, the number of digital champions, i.e. **companies worth at least USD 1 billion, increased from 1 to 36 in CEE region, and their value exceeded USD 130 billion**. This is the fastest pace in the whole of Europe, thanks to which the Old Continent is the leader in terms of the pace of development of technology companies, overtaking even China.
- These are the conclusions of the Digital Champions CEE ranking by the Digital Poland Foundation, the first such comprehensive and reliable list of digital leaders in Central and Eastern Europe.
- The Digital Champions CEE ranking is created on the basis of transparent, up-to-date data based on strict financial criteria. The champions are determined not only by EBITDA, but also by significant capitalisation, and the majority of the champion's revenue must come from digital products and services or through digital channels. **Data for the ranking was provided by specialist platforms Pitchbook, Merger Market and Dealroom, as well as over 170 PE and VC funds**.

Click here to download

Company	Round Amount	Business	Series	Selected Funds
Booksy	PLN 266 m	Booking system	Round C	Cat Rock, Kaya.vc, Manta Ray, Open Ocean, Piton
Brainly	PLN 302 m	Online learning platform	Round D	Runa Capital, Prosus, Manta Ray, Learn Capital, General Catalyst
ICEYE	PLN 331 m	Satellite imagery access	Round C	True Ventures, Draper Esprit
DocPlanner	PLN 344 m	Doctors booking system	Round E	Goldman Sachs

According to many experts, the Polish ecosystem has reached a critical mass, which should accelerate growth and result in bigger and more profitable deals and international business. Further investments by blue chip funds are also expected

Source: PFR

Company	Type of business	Approx. valuation*
CD Projekt Red	Gaming (Famous for The Witcher and Cyberpunk 2077)	USD 4.4 billion
Techland (planned IPO)	Gaming (Call of Juarez, Dead Island and Dying Light)	USD 1.2 billion
Wirtualna Polska	Online media	USD 1.1 billion
Ten Square Games	Mobile gaming	USD 1 billion
LiveChat Software S.A.	Customer service software company	USD 0.75 billion

Source: Digital Poland Foundation, October, 2021

Poland has proven to be a booming hub for the gaming industry in recent years, attracting both private investors, buying public securities and financial / industry investors from Scandinavia, Asia, Eastern Europe and the US.

Barbara Nowakowska

Managing Director, Polish Private Equity & Venture Capital Association (PSIK)

Poland is a very attractive market for private equity and venture capital investors. Nearly 4.5 billion euro was invested into Polish companies by private equity and venture capital funds in 2017-20 according to the data of Invest Europe. This figure does not include private technology investors, family offices and corporations who have also become very active in the technology market and invest alongside venture capital funds.

International investors have been present in private equity funds for thirty years financing hundreds of successful investments. Now it's time for their broader involvement with venture funds. The Polish venture capital market, supported by public fund-of-funds, PFR Ventures, has been rapidly growing lately, injecting over 1bn euro into young technology companies since the beginning of 2019. Poland is famous for its rich pool of tech talent and entrepreneurial spirit. Here come future Polish unicorns.

PSIK Polskie Stowarzyszenie Inwestorów Kapitałowych

Polish Private Equity and Venture Capital Association (PSIK) gathers private equity/venture capital investors active in Poland. Associate membership is also available for other persons, companies and institutions interested in development of the private equity/venture capital industry in Poland. 45 Private / equity funds are members of the Polish association of the business.

The mission of the PSIK is to promote and develop the private equity and venture capital industry in Poland, and to represent the interests of the Polish private equity and venture capital community in Poland and abroad.

The objectives of the PSIK include:

- Increase awareness and understanding of the Polish private equity/venture capital industry, in particular among potential investees. Make private equity/venture capital investing more widely known and better understood;
- Present the industry as a viable, accessible and critical part of the capital market and a key factor for development and growth of individual companies and the Polish economy in general;
- Keep Members informed about significant initiatives and proposed changes to the legal, tax and regulatory environment. If necessary, develop and articulate common positions on relevant issues;
- Facilitate contacts between the Members: sharing experience, discussion and networking;
- Assist in education and training for private equity/venture capital professionals;
- Maintain ethical and professional standards among Members;
- Act as an interface and link to other relevant institutions and associations in Poland and abroad;
- Collect and present information and statistics about the industry in Poland;

Want to learn more? | b.nowakowska at psik.org.pl | Visit psik.org.pl/en/

4. Polish startups

IN COOPERATION WITH

STARTUP POLAND

daftcode

7th in the World | Poland has been voted the seventh most friendly country in the world for Start-Ups, in a survey by CEO World Magazine.

4,300 – 4,700 | Number of tech startups in Poland.

60% | So many companies are ICT companies out of all Polish startups.

5 hubs | 65% of all startups in 5 hubs | Warsaw, Wrocław, Kraków, Lublin and Tri-City, in that order, are the largest startup ecosystems, being home to over half of all Polish tech companies. The entrepreneurial potential of some of the biggest Polish metropolitan areas, such as Poznań, Łódź and Katowice, has been consistently declining over the years.

39% | This is the percentage of surveyed startups that have customers outside of Poland. 75% of all startup plan to do so within 12 months.

2:1 | It is twice as easy to get a state grant than a term sheet from a VC. 32% is the success ratio for startups looking to raise a venture round and 69% – for public grant applications. However, half of the grants are less than EuR 125k, so we are not talking about an amount of capital that is enough for world class R&D.

EUR 2.5 mln | 10% of VC-backed startups have raised more than EUR 2.5 milion.

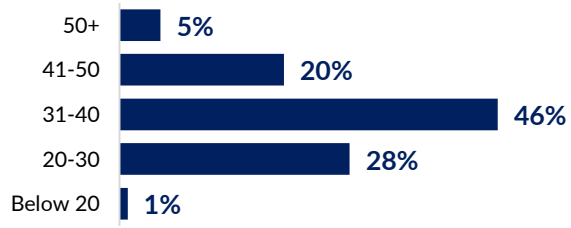
A | In 2019 almost 40% of startups have been cooperating with corporations, with 75% rating this cooperation as good or very good (A). the corporate world in Poland is increasingly ready to drive the growth of startups.

Source: Startup Poland Foundation, Digital Poland Foundation

Who are the Polish startups

The background of Polish startups and their previous experience can be an indication for those who are planning to start their own tech company. Polish startup market is becoming increasingly mature – recently, the average age of founders has been gradually increasing. In our 2020's survey, however, the respondents were asked not about their current age, but about how old they were when they set up their startup. It turns out that this task is most often undertaken by those around 30 (46%), and the second most numerous group are the younger generation (28% of 20-year-olds). One quarter of the founders were 40 years old or older when their company started operating.

Which age group did you belong to when you set up your startup?



While the age of founders and startup managers has been increasing in subsequent years, the companies they set up are rather young – as many as 61% of them have been operating for less than 2 years, of which almost half (29%) less than a year. Every fourth Polish startup is between 3 and 4 years old. Those that have been on the market for over 5 years account for 14%.

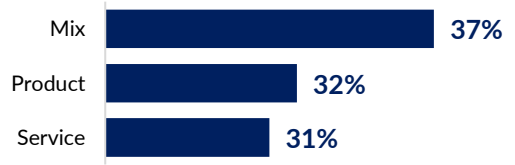
How many years has your startup been running?

Source: Startup Poland Foundation

What startups do in Poland

Analyzing Polish startups in terms of their offering, they can be divided into three groups of similar size – almost identical percentage sells a product (32%) or service (31%). A little more, 37%, declare that what they do is a mix of both.

What does your startup offer?



Startups are almost equally divided into those **selling physical (48%) and digital (52%)** products.

When it comes to **physical products**, mass products predominate here, e.g. clothes, cosmetics, accessories, toys (38%). Other categories received 21%: IT hardware, i.e. electronic equipment, or a customized product or product implemented individually at a given customer's site. 20% indicated yet another type of product, not specified in the survey.

Which category best describes your product? (physical)

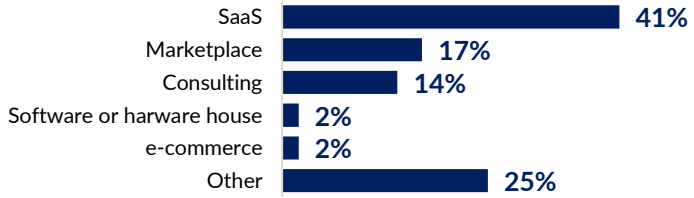
In the case of **digital services**, web-based applications, such as SaaS, are leading the way (69%), 13% are mobile applications, and a further 6% sell and implement customised software, i.e. a tailor-made product.

Source: Startup Poland Foundation

Which category best describes your product? (digital)

The startups surveyed were also asked to indicate what type of service they offer their customers. Most, 41%, describe their service as SaaS (Software as a Service), i.e. selling software as a service rather than a product. Marketplace is a solution offered by 17% of companies, and consulting by 14%. A relatively small number of startups pointed to hardware or software house services or e-commerce (in both cases only 2% of indications). Such a high prevalence of SaaS, as the most frequently offered category of services, should not come as a surprise - in surveys conducted in previous years, the results were similar.

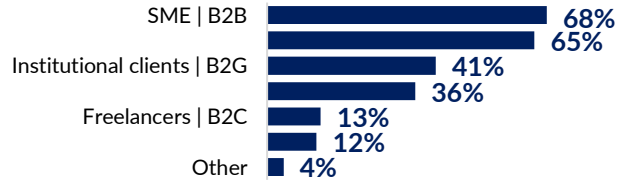
Which category best describes your service?



To whom Polish startups target their services or products

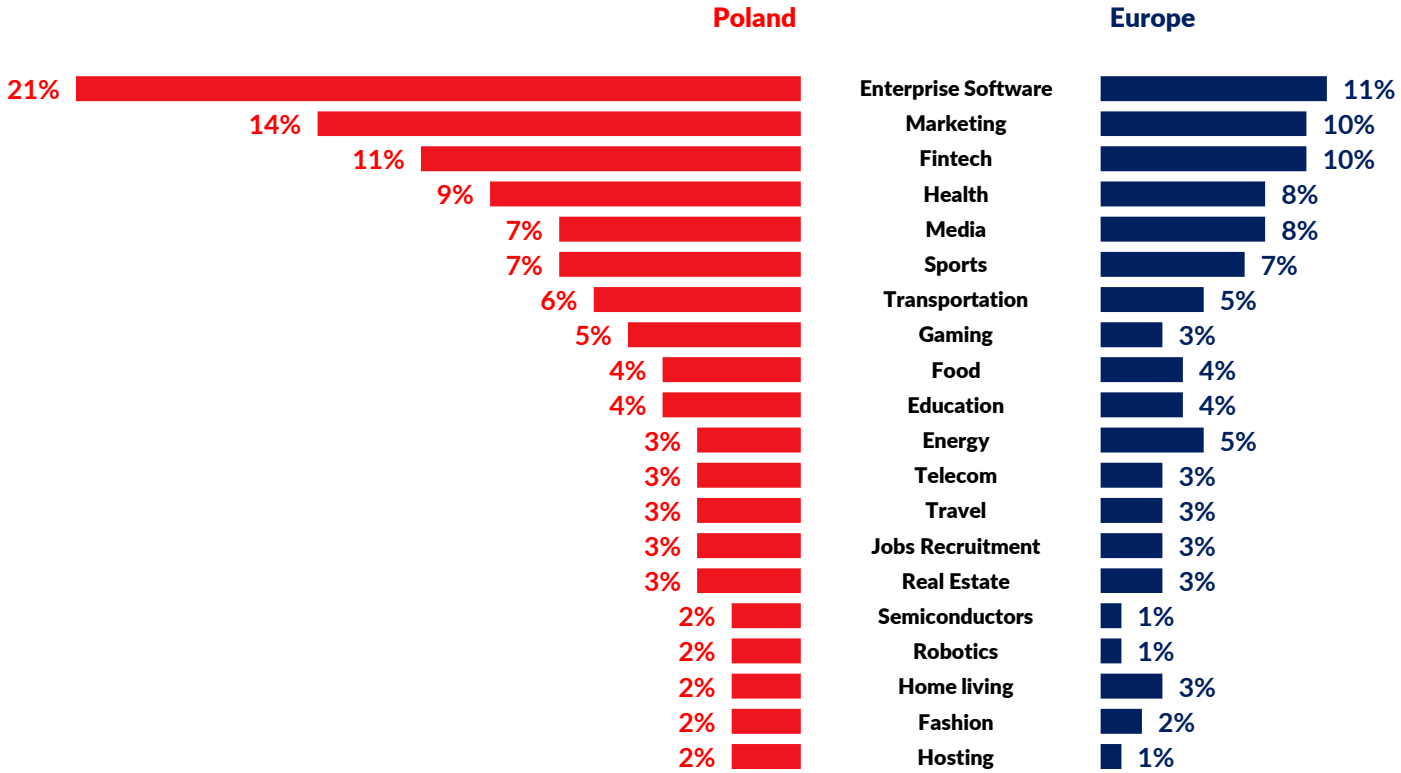
First of all, the vast majority of these are B2B activities – selected much more often than B2C or B2G. As far as the first group of respondents is concerned, 68% of the assumed target group of the offer are small and medium companies (up to 250 employees), and 65% – large companies employing over 250 people, and corporations. The third place is taken by institutional clients, such as: offices, local governments, schools, universities, hospitals or services. 41% of startups provide their services to these entities. For more than every third startup, the customers are mainly individuals (36%), and for 13% – other categories of individual customers.

What type of customer is your startup's target audience?



Source: Startup Poland Foundation

The Polish startup sector is known for software development. Compared to the EU, Poland has a higher concentration of startups in enterprise software, marketing solutions and game development.



- Poland has higher concentration of startups in enterprise software, marketing solutions and game development
- Polish startups are less active in the energy and home living sectors

Source: „Polish and CEE tech ecosystem outlook by PFR and dealroom" report. Only includes industries with >2% share of total number of startups.

30 ACCELERATORS FOR THE EARLIEST STARTUPS

LOCAL

reaktorx, HUGE THING, WARSAW BOOSTER '20, KPT ScaleUP, Orange Fab, #space3ac, INCREDIBLE INSPIRATIONS, co.brick, SCALE-UP CHAMPIONS, ABSL, RBL_START, invento, POLSKA przedsiębiorcza, IMPACT POLAND, WWW.ac, STARTUP SPARK, MOST FOUNDATION, NEXTGRID, Akcelerator Technologiczny Gliwice, Foodtech.ac

FOREIGN

Y Combinator, Startupbootcamp, WISE GUYS, accelpoint, DREAMIT, 500, techstars_, PLUGANDPLAY, NVIDIA, MIT Enterprise Forum CEE, hub:raum

EXAMPLE OF CVCs

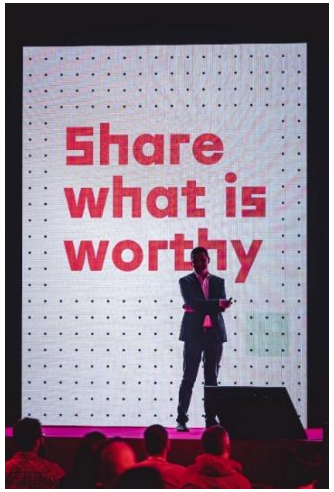
pracuj ventures, Accelerator.vc, PKO Bank Polski, PGE ventures, PGNiG, RBL, ICOS CAPITAL, SpeedUp, EEC magenta, MÜLLER MEDIEN, Santander, accel|Up

(Foreign)

Source: The ultimate map of Polish Funding Ecosystem, Inovo Venture Partners

infoshare

The Biggest Tech Conference in CEE region



At Infoshare, held annually in Gdansk, we **share what IS worthy**.

We started in 2007 as an after-hours event for developers, innovators, and fans of new technologies.

Year by year, the event grew, and we invited more and more speakers: investors, innovative startups, and marketing experts.

Dedicated to our mission, today we offer much more to the community! Learn more

Grzegorz Borowski
Co-Founder & CEO, Infoshare

49 000+
Attendees

1400+
Speakers

1350+
Partnerships

4150+
Startups

Wolves Summit

35 541 meetings

23 811 attendees

2939 investors

3883 executives

6051 startups

90 countries

Organising the largest, most active tech & innovation conference in CEE

Wolves Summit brings together the best creative and tech minds in the heart of Central Eastern Europe to network and make connections that matter.

Join us in the pursuit of Humanity 2.0

Michael Chaffe

CEO, Wolves Summit, Wolves Digital

- **Microsoft Technology Center (MTC) in Warsaw** | Learn more
- **1st in CEE region and 46th in the world**
  - Support for digital transformation by providing expertise and tools
  - Cooperation with private and public players
  - Microsoft has nearly 30-year track record of working successfully with Polish organizations and businesses of all sizes and with a network of more than 6,000 local partners
  - In just 16 months after announcing its investment supporting the development of the Polish Digital Valley, Microsoft has trained more than 150,000 people in advanced IT solutions, accepted more than 50 companies as Polish Digital Valley Innovators, and more than 120 solutions have been developed by partners at the Microsoft Technology Center in Warsaw

Innovation Alley in MTC

Presents innovations developed by Polish startups that are Microsoft Partners. Some examples below | Learn more

- Perfect Data
- Leaware & M4B
- RedNT
- Agrisolutions
- Ilabo
- Solution4Labs
- Pentacomp
- Photon
- Synerise
- Spartaqs
- Zonifero
- Billennium
- Sagra Technology
- Digital Fingerprints
- Seedia
- Talking Things
- 3D Printer

Jarosław Sokolnicki

Head of Microsoft Technology Center, Microsoft in Poland

All solutions presented in the Innovation Avenue of the Polish Digital Valley are not the future, but ready-to-implement technologies. Every company, regardless of the industry, can serve its customers even better, provide more tailored services and products using the potential of cloud, artificial intelligence or augmented reality. Innovation is happening here and now - many of our customers have already realised the potential of solutions created in collaboration with Microsoft partners and engineers at MTC.

- **Google Campus in Warsaw | 1 out of 7 Google campuses worldwide |** Learn more
- **Google for Startups | Started in November 2015**
- **Google for startups featured Programs**
  - **Startup School** | Google for Startups: Startup School is a series of hands-on, virtual trainings to advance founders and their teams. The program equips startups with the tools (like product management and UX design) and skills (like problem-solving) they need to address everyday challenges. The virtual sessions will be conducted by Google experts, entrepreneurs, and industry leaders from around world
  - **Founders Academy** | Founders Academy is a mentorship-focused program connecting women-founded startups from across the world to the best of Google. Beyond connecting the selected women-founded startups to each other, the program provides companies with access to growth opportunities and investors. In focusing on leadership, networking, and development, the program supports a powerful global community of women, equipping them with the resources they need to grow their startups.
  - **Accelerator: Europe** | It supports selected startups' growth and innovation. Through the program, we share our approach to building successful companies, our AI-first methodology, and best practices for leadership. We also connect selected startups to expert mentors from across the globe who can help them solve their top technical and product challenges.
- **Google in Poland**
  - **Warsaw** | CEE regional Office
  - **Warsaw** | Campus Warsaw | Google for startups | Since 2015
  - **Warsaw** | AI R&D engineering centre
  - **Warsaw** | Cloud tech development center. The company's largest cloud technology development centre in Europe. Located on over 20k m2 of space in **The Warsaw Hub** complex by the Daszyńskiego Roundabout
  - **Wrocław** | Innovation Center, including cloud implementation team that helps clients from all over the Europe
  - **Wrocław** | Ads team that works with the largest advertisers in Europe. Google employs professionals with experience in the advertising, media, consulting, sales or marketing sectors, fluent in various foreign languages

Source: Digital Poland Foundation research

The Polish Tech Scene. 5 years.
The report is widely cited and serves as a key summary of the Polish innovation ecosystem. The 176-page report features easy to read infographics with analysis and commentary from experts based on a nation-wide survey with 1,235 respondents. The report rounds out 5 years of Startup Poland animating and quantifying the Polish Tech Scene.

Click here to download

Polish startups 2020. COVID Edition. Startup Poland Foundation for 6 years now has been preparing a report that comprehensively describes the situation of young, innovative companies in Poland.
This year's survey Polish Startups 2020 differs from previous editions, however. The report aims to diagnose how Polish startups found themselves in this situation, how the pandemic affected their business and which possibilities of financial support offered by the state turned out to be the best. Its subject is also the prognosis of the situation for the coming months.

Click here to download

Tomasz Snażyk

CEO, Startup Poland Foundation
Managing Partner, Snażyk Granicki & Partners

The Polish startup market is growing dynamically. According to the forecasts of PFR, this year the value of transactions will amount to over 2.5 billion PLN. Many VCs became active during the pandemic and understood why digitalisation is important. For many startups, the pandemic turned out to be an opportunity which, if they seized it, will pay off. - It was an opportunity for the active, those who were able to respond flexibly to market needs and make a "pivot". I see a big plus that the pandemic will leave behind - VC funds, as well as other industries, have realised that many activities or operations can be very successfully moved online, without harming their results. In a remote management environment, funds have quickly re-arranged their transactions and their course of action in an online reality, also from a legal perspective. And therefore this allows more transitions to be carried out at the same time.

STARTUP POLAND

The Startup Poland Foundation is a Polish think tank and a non-governmental organization established to raise awareness of the economic potential of startup companies among the public administration, and to represent the Polish startup community in the regulatory processes. The organization was set up by a group of local entrepreneurs, lawyers, researchers, and investors.

The purpose of Startup Poland is to identify and eliminate systemic barriers in Polish law and administration, which limit the rapid growth and development of young companies, as well as to promote regulation and recommend activities that stimulate technology entrepreneurship. These activities are to help create a legislative and administrative environment in Poland to support the development of innovative projects with global reach.

Want to learn more? | kontakt at startuppoland.org | Visit startuppoland.org

5. R&D and Business Service Sector

IN COOPERATION WITH KPMG

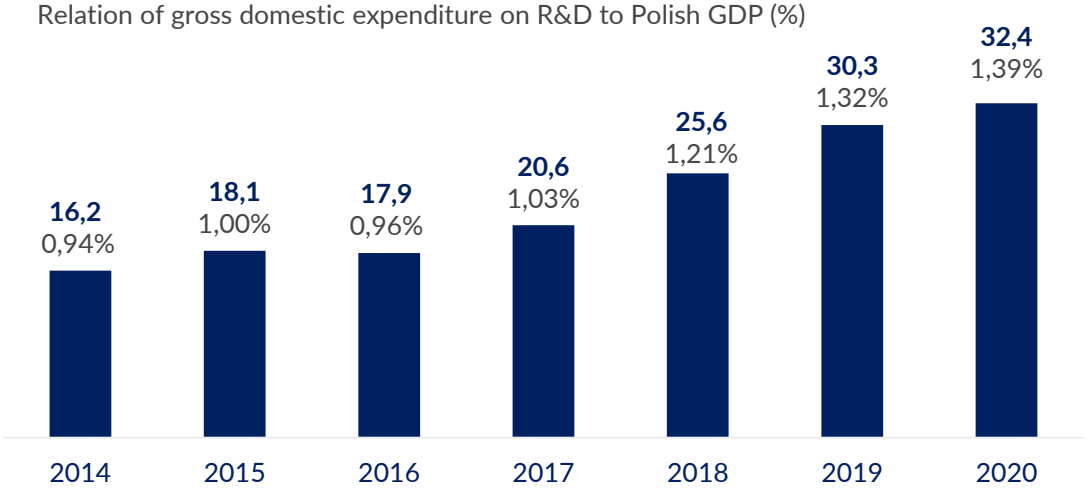
5.1. R&D

- **PLN 32,4 billion** | Gross domestic expenditure on R&D in 2020
  - PLN 20,4 billion | Companies
  - PLN 11,3 billion | Higher education sector, incl. R&D institutes
  - PLN 0,6 bln | Government
  - PLN 0,1 bln | Non-commercial institutions
- **18,1%** | Increase on R&D an annual basis (9,4% CAGR for 2010-2018)
- **1,39%** | Relation of gross domestic expenditure on R&D to Polish GDP in 2020
  - 1,1% avg. for CEE region (2019, Eurostat)
  - 2.2% avg. for EU27 (2019, Eurostat)
- **6 381** | Number of entities in R&D in 2020, 82% increase since 2014
  - 5738 | Companies
  - 292 | Higher education sector, incl. R&D institutes
  - 199 | Government
  - 152 | Non-commercial institutions
- **1 507** | Number of entities possessing research equipment (incl. 1258 entities from the business sector and 181 from higher Education sector) | 2019
- **283 492** | Total employment in R&D sector (2020)
  - 226 126 | internal R&D personnel
  - 57 365 | external R&D employees
- **88%** | R&D personnel with tertiary educational (2020)
- **39%** | Share of women in total employment in R&D (2019)
- **8,5** | Persons employed in R&D per 1000 professionally active persons (2020)
- **6,1** | Researchers per 1000 professionally active persons (2020)

Source: GUS, Eurostat

R&D expenditures in PLN billions

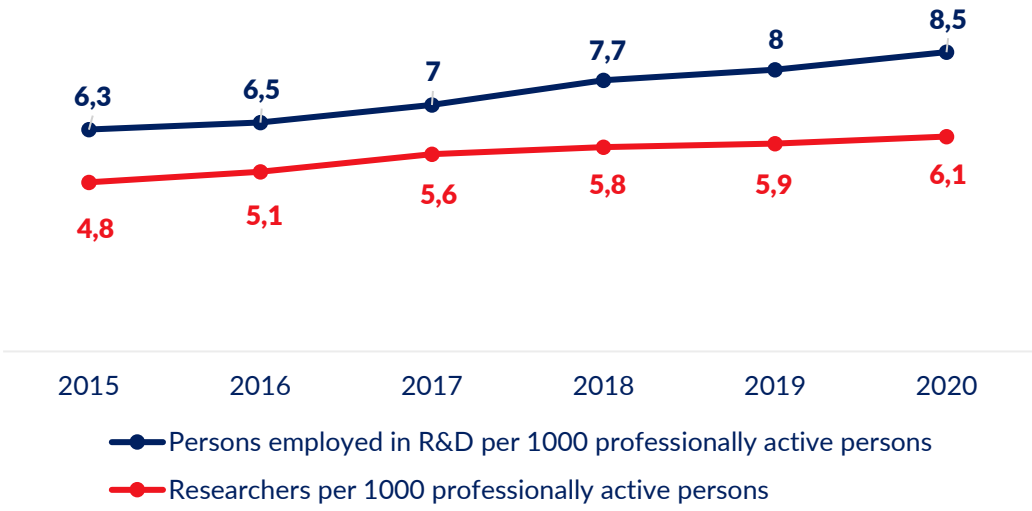
Relation of gross domestic expenditure on R&D to Polish GDP (%)



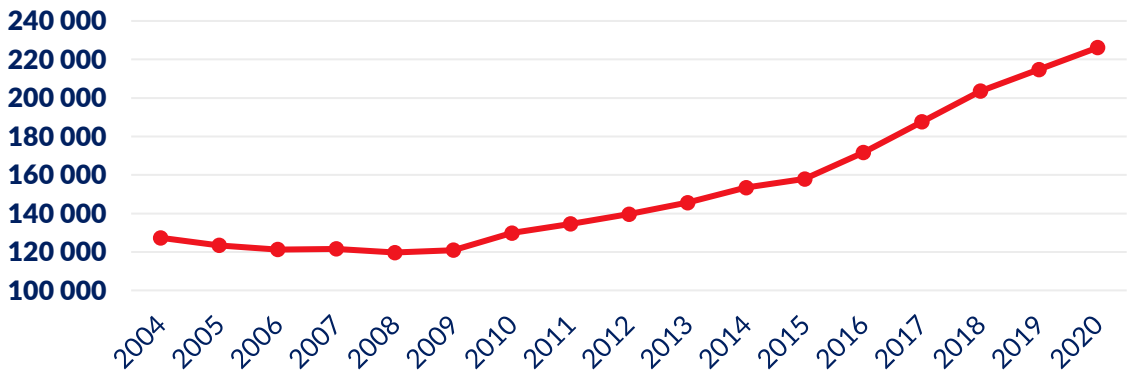
Growth of number of R&D entities in Poland

Source: GUS

Growth of employment in R&D sector

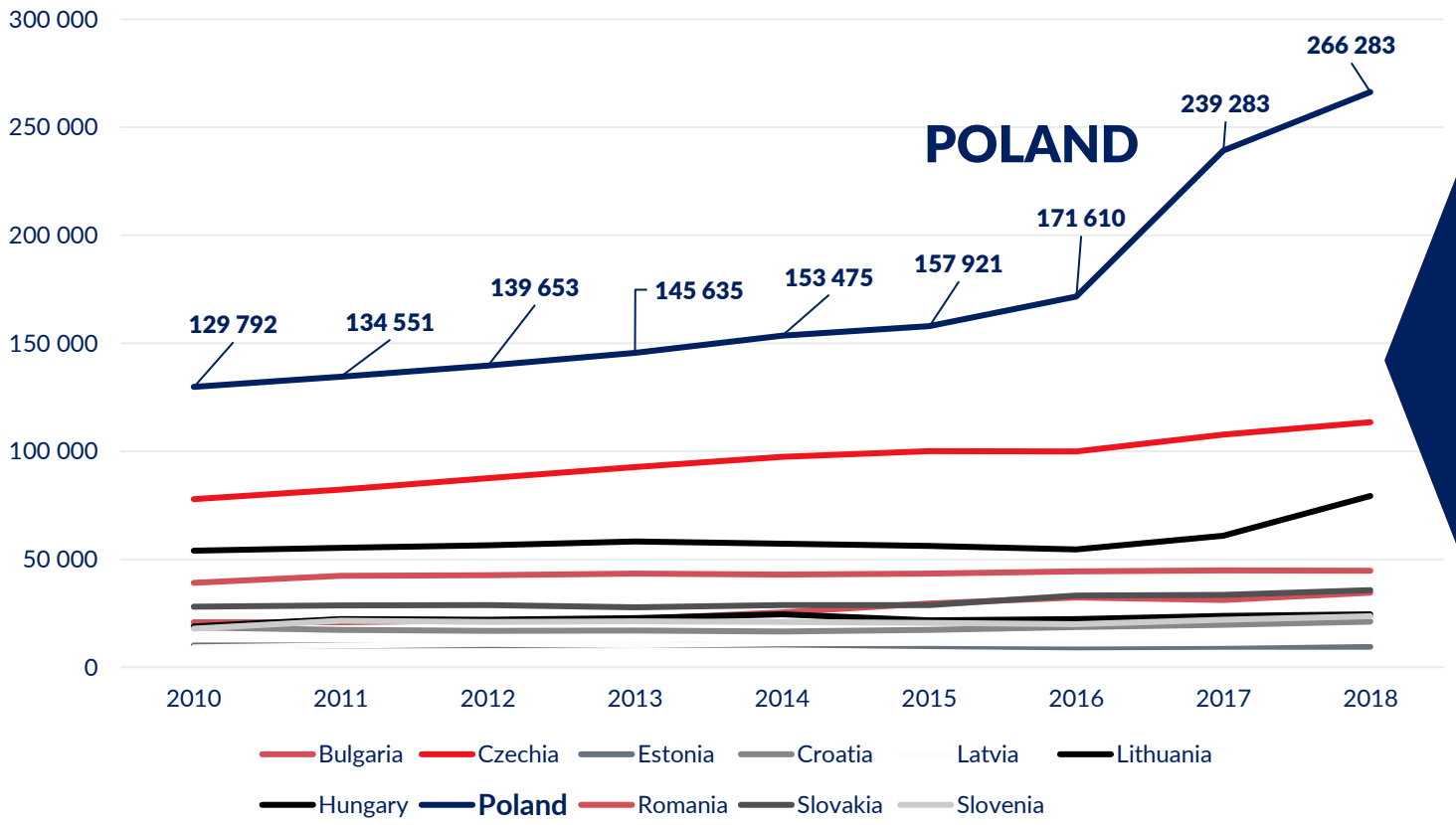


Internal employment in the R&D sector in Poland



Source: GUS (Statistics Poland)

Total R&D employment in the new EU member states

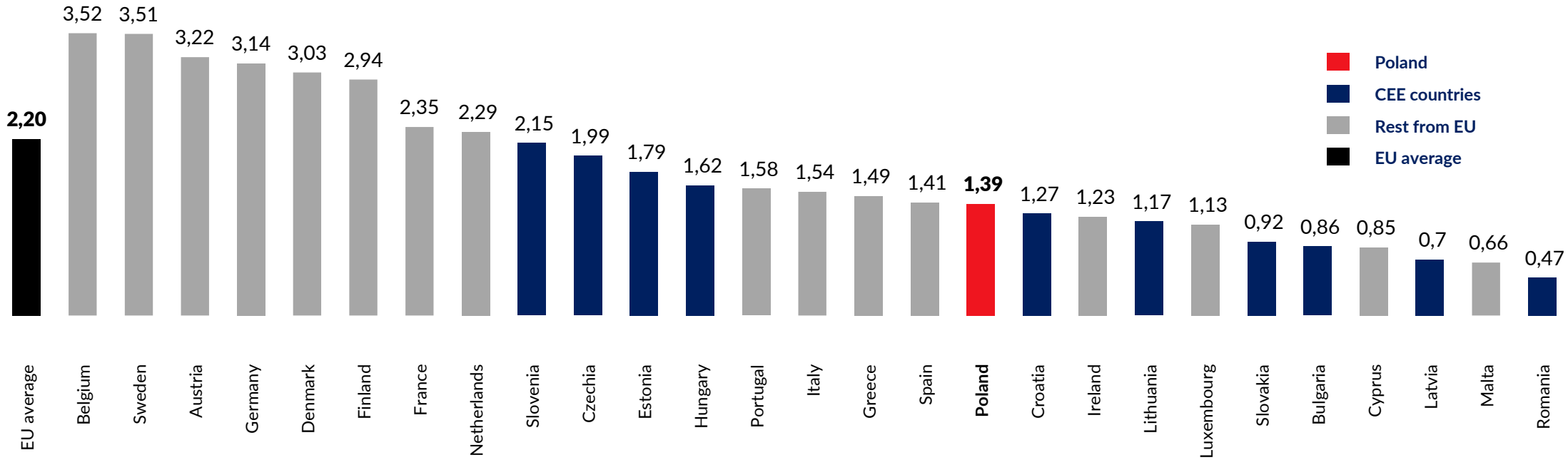


Poland leads among the new EU member states in terms of R&D personnel in absolute numbers and in compound annual growth rate:

Total R&D personnel	2010-2018 CAGR
Bulgaria	6,56%
Czechia	4,81%
Estonia	-0,76%
Croatia	1,76%
Latvia	3,55%
Lithuania	3,34%
Hungary	4,94%
Poland	**9,40%**
Romania	1,71%
Slovakia	3,05%
Slovenia	3,48%

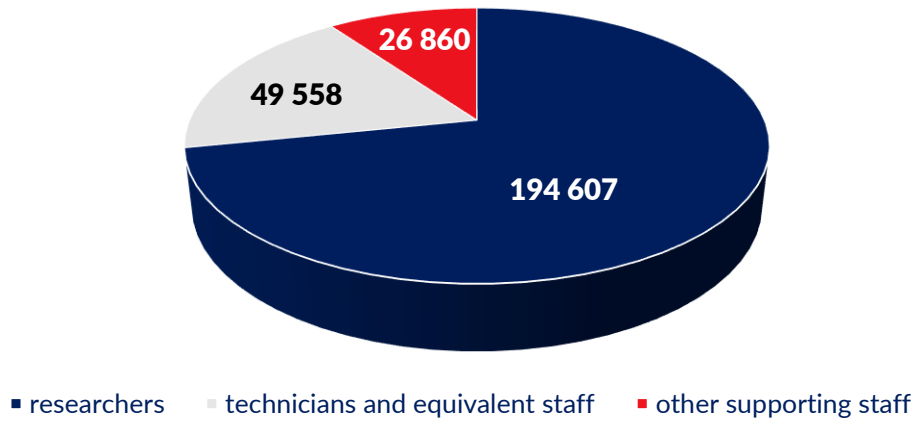
Source: Eurostat (2019 data, published in 2020)

Research and development expenditure as percentage of GDP

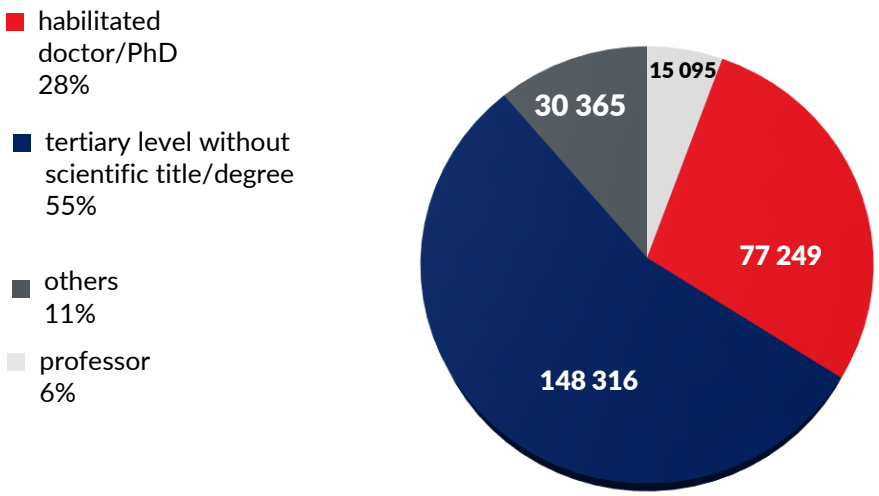


Source: Eurostat 2020, published in 2021

Employment in R&D sector by main groups

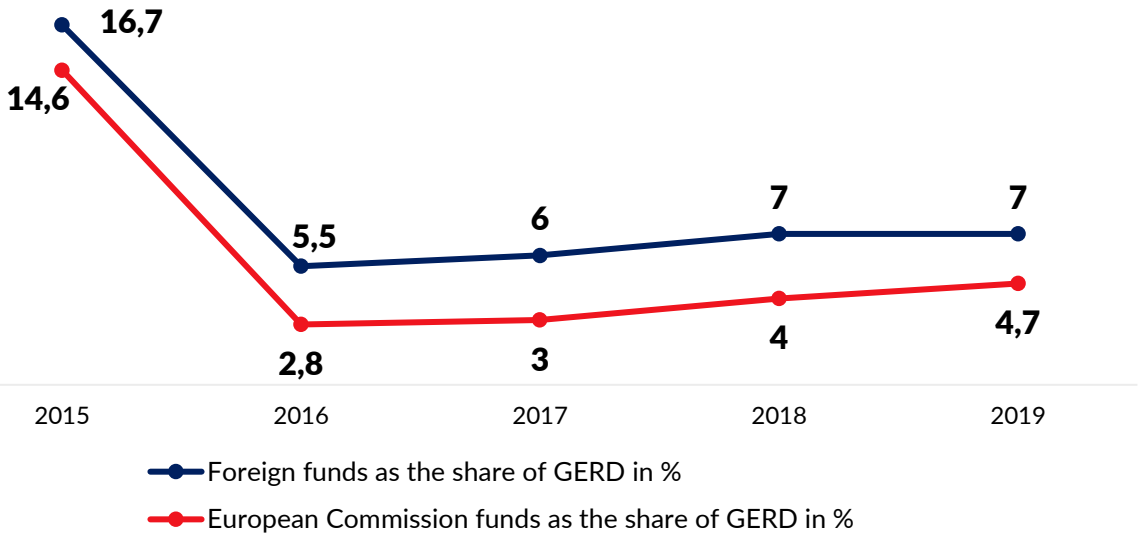


R&D personnel by educational level in 2019



Source: GUS (2019 data, published at the end of 2020)

Foreign funds for R&D expenditures till 2019



Foreign capital in Polish R&D expenditures

- 7% share of foreign funds in R&D funding sources
- 4,7% share of the European Commission funds
- 17,6 % of all R&D entities use European Commission funds

Source: GUS (2019 data, published at the end of 2020)

- Poland become a key R&D hub for global players from all over the world
- Continuous investments in R&D and innovations by global players present in Poland such as Amazon, ByteDance (TikTok), Citi, Ericsson, EY, Google, Intel, ING, Huawei, Nokia, Orange, Ringier Axel Springer, Roche, Schneider Electric, Samsung, T-Mobile, UBS, VISA
- 420 new R&D centres, EU co-funded in 2014-2020 (Smart Growth Operational Program) – huge booster for the future R&D boom

Source: PAIH

Example of R&D in Poland

amazon

The text-to-speech technology powering Alexa is developed in Gdańsk

APTIV

In Kraków, Aptiv develops autonomous vehicle technology

ERICSSON

In Kraków and Łódź the company runs the largest R&D operations outside of Sweden

Google

In Warsaw, Google develops cloud and AI technologies across Europe

intel

In Gdańsk, Intel runs the largest R&D centre in Europe, specializing in computation technology

NVIDIA

In Warsaw, Nvidia optimizes DeepLearning platforms across the software stack

SAMSUNG

In Warsaw, Samsung runs the largest R&D centre outside of Korea and develops NLP

TOMTOM

In Łódź and Poznań, TomTom develops autonomous vehicle technology

T

DT R&D centre in Warsaw focused on AI for all NatCos

ringier axel springer

RAS built an AI centre of excellence for the media sector in Europe

Source: Digital Poland Foundation

Nokia

Intel

UBS

Google

Samsung R&D Institute

IBM

Roche

Accenture

Epam

Credit Suisse

SII Group

EY

Capgemini

ABB

Aptiv

TCL Research Europe

Citi

P&G

Amazon

IQVIA

ING

TomTom

Ocado Group

OLX Group

Atos

Nvidia

T-Mobile

Bosh

ByteDance

Pearson OKI

Revolut

Nielsen IQ

Ringier Axel Springer Tech

Schneider Electric

BCG Gamma

Source: Digital Poland Foundation research

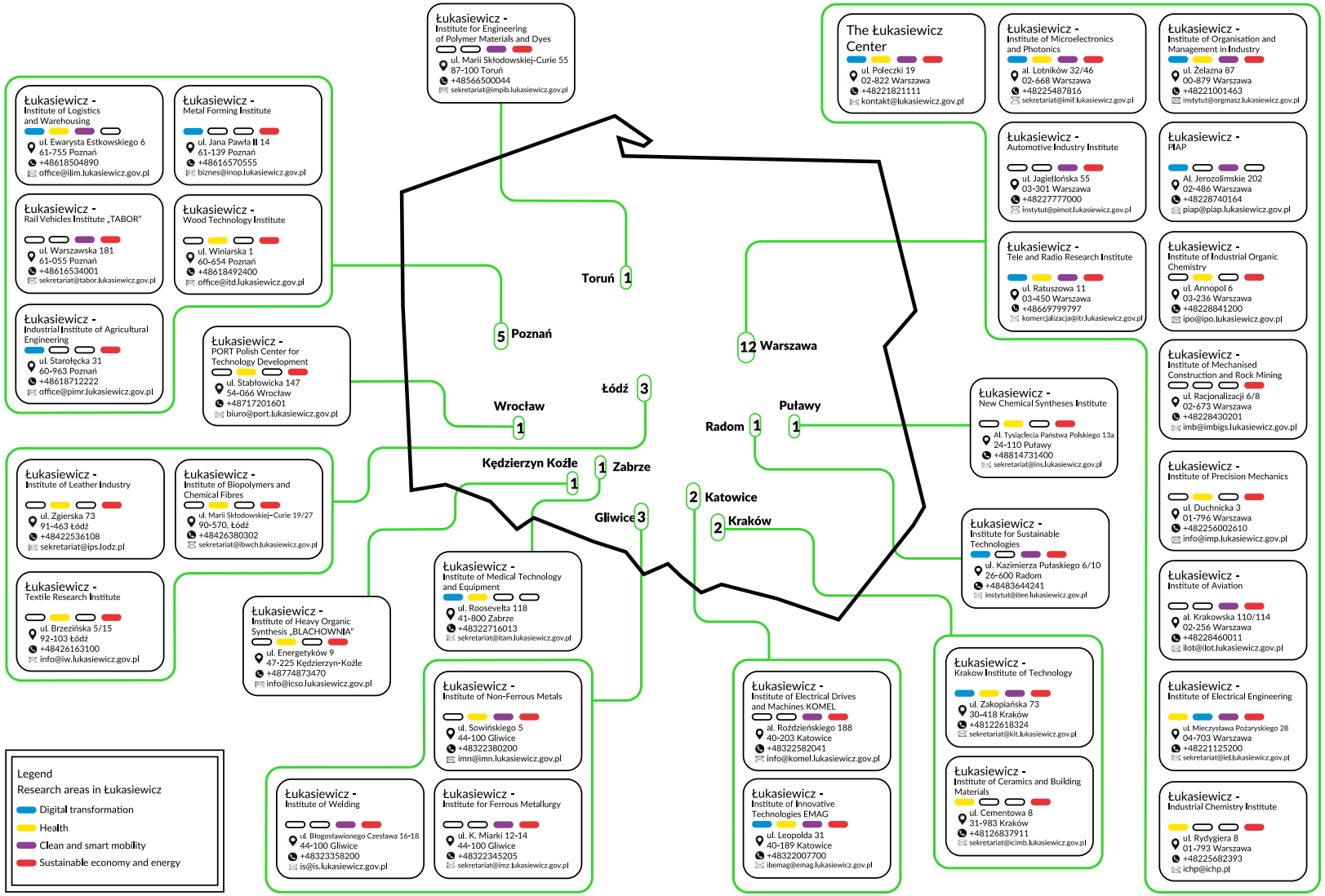
- **PLN 4,1 billion** | Gross domestic expenditure on ICT R&D representing 13,5% of the total R&D expenditures
  - PLN 315 mln | Basic research | 7,6% of the total
  - PLN 447 mln | Applied research | 10,8% of the total
  - PLN 3 373 mln | Development | 81,6% of the total
- **PLN 8,1 billion** | Gross domestic expenditure on Manufacturing R&D
- **820** | Number of entities in ICT R&D in Poland, representing 14% of the total number of R&D entities
- **2587** | Number of entities in Manufacturing R&D in Poland, representing 44% of the total number of R&D entities
- **33 425** | Total employment in ICT R&D in 2019, representing 12.3% of total R&D employment in Poland, including
  - 27 976 | internal R&D employees
  - 5 449 | external R&D employees
- **90%** | ICT R&D personnel with tertiary educational
- **16,7%** | Share of women in total employment in ICT R&D

Source: GUS (2019 data, published at the end of 2020)

Łukasiewicz

- **3rd in Europe** | The Łukasiewicz Research Network is the 3rd largest research network in Europe and it's part of the Polish National Innovation System. The network was launched on 1 April 2019 and support a long-term mission to ensure the Poland's economy is based on new technology and innovation.
- **32 institutes in 12 cities and 50 locations** | The network of institutes is located throughout the country | 9 voivodeships, 56% of institutes in Mazowieckie voivodeship.
- **400 laboratories** | Modern R&D network with 400 labs across the country.
- **7 000 employees** | 7000 specialists, including 4500 scientists.
- **3762** | Top class research infrastructure with 3762 modern R&D equipment.
- **PLN 7,2 bln** | Total amount of the research project budgets under implementation, including PLN 1,8 bln project budgets held by Łukasiewicz institutes.
- **PLN 1,4 bln** | Total amount revenues in 2020.
- **1585** | Number of projects under implementation in 2020 of which 38.9% were technology projects, 23.9% products, 16.3% services and 20.9% other.
- **Solution in 15 days** | During this phase detailed analyses are conducted, resources are identified and research goals are defined. Łukasiewicz Challenges makes it possible to complete this phase in 15 business days.

Source: Lukasiewicz Research Network



Source: Lukasiewicz Research Network

- **A nationwide network of leading academic R&D centers**. One stop shop offering investors full advisory services within R&D areas
- **79+** | Universities, Institutes, science parks, Polish Academy of Science (PAN)
  - 20 Universities
  - 20 Technical Universities
  - 8 Medical Universities
  - 7 Scientific Institutes
  - 5 Agricultural Universities
  - 5 Economic Universities
  - 5 Unpublic Universities
  - 5 Institutes of the Polish Academy of Science
  - 3 Vocational colleges

PACTT warsaw genomics

- **Inventions** | Our spin-off, Warsaw Genomics from the field of pharmacy and biotechnology. Successfully works on a genetic vaccine against cancer. Currently has earned over 1 billion USD, from sale of licenses to BioNTech and further sale of a sublicense to Sanofi (2015), Genentech / Roche (2016) and Pfizer (2018).

PACTT Pfizer Academy

- **Education** | Together with Pfizer, PACTT organises an interdisciplinary educational Academy to support the development of innovation for the Polish science. The programme is conducted by TOP 44 lecturers from around the world. Today, 19 class cycles, 200 registered and 55 trained participants took part

Source: pactt.pl

Access to Polish science
Representation of the best national R&D centers

R&D information
Latest information about Polish science and technology

Extensive ecosystem
Present throughout the country

R&D infrastructure
Modern laboratory and equipment

Access to expertise
Over 70,000 scientists

Rich experience
Years of successful technology transfer and commercialization

Know-how
Over 23,000 patents and patent applications

digitalpoland

Polish Investment & Trade Agency
PFR Group

PSC
Porozumienie Spółek Celowych

- The **Polish Association of University Knowledge Transfer Companies** (PSC) was established on January 8, 2014 between the SPVs of Polish universities and research institutes.
- The **Association is a forum for cooperation of 27 university special purpose vehicles**, established to commercialize scientific research results from universities and research institutes and carry out applied research commissioned by enterprises.
- Special purpose vehicles of universities and research institutes are vehicles supporting the creation of spin-off companies. SPVs cooperate with investors, business angels, and innovative entities ready to implement science-based technologies.
- **PSC in numbers**
  - **1947** | Number of completed research & development and consulting projects:
  - **1372** | Number of companies and administration units for which projects were conducted
  - **185** | Number of spin-off companies established by PSC Members
  - **EUR 16 milion** | Funds obtained from investors by established spin-off companies
  - **EUR 32 million** | Funds received from research grants by established spin-off companies

Source: psc.edu.pl

Innovation Night in nutshell

- **Poland's biggest educational event showing Innovations from behind the scenes**
- **25+ cities | 400+ events | 150+ partners**
- Innovation Night is **organised by Digital Poland Foundation** and co-organised by companies, R&D centres, innovation centres, research institutes, institutions e.g. libraries, universities, technology parks, which **open their doors to the public**
- During Innovation Night institutions and companies present innovative places in Poland and **popularize domestic achievements in science and new technologies**, thus promoting innovations in Poland
- Through this initiative, the **partners educate the public about the creation and use of new technologies**, share knowledge and dispel myths prevalent in social media, e.g. about vaccines or 5G networks, presenting solid scientific facts, thus promoting STEM education
- Innovation Night is organised every year during the Digital Festival

Learn more about Digital Festival and Innovation Night

Kiejstut Żagun

Partner, Head of Innovation, Grants & Incentives at KPMG in Poland

The R&D allowance is an effective way to stimulate innovation, as more than a third of those surveyed in 2018 admitted that the instrument inspired them to do R&D. It is also positive that the majority of companies surveyed plan to increase their R&D spending over the next few years. R&D expenditures in Poland are steadily increasing, which has resulted in the ratio of R&D expenditures to GDP for Poland already being higher than the average for the CEE region.

The government is not saying the last word and it's introducing further facilities in this regard. Apart from changes in the scope of application of reliefs already functioning in the Polish tax law - the R&D relief and the IP Box relief - it is planned to introduce three new instruments: the prototype relief, the relief for employing innovative employees and the relief for robotisation.

The Grants & Incentives Team at KPMG in Poland provides dedicated services for entities interested in obtaining state aid for their business. With KPMG's comprehensive approach to Clients' business, high standards of our services, professional experience, knowledge and experience of the Grants & Incentives Team, our Clients can take advantage of the development opportunities and respond to the risks associated with doing business.

KPMG offers its support at all stages in obtaining tax reliefs and subsidies from EU and national funds

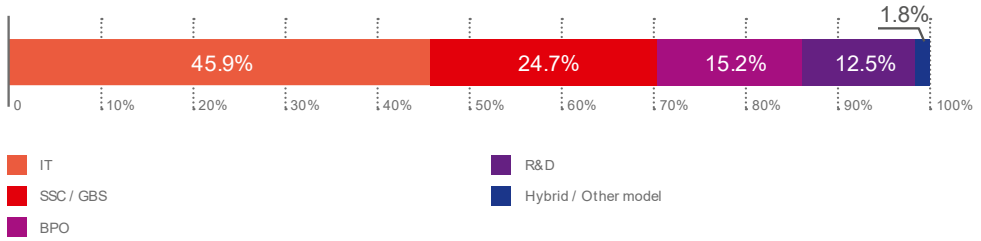
- R&D tax relief
- IP BOX: Support for innovation
- Polish Investment Zone: KPMG support
- Assisting in obtaining financial support from EU funds and the state budget
- Reviewing development plans and its optimization for available sources of support
- Settlement of the investment covered by the "decision on support"

5.2. Business Service Sector (BSS)

- **1,602** | The number of business service centres in Poland (Business Process Outsourcing, Shared Services Centre, Global Business Services, IT and R&D)
- **355,300** | Total number of jobs in business services centres. 290,300 of which in foreign centres (82%) and 65,000 in Polish centres (18%)
- **5.6%** | The share of the sector in overall business sector employment in Poland (5.2% in 2020)
- **3.9%** | Growth in the number of jobs at business services centres in Poland in the last year (Q1 2020 – Q1 2021). Since Q1 2016, the overall number of jobs has increased by 66%.
- **57** | The number of cities in Poland where centres are located
- **17** | The number of cities in Poland where centres employ more than 1,000 people
- **7** | The number of locations where business services centres employ more than 10,000 people
- **65** | The number of business services centres with at least 1,000 employees
- **82.1k** | The number of people in the sector's largest city – Kraków
- **312** | The number of centres in the most popular location - Warsaw
- **13.7%** | Share of foreigners in total employment. The number of foreigners employed at services centres nationwide is at least 48,000. Citizens of Ukraine, Italy, Spain, India, Russia accounts for 51% of foreigners
- **93.5%** | The share of business services centres employing foreigners
- **47.5%** | The share of centres where at least 10.0% of the employees are foreigners.

Source: ABSL, Business Service Sector in Poland 2021

Breakdown of centres by type

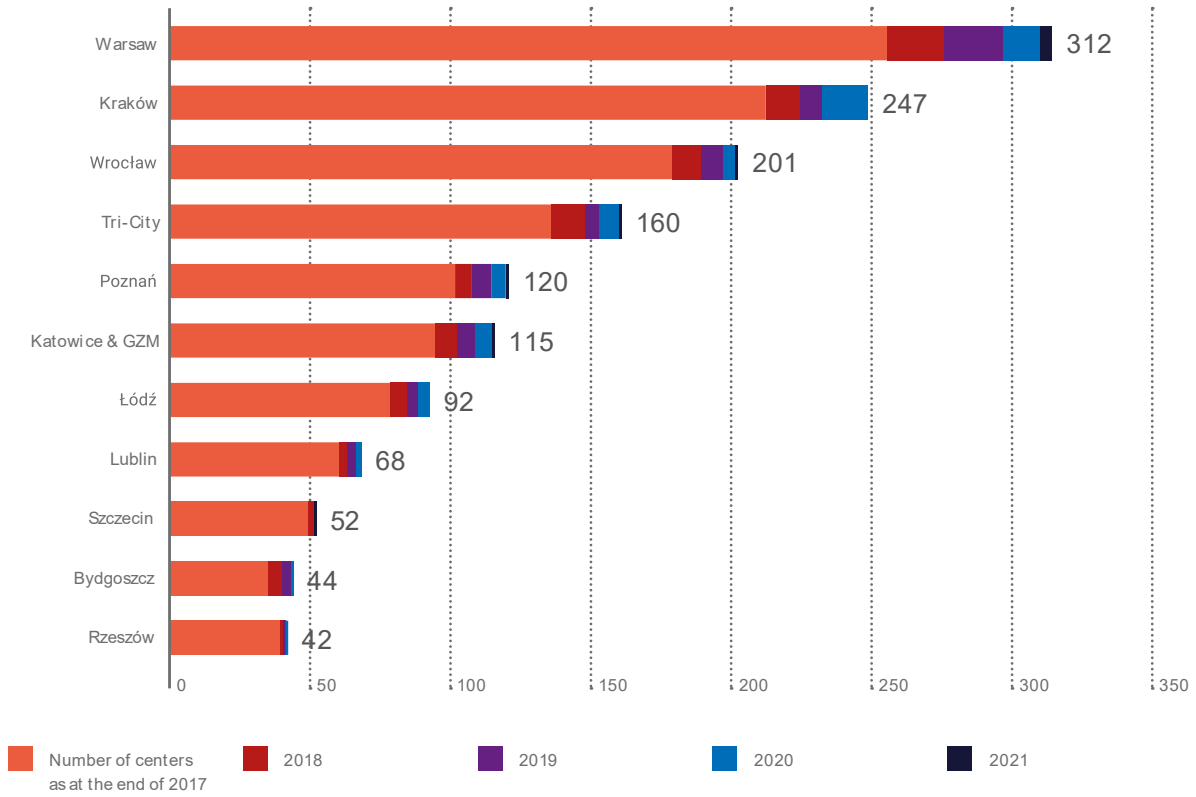


Employment in centres by type

	Employment in Q1 2021	
	Headcount	%
SSC / GBS	129,141	36.3
IT	110,133	31.0
BPO	61,251	17.2
R&D	40,992	11.5
Hybrid / Other model	13,755	3.9
Overall	355,272	100.0

Source: ABSL, Business Service Sector in Poland 2021

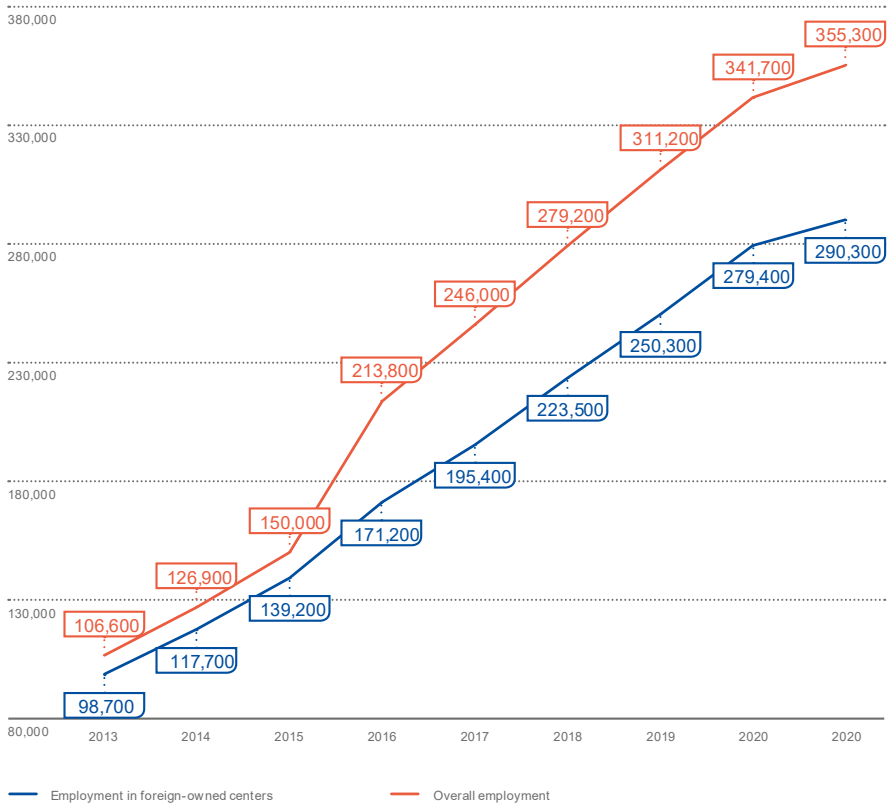
Number of centres in key locations (11 locations, representing 90% of the market)



- **USD 22.9 billion** | The estimated overall value of business services exports in 2020
- **USD 9.7 billion** | Poland's net trade balance in knowledge-intensive business services in 2020
- **Germany, UK, Switzerland & USA** | Export destinations with a value exceeding 2 USD billion in 2019
- **20.6%** | CAGR for overall exports of business services in the years 2005-2020 (CAGR for imports 13.6%)
- **10.2%** | The estimated increase in the value of exports of business services in 2020
- **34%** | The share of the business service sector in Polish exports of services in 2020 (6.9% of total exports including the manufacturing sector)
- **67%** | This percentage of centres belongs to foreign investors (1078)
- **41** | The number of countries of origin of centres operating in Poland
- **1,045** | The number of investor companies with business services centres in Poland (73% of which are foreign investors)
- **24** | The largest number of business services centres owned by a single investor in Poland
- **100** | Fortune Global 500 investors operating in the business services sector in Poland
- **100,000+** | Employment in centres owned by American investors

Source: ABSL, Business Service Sector in Poland 2021

Employment in centres and centres in the hands of foreign investors



Source: ABSL, Business Service Sector in Poland 2021

Top 10 investors by the number of employees in business service centres in Poland

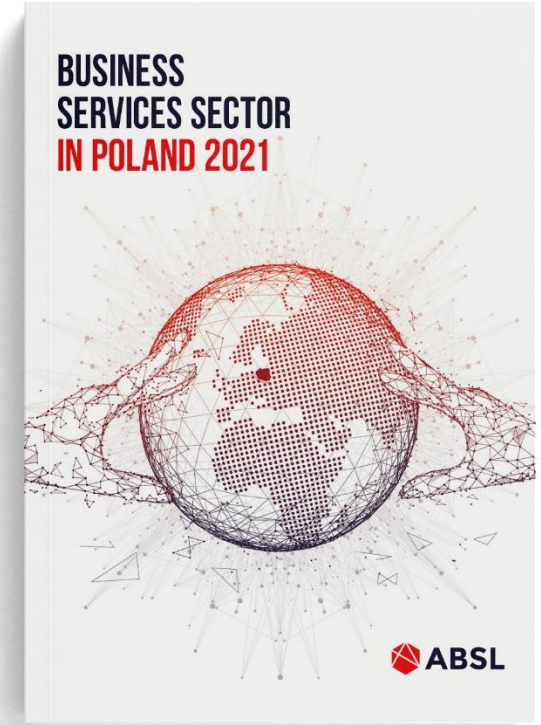
Investor	Parent company's headquarters' location	Number of employees at centers
Capgemini		9,000-10,000
IBM		7,000-8,000
State Street		6,000-7,000
Nokia		6,000-7,000
Credit Suisse		5,000-6,000
Comarch		5,000-6,000
Atos		5,000-6,000
Sii		5,000-6,000
Citigroup		5,000-6,000
UBS		5,000-6,000

1

Business Service Sector in Poland 2021 Report

The report was prepared by the Association of Business Service Leaders (ABSL)in cooperation with The Adecco Group, Colliers and Mercer. The honorary patron of the publication Business Services in Poland 2021" is The Polish Investment and Trade Agency. Our substantive partner in the publication “Business Services Sector in Poland 2021” within the scope of preparing data on the academic and higher education sector is the National Information Processing Institute – National Research Institute.

Click here to download



2

Pro Progressio reports

Pro Progressio reports are a reliable and objective data analysis presenting the current situation on the Business Support Services market. Pro Progressio conducts research, publish reports, benchmarks and infographics presenting current information on industries related to the Business Support Services industry. Pro Progressio prepares reports on the basis of current analysis of the situation in the services industry, and also at the request of private and public entities. Pro Progressio uses the experience and knowledge of experts in the fields of outsourcing, consulting, HR, Real Estate and many others.

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3

Other ABSL reports

The report was prepared by the Association of Business Service Leaders (ABSL)in cooperation with The Adecco Group, Colliers and Mercer. The honorary patron of the publication Business Services in Poland 2021" is The Polish Investment and Trade Agency. Our substantive partner in the publication “Business Services Sector in Poland 2021” within the scope of preparing data on the academic and higher education sector is the National Information Processing Institute – National Research Institute.

Click to visit reports page

Wiktor Doktór

CEO | Pro Progressio

Poland has been attracting R&D investments for at least two decades. Companies operating in Poland from industries such as the automotive industry, electronics, but also shared service centers and companies from the business process outsourcing industry, more and more often decide to launch research and development departments or the so-called Centers of Excellence.

The main factors attracting foreign investors to Poland are excellent education and multilingualism of the staff. In every voivodeship city, but also in many smaller regional cities, there are technical schools and technical universities, which makes the availability of staff employed in R&D centers one of the highest in the CEE region.

The first decade of the 21st century was mainly the location of R&D in the largest Polish cities, but the following years resulted in the development of research and development centers in other cities and agglomerations. A good example here are the Silesian and Tri-City agglomerations.

R&D centers very often accompany other activities of companies doing business in Poland. As a rule, these are activities in the area of IT, GBS and BPO.

Pro Progressio

Pro Progressio

We aim to be the most comprehensive and innovative institution supporting business. We are an organization focused on the development of the Business Support Services (BSS) sector. As part of our main activity, we run the Pro Progressio Club, which networks companies that are market leaders in this sector and its environment, we run professional industry media, publish investment reports and organize business events. We work with the best business organizations from around the world, thus ensuring the best access to knowledge sharing and services at the highest level

Want to learn more? | Visit proprogressio.pl/en

6. Real Estate

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CBRE GHELAMCO

Key takeaways

- Office market in Poland is growing rapidly, both in terms of supply and demand, strengthening its position as the top CEE destination
- The office market is de-centralized with eight large cities all developing significantly
- Many profound international businesses choose Poland for their EMEA/ CEE headquarters or Busines services sector centres

Poland as a core BSS Sector location worldwide

Poland is among the top countries for the BSS sector and the pandemic is only seen as a factor that will strengthen the country's position. Why?

- The most significant BSS location across CEE with 1602 centres employing 355,300 specialists (ABSL, 2021)
- 1,2 m students across the country and 3,4 m graduates
- Forecasted annual 15-17 billion USD FDI – raked 6th in Europe (Oxford Economics)
- Tholons Global Innovations Country Index – ranked 14th worldwide (Tholons)
- Forecasted 5.0% GDP growth in 2021

Largest international office occupiers across the regional cities

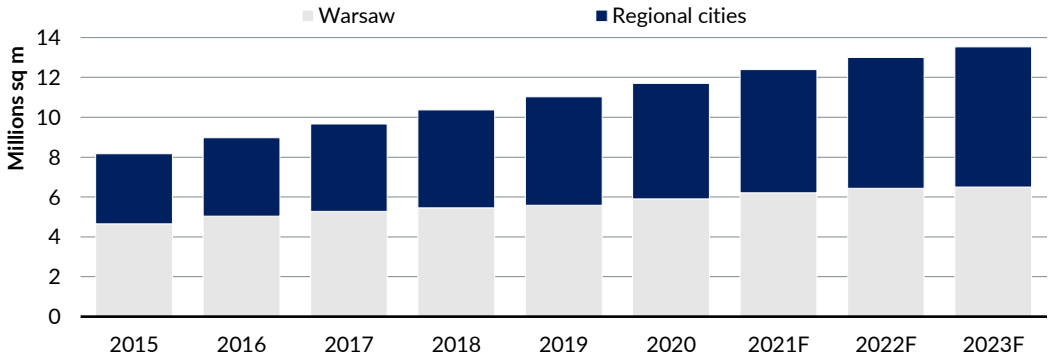
CITY	COMPANY
Krakow	ABB
Katowice	Rockwell Automation
Krakow	UBS
Tri-city, Krakow	State Street
Lodz	Fujitsu Technology Solutions
Wroclaw	3M Service Centre
Wroclaw	UBS
Krakow	IBM
Tricity	Nordea
Wroclaw	Nokia

The office market in numbers

The development of office market in Poland started in 1990 and it currently offers over 12 million sq m of modern office located among 9 largest cities. Warsaw, the capital, remains the first choice for many businesses and investors alike, however the country's strength lays in offering eight large urban centres (with population above 300,000).

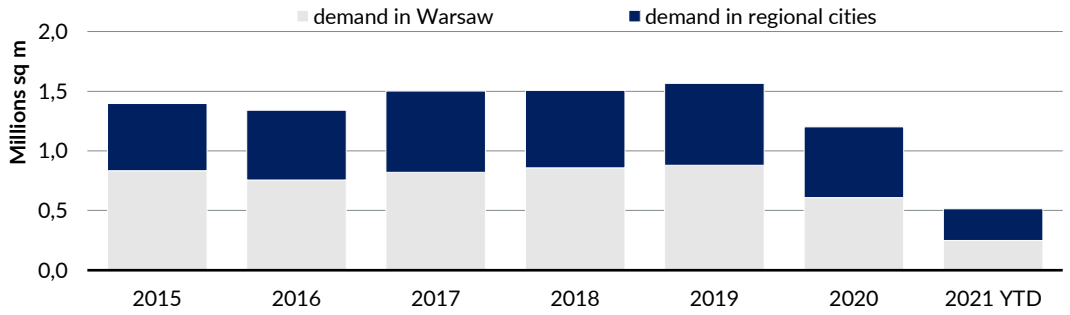
The supply still grows – with over 1,3 m sq m under construction across the country, the office supply will increase by 16% by the end of 2023

Office supply in Poland



Office demand in Poland

Demand for offices across the country has been high and trending upward in recent years with the record 1,56 m sq m let throughout 2019. The economic downturn in 2020 has only reduced demand by 23% nationwide and the return on a growth path shall be observed in 2022.



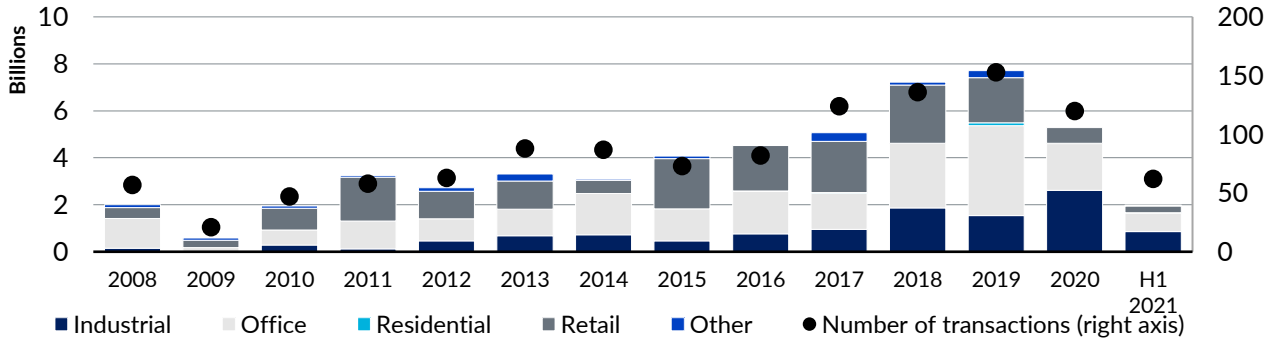
During the pandemic period prime headline rents stayed relatively stable. However, there has been an increase in incentives for tenants observed, resulting effective rents decline. Tenant incentives package in Poland gives an average 16% discount to the headline rents.

Rental levels achieved in Poland

	WARSAW CENTRAL	WARSAW NON-CENTRAL	KRAKOW	OTHER REGIONAL CITIES
Prime headline rents (EUR/sqm/month)	24.50	16.00	15.00	12.50 – 15.50
Incentives package (%)	15%	13%	18%	15 – 20%

Investment volume

Office remains – next to I&L sector – the main investment focus in Poland. Just before the pandemic, the investment volume in Poland hit the record volume of EUR 7,7 billion and it is forecasted to remain comparably high once the dust settles. The majority of investment capital comes from Europe (Germany, UK, France, Nordics), but also USA and Africa. Asian investors are also widely present across the country. Prime office yields reach 4.60%.



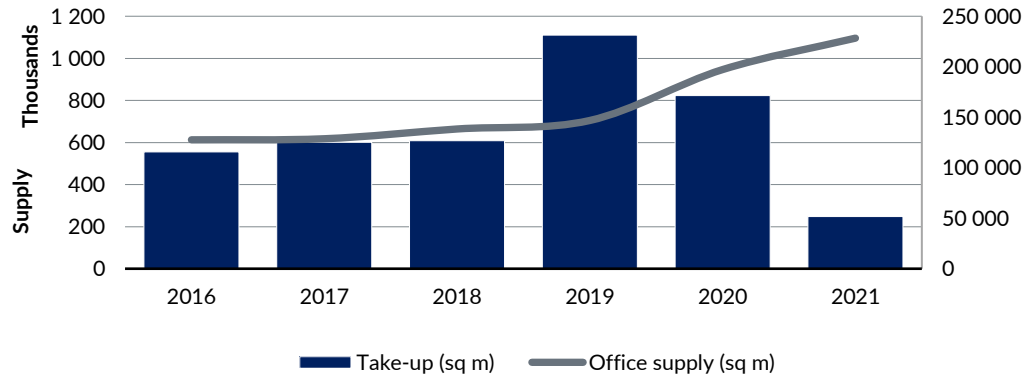
Focus on Rondo Daszynskiego | Warsaw

Office remains – next to I&L sector – the main investment focus in Poland. Rondo Daszynskiego – the fastest developing office location in Warsaw grew by 117% since 2015, when the second metro line opened here, enabling access to the city centre within only few minutes. Today, ca. 1,1m sq m of office area create opportunities that attracted many international players to the market. The location, perceived as the extension of CBD is home to financial services and IT companies such as (among others):

Top tech and financial companies located around Rondo Daszyńskiego

Citi	Samsung
Google	Huuuge Games
BNP Paribas Securities Services	Daftcode
Allfunds Bank	Huawei
Standard Chartered	Equinix
SEB	Microstrategy
Warta	Mastercard

Rondo Daszyńskiego evolution



Łukasz Kałędkiewicz

Head of A&T Services,
CBRE Poland

Office market in Poland reaches maturity and has a lot to offer. Highly qualified workforce, A-class office building and fast-developing enterprise sector with ESG high on the agenda put Poland on the radar of many international businesses.

Jeroen van der Toolen

Managing Director, Central & Eastern Europe,
Ghelamco

Poland is experiencing a digital transformation. As a real estate company, we also move in this direction and that is naturally why we are digitalising our buildings. We have developed Signal OS - the first operating system for office buildings. What is unique in Poland is that people here love all technological innovations: from contactless payments to digital access to homes and offices.

7. Human Capital

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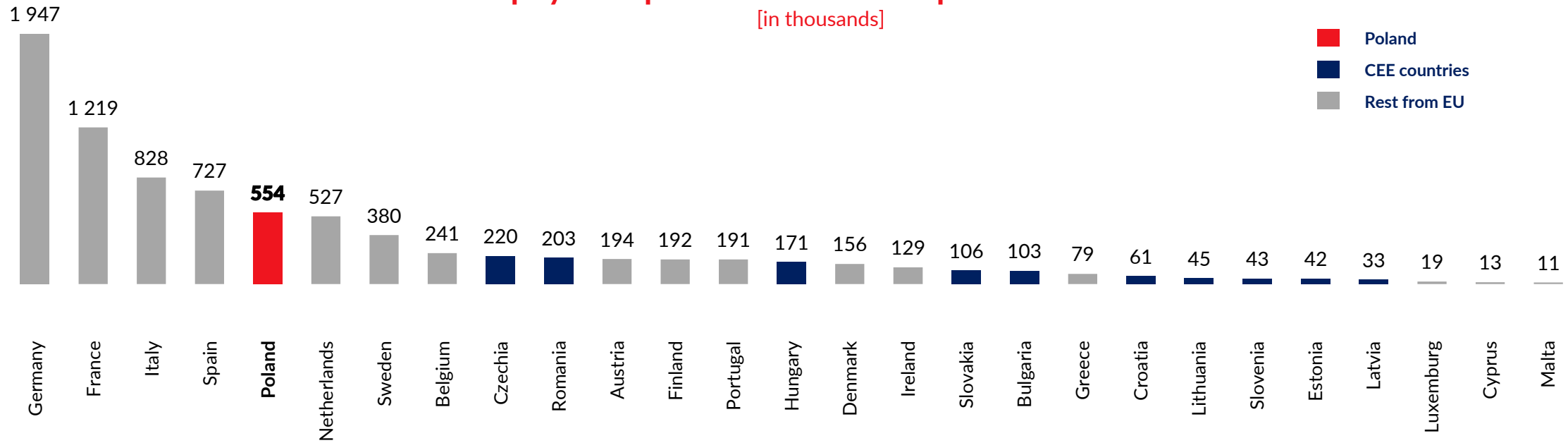
- **554,000** | Number of ICT employees in Poland in 2020, including 400,000 IT employees
- **1st in CEE region and 5th place in EU** | Huge pool of ICT specialist. Polish ICT community accounts for nearly 36% of the entire ICT population in the CEE region.
- **3,4%** | Employment in the ICT sector represents 3.4% of total employment in Poland
- **29% of ICT employees work in Warsaw** | Only 29% of ICT employees work in Warsaw, while in other capitals this percentage is much higher. For Latvia it is 93%, and for Ukraine 43%.
- **1st in competitiveness** | Poland was ranked as the most competitive IT location of all 23 countries of CEE region
- **3rd in human capital ranking** | Poland's place in the human capital talent ranking among 23 maturing economies in Europe
- **3rd in English language proficiency** | Poland's place in the English language proficiency ranking among 23 maturing economies in Europe
- **16th in English language skills** | Poland's place among 100 countries in terms of English language skills

Source: Eurostat, Emerging Europe, 2021, The Future of IT: IT Landscape Report, EF English Proficiency Index, 2021, Global Ranking of Countries and Regions

Employed ICT professionals in the European Union in 2020

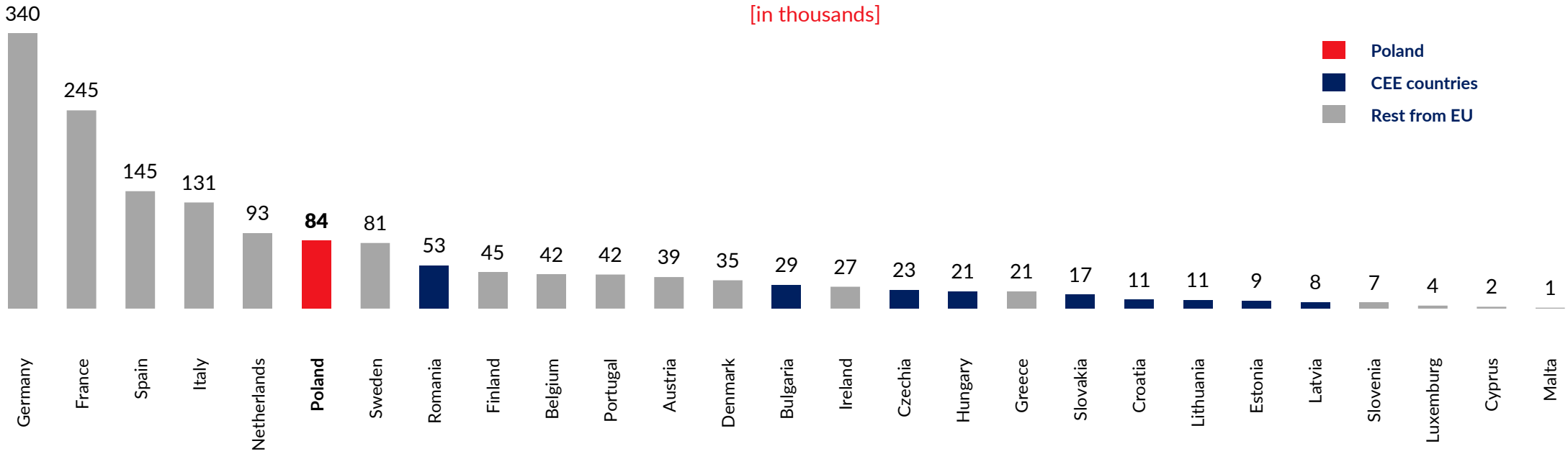
[in thousands]



Source: Eurostat, 2020

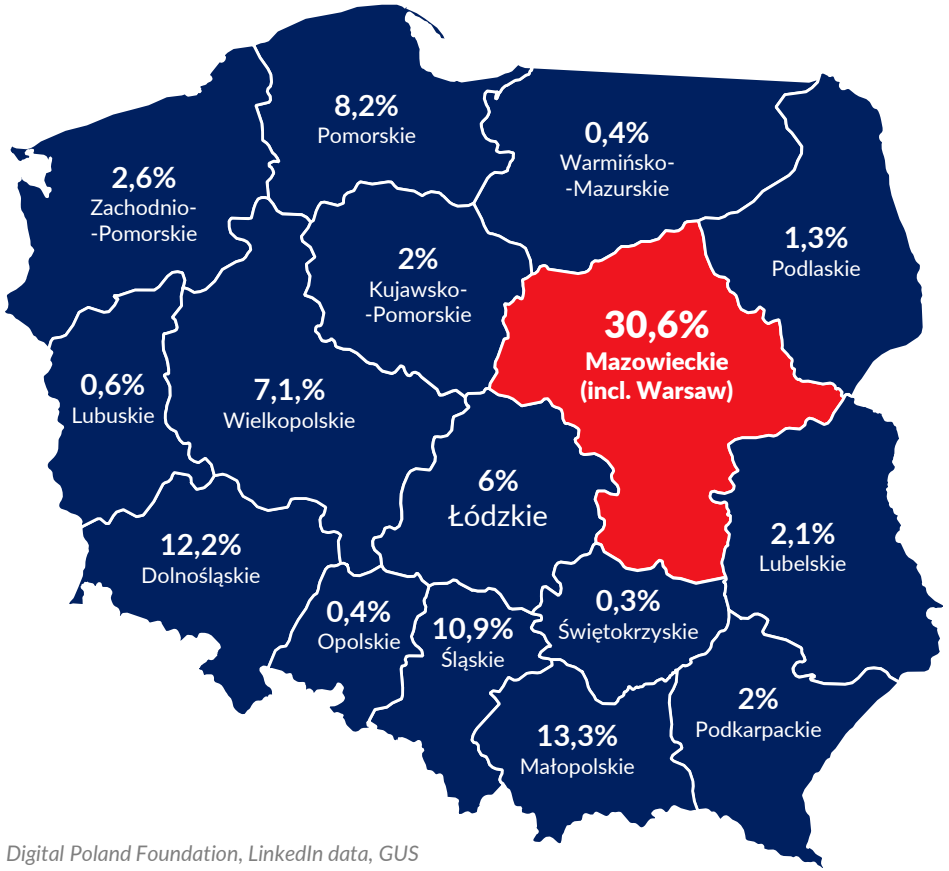
Women employed as ICT professionals in the European Union in 2020

[in thousands]



Source: Eurostat, 2020

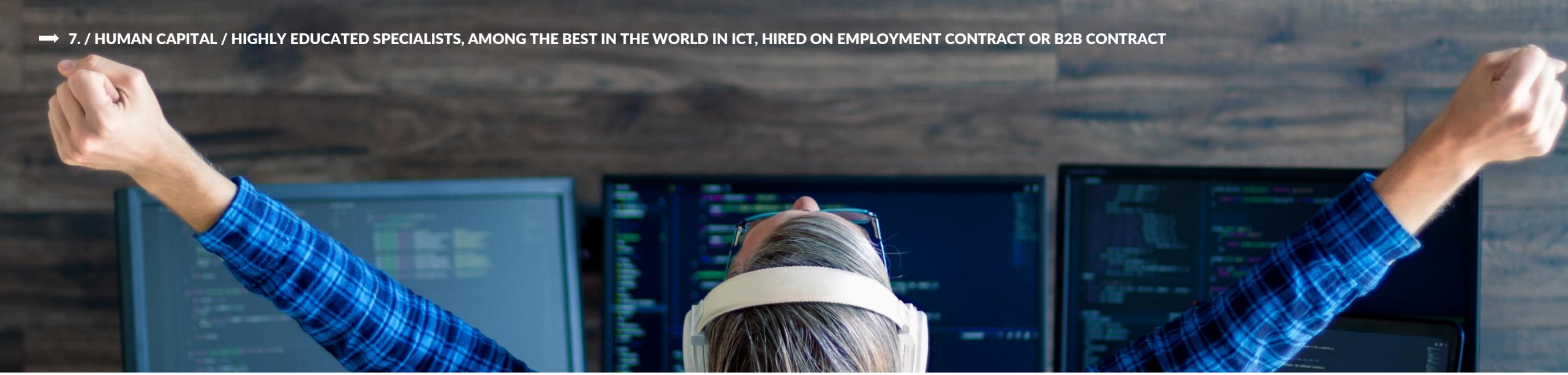
- **56% of ICT specialists are located in three regions**
  - Mazowieckie (incl. Warsaw) | 30,6%
  - Małopolskie (incl. Krakow) | 13,3%
  - Donośląskie (Wroclaw) | 12,2%
- **7 large software centres** (Warsaw, Krakow, Wroclaw, Katowice, Poznan, Gdansk and Lodz), each of which **employs over 10,000 ICT professionals**



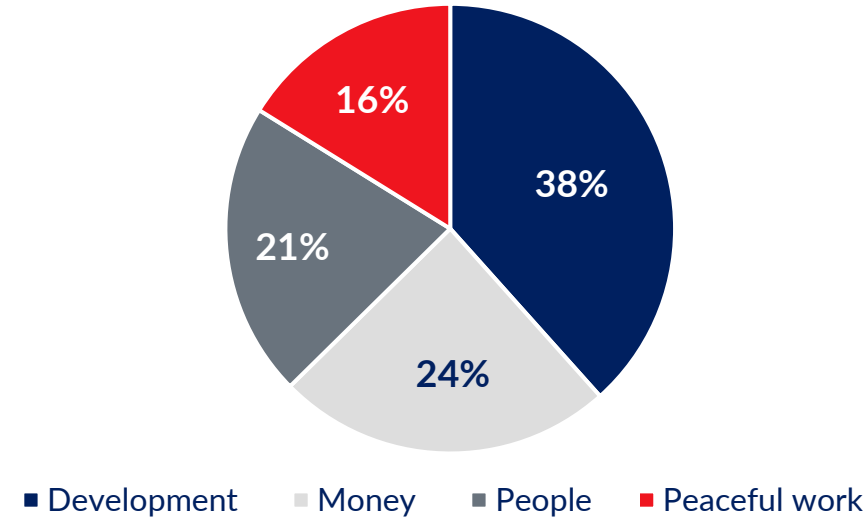
Source: Digital Poland Foundation, LinkedIn data, GUS

- **3rd** place in among the World's Most Hardworking Programmers
- **3rd** place in The Best Developers in The World ranking (SkillValue)
- **5th** place in the world in the TopCoder Country Ranking (as of Feb 2020)
- **The top-rated skill areas with the highest average scores of Polish developers: Java, Python, Ruby, Algorithms, Tutorials and Shell**
    - **1st** the best in Java programming (HackerRank)
    - **2nd** best in Algorithms and Python (HackerRank)
    - **3rd** place in overall ranking of best developers worldwide (HackerRank)
    - **4th** place in IT tutorials (HackerRank)
    - **4th** place in Shell (HackerRank)
    - **5th** place in Ruby (HackerRank)

Source: HackerRank, SkillValue, TopCoder, Digital Poland Foundation

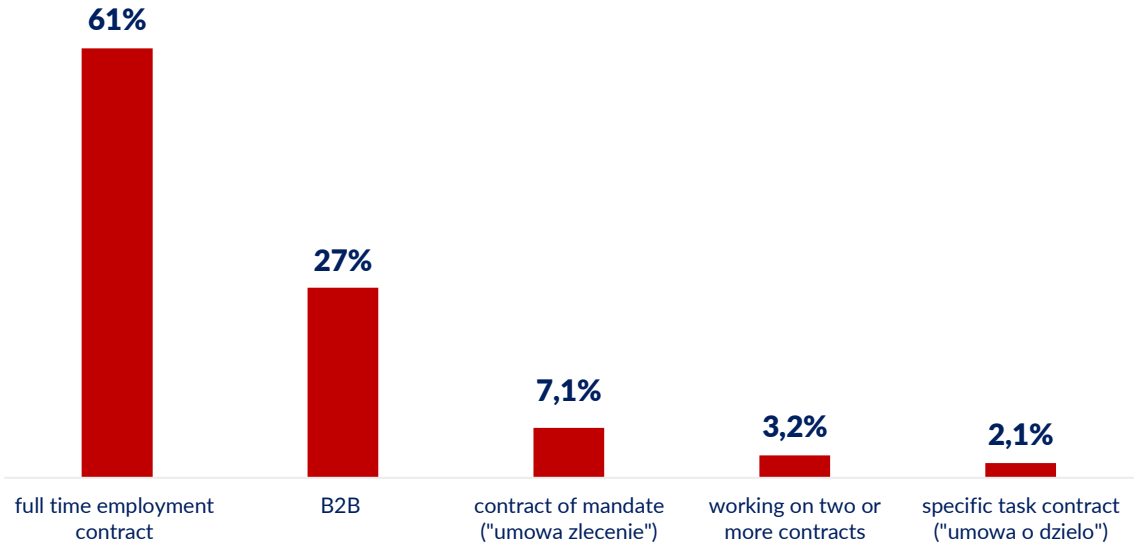


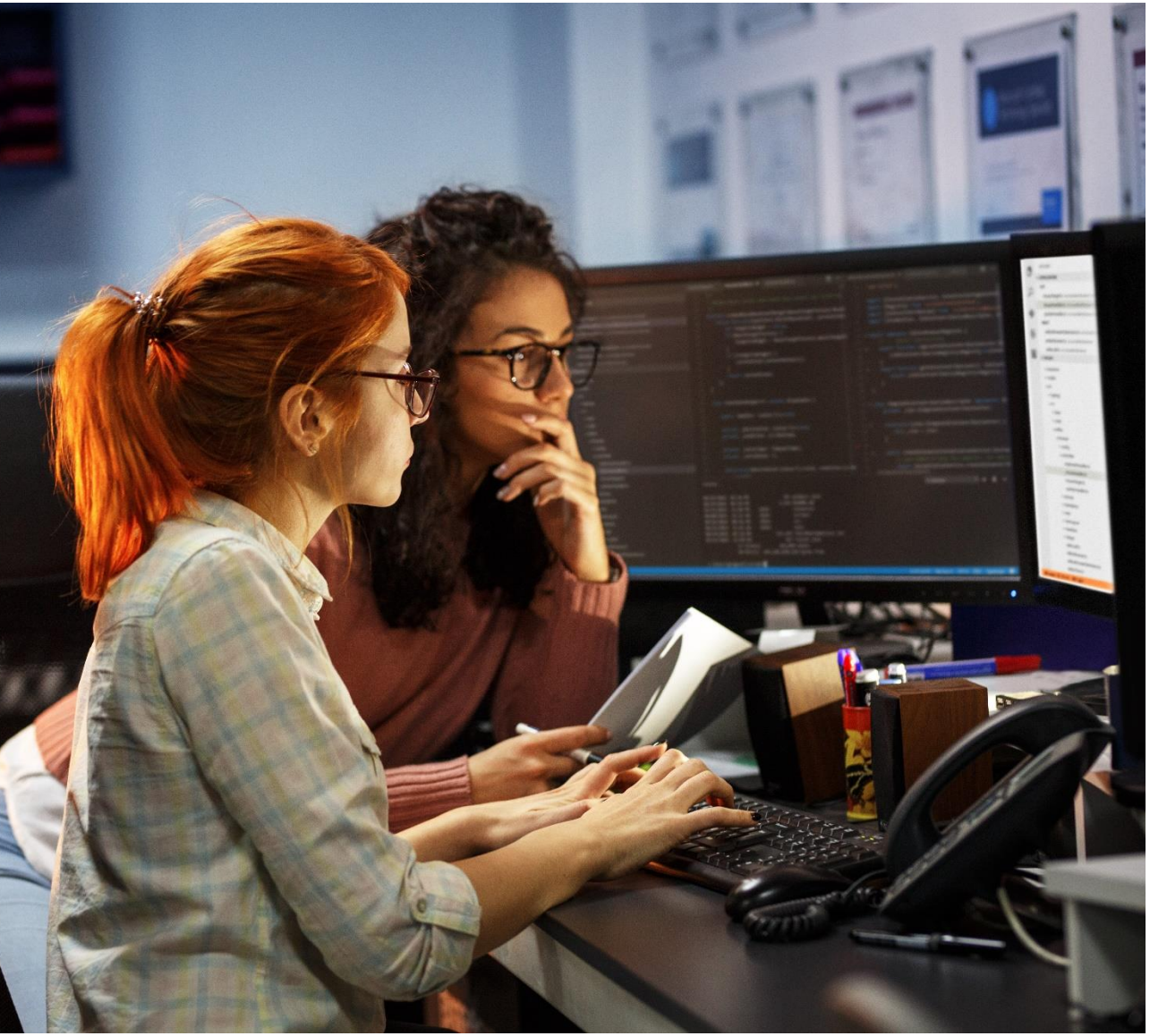
What motivates IT developers?



Source: Bulldogjob IT report 2020

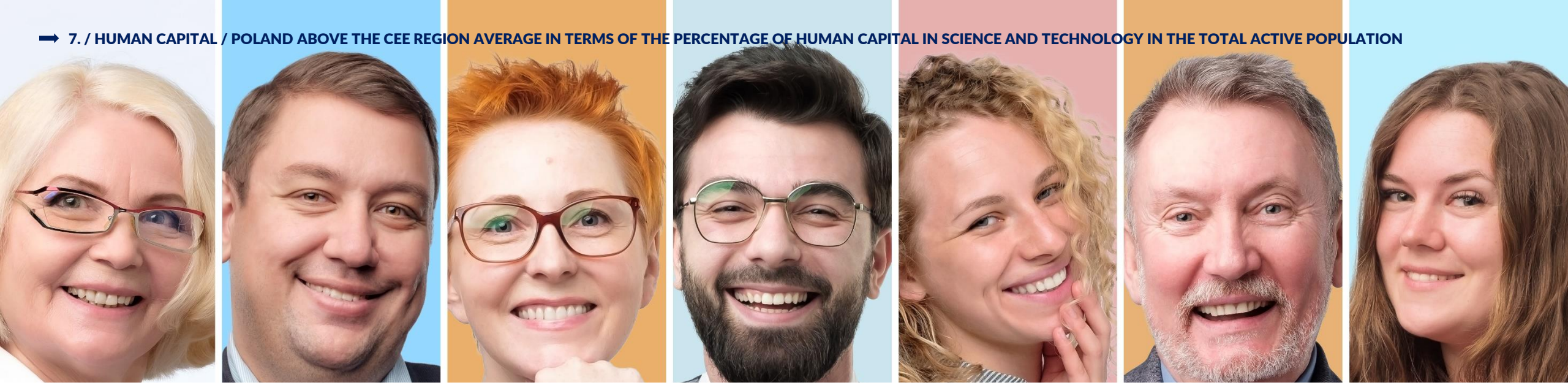
Types of employment contract



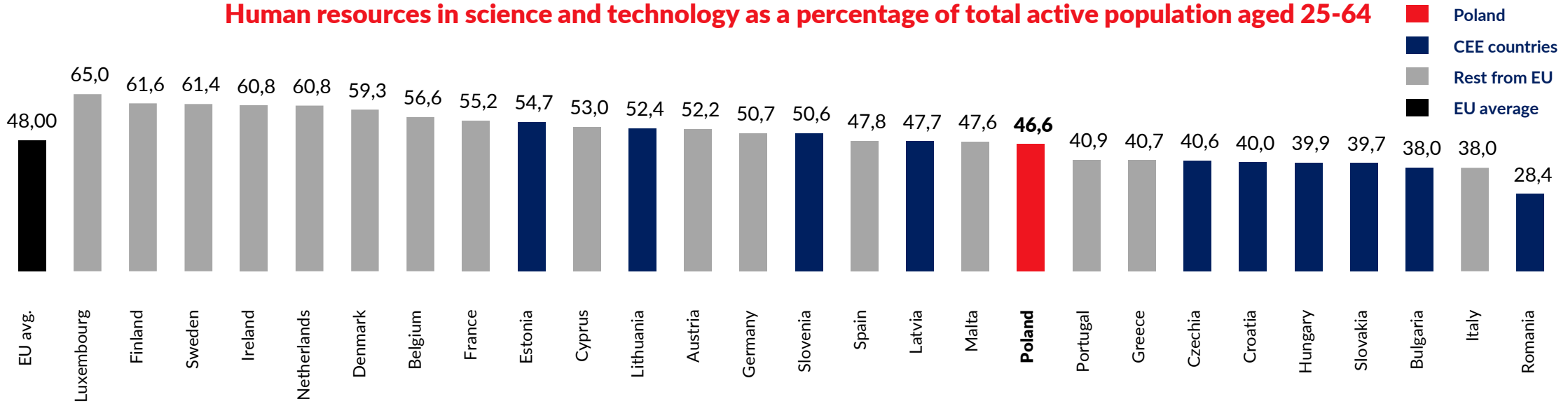


- **349 higher education institutions** across Poland (see chapter 8. for more details)
- Over **1.2 million students in higher education** institutions in 2020 (57.6% are female)
- Warsaw, the **Polish capital is the 2nd city in Europe** in terms of the **number of students with 235,000 people** (just after the Paris)
- Regions with the highest number of students: **Mazovia (247k+)**, Lesser Poland (142k+), Greater Poland (123k+)
- The number of **foreign students increased by 5.0%** between the 2018/19 and 2019/20 academic years and reached almost 82.2 thousand (over 6.8% of all students in Poland)
- **Students in doctoral programmes: 29,793** (16,484 are female) and in doctoral schools: 3,869 (1,912 are female)
- **25% of** students study **engineering related subjects**
- **Over 70% of Polish IT** specialists have a **technical university degree**, **8%** percentage points **above the EU average**
- Polish GUS data shows that in 2020, there will be **63.4 thousand people in IT-related studies**, including **9 thousand women**
- **33,000** people **willing to study IT** in Poland in 2020 - **IT majors are very popular at Polish universities**
- **17,400 ICT and data analytics graduates in 2020**
- Poland's **3rd place** at the **International IT Olympiad** in terms of medals won
- **6th place for Poland among OECD** countries in terms of **students' mathematical and language competencies**
- **5th place** for Poland among OECD countries in terms of **economic competence**
- Programme for international students assessments 2018 – reading literacy (10th place), science literacy (11th place), mathematics (10th place)

Source: GUS, Research in Poland, Digital Poland Foundation



Human resources in science and technology as a percentage of total active population aged 25-64



Source: Eurostat, Human resources in science and technology - having successfully completed an education at the third level or being employed in science and technology, 2020

Digital Festival

EDD European Digital Days

3rd edition | 01-10.10.2021
Every year | Same binary date

Huge number of people reached

Broad and multichannel promo campaign a.o. TV, radio, paper and digital press, DOOH & OOH, social media, display ads

- 13 mln people reached in nationwide media (tv, radio, press)
- 7 mln people reached social media
- 200+ partners
- 60+ engaged ambassadors and influencers
- 14 promo videos

Education Zone

Special space on festival website full of valuable resources about digital and new technologies

- 30+ podcasts
- 100+ educational articles
- 3 reports for professionals
- 2 guides to the digital world

SkillUp Academy

Free courses teaching digital skills and providing specific knowledge

- 85+ courses
- Modern Senior | course for 55+ year olds
- Year-long initiative

Innovation Night

Innovation centres, institution, universities and technology parks open their door to all visitors

- 20 cities
- 150+ events online/offline
- 2000+ participants

Digital Discounts

Special discounts on cashless shopping online

- 200+ special offers
- 180+ partners
- 10 days of reduced prices

Events

Wide variety of events taking place all over Poland within en days of Digital Festival, e.g.: meetups, conferences, debates.

- 150+ offline/online events
- Digital Ars Day

Initiatives

Year-long projects that overlap with Digital Festival

- Digital Ars | 2nd edition | the first contest in Poland for creating art with use of artificial intelligence (AI)
- European digital Days | 9 countries Summit in Zurich 10.10.2021
- Digital Fitness | 2nd edition 6000 people completed a digital skill test and assessed their digital knowledge

The biggest technological and educational event in Poland

Visit digitalfestival.pl to learn more. Contact us - info at digitalpoland.org

Marcin M. Dominiak

Head of Public Sector Enky Consulting

Polish professionals in science, technology, engineering and mathematics (STEM) have been among the world's leading scientists for centuries. Scientists such as Stefan Banach and Jan Czochralski remarkably changed the world forever, while Polish cryptologists cracked the most complicated Enigma ciphers. Today, science has become less romantic, and to develop groundbreaking inventions you need teams of many people and huge investments in research and development. Therefore, we hear about the successes of individual researchers less often, but when it comes to human resources, we should not have any complexes. This is evidenced not only by the huge number of medals won by students at the International IT Olympiad year after year, but also by the very high scores in competence rankings such as PISA. Poland leads among the developing countries of the continent, especially in the field of information technology, which is confirmed by numerous reports and analyses. Given the extraordinary ability of Poles to adapt to innovation and the dynamic development of the Polish economy, in the coming years we can expect an increase in the importance of Polish science in Europe and the world. Especially that labour costs are still very low compared to highly developed countries.

ENKY CONSULTING

Enky Consulting | We are consulting boutique specialising in innovation, modern management methods and advanced technologies.

Our mission is to increase the innovativeness of Polish enterprises and the public sector, education in the field of innovativeness and building long-lasting relations between science and business.

Behind all our activities lies a passion for innovation, thirst for knowledge and belief in the impact of technology on people and business.

Ecosystem of innovation

Enky Consulting is not only a team successfully implementing innovation projects. It is also a whole ecosystem of partners and experienced experts.

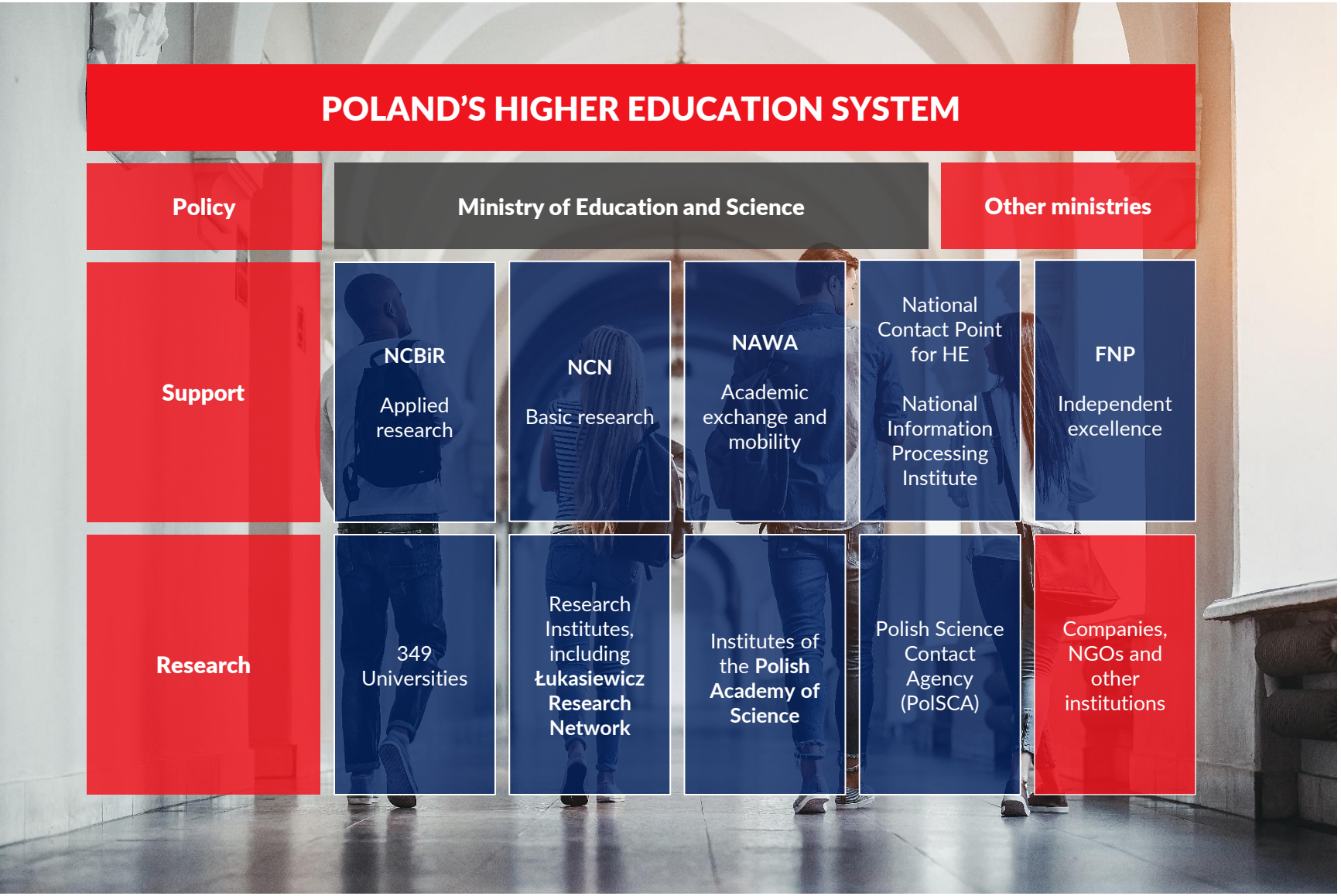
We work with start-ups, technology companies, universities. Among our experts there are world-class specialists in artificial intelligence, e-commerce, business process automation or industry 4.0.

Want to learn more? | Visit enkyconsulting.com/en

8. Science & Innovation

IN COOPERATION WITH

POLAND INNOVATIVE



THE MOST IMPORTANT POLISH INSTITUTIONS IN THE FIELD OF SCIENCE

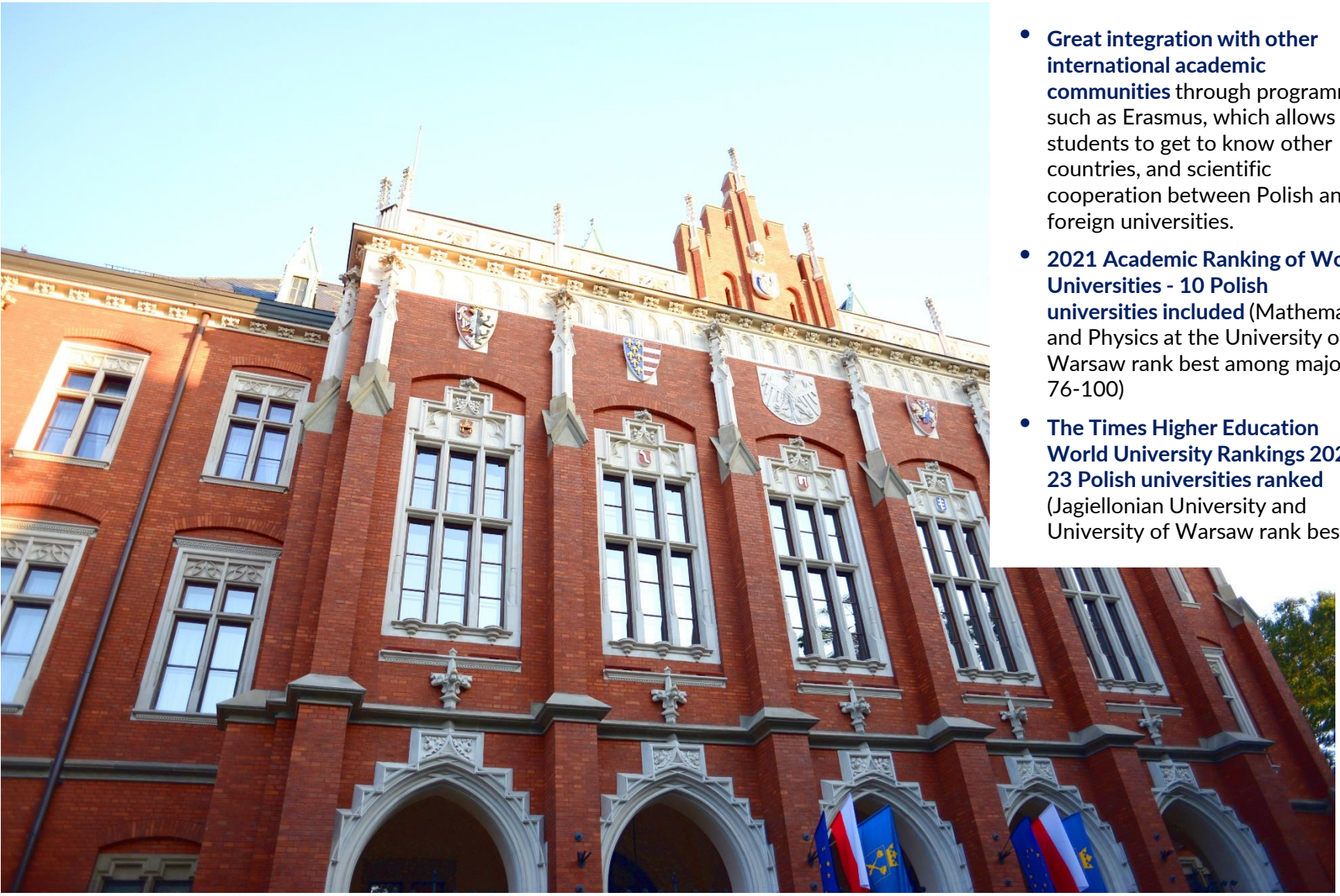
- Ministry of Education and Science
- The Conference of Rectors of Academic Schools in Poland (CRASP)
- The Polish Academy of Sciences
- Polish Science Contact Agency (PolSCA)
- Main Council of the Research Institutes (RGIB)
- The Łukasiewicz Research Network
- Polish Academy of Arts and Sciences
- Universities

RESEARCH INSTITUTES

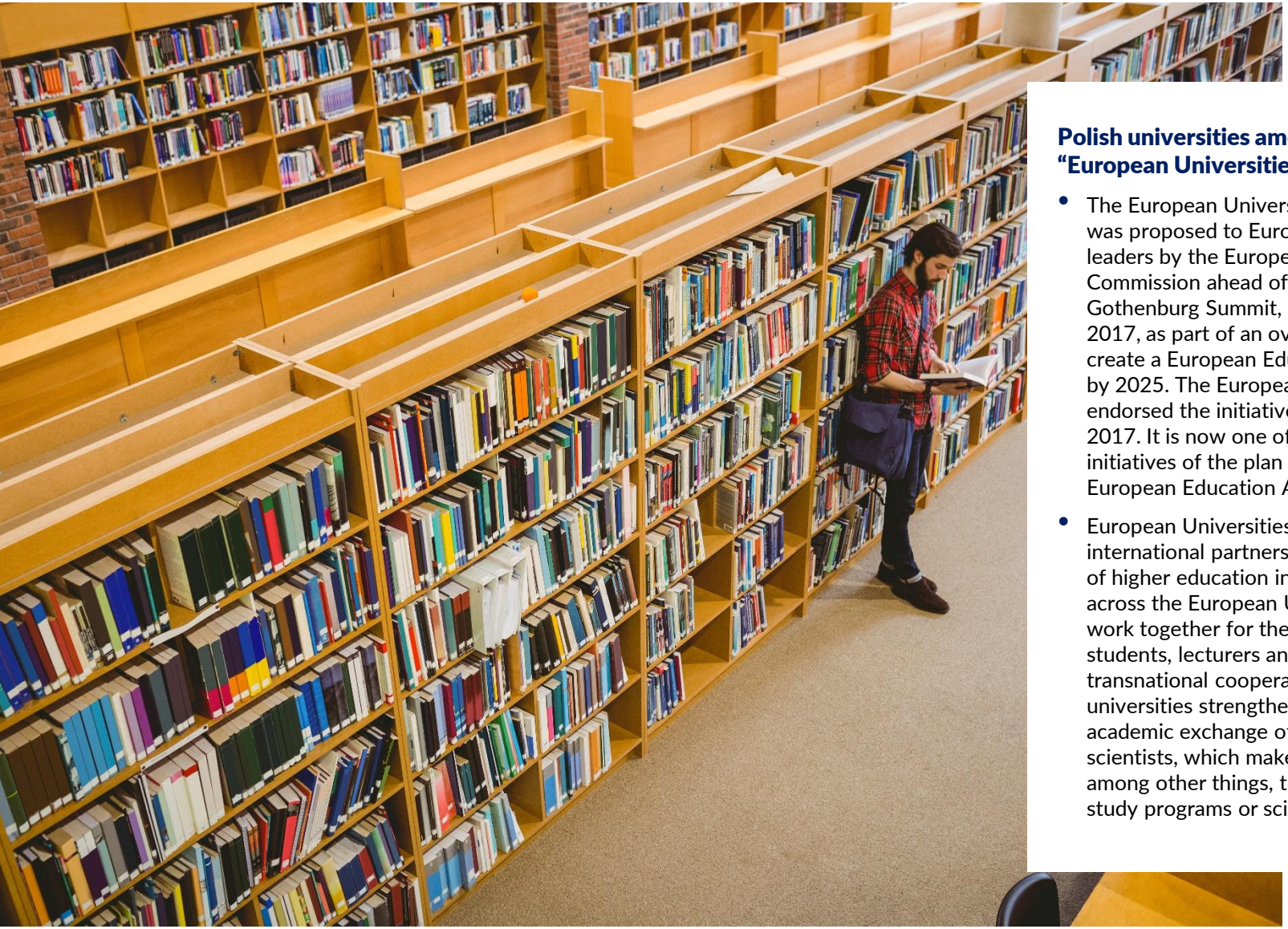
- Scientific institutes of the Polish Academy of Sciences (77),
- Research institutes (76),
- Łukasiewicz Research Network institutes (36),
- International research institutes (2),
- Other scientific institutions (54)

Source: Research in Poland, OPI PIB, Ministry of Education and Science

- **349 higher education institutions** across Poland
- **University hubs** are located in all large and many medium-size cities, **unlike in other CEE countries**, where there is usually one main university hub located in the capital region. This enables cooperation between academia and industry in every region
- **Biggest academic centres in Warsaw, Krakow and Wroclaw**. However other regions are not to be ignored – for instance the Adam Mickiewicz University in Poznan was in 2018 identified as one of the top 200 rising academic institutions by Nature
- The **Polish government continues to support cooperation between industry and academia**, listening to the needs of both sides
- The introduction in 2017 of an **implementation doctoral programme** that allows doctoral students to combine professional work with their thesis
- **Dual studies** were introduced which allow for entrepreneurs to tailor-make entire study profiles which will educate his future staff
- Higher education institutions are being restructured to fit into one of two categories: **academic or professional**. This allow for better funding and tuning of the teaching programs
- **25% of students study engineering related subjects**. Likely this will continue to grow as industry plays a key part in the Polish economy, and qualified engineering staff is always needed



- **Great integration with other international academic communities** through programmes such as Erasmus, which allows students to get to know other countries, and scientific cooperation between Polish and foreign universities.
- **2021 Academic Ranking of World Universities - 10 Polish universities included** (Mathematics and Physics at the University of Warsaw rank best among majors: 76-100)
- **The Times Higher Education World University Rankings 2022 - 23 Polish universities ranked** (Jagiellonian University and University of Warsaw rank best)
- **QS EECA University Rankings 2021 - 25 Polish universities** (Jagiellonian University – 6th, University of Warsaw – 7th)
- Polish ranking Perspectives 2021 – **best cities for science and education in Poland: Kraków, Warsaw, Poznan, Gdansk, Wroclaw, Lodz**
- **Programme for international students assessments 2018** – reading literacy (10th place), science literacy (11th place), mathematics (10th place)
- **Poland ranks 40th** among the 132 economies featured in the **Global Innovation Index 2021** (WIPO)



Source: Research in Poland

Polish universities among “European Universities”

- The European Universities Initiative was proposed to European Union leaders by the European Commission ahead of the Gothenburg Summit, in November 2017, as part of an overall vision to create a European Education Area by 2025. The European Council endorsed the initiative in December 2017. It is now one of the flagship initiatives of the plan to create a European Education Area.
- European Universities are international partnerships – alliances of higher education institutions from across the European Union that work together for the benefit of students, lecturers and society. This transnational cooperation of universities strengthens the academic exchange of students and scientists, which makes it possible, among other things, to conduct joint study programs or scientific projects.
- International university partnerships are intended to be the European universities of the future, supporting European values and identity. Participation in these partnerships is an opportunity to enhance the quality and competitiveness of European higher education.
- The universities within the network share a long-term strategy in the area of education, promotion of European values and strengthening the European identity.
- European Universities are selected through the European Universities Initiative competition organized by the European Commission. This initiative is funded by the Erasmus+ and Horizon 2020 programmes.
- Two calls for proposals have been announced so far: the 2019 call and the 2020 call

Polish universities among European Universities | Results of the first call 2019

- Jagiellonian University in Kraków, Name of alliance: UNA Europa (1EUROPE)
- University of Warsaw, Name of alliance: The 4EU+ Alliance (4EU+)
- Adam Mickiewicz University in Poznań, Name of alliance: European Partnership for an Innovative Campus Unifying Regions (EPICUR)
- University of Opole, Name of alliance: Fostering Outreach within European Regions, Transnational Higher Education and Mobility (FORTHEM)
- University of Gdansk, Name of alliance: The European University of the Seas (SEA-EU)
- Nicolas Copernicus University, Name of alliance: Young Universities for the Future of Europe (YUFE)
- European Commission press release here

Polish universities among European Universities | Results of the second call 2020

- Warsaw University of Technology, Name of alliance: European Universities of Technology Alliance (ENHANCE)
- Poznan University of Technology, Name of alliance: European University for Customised Education (EUNICE)
- Silesian University of Technology, Name of alliance: The European University Alliance on Responsible Consumption and Production (EURECA-PRO)
- University of Silesia in Katowice, Name of alliance: Transform4Europe – T4E: The European University for Knowledge Entrepreneurs (T4E)
- AGH University of Science and Technology, Name of alliance: European Space University of Earth and Humanity (UNIVERSEH)
- European Commission press release here

Source: Research in Poland

- **Over 1.2 million** students in higher education institutions in 2020 (**57.6%** are female)
- Regions with the highest number of students: Mazovia (**247k+**), Lesser Poland (**142k+**), Greater Poland (**123k+**)
- The number of foreign students **increased by 5.0%** between the 2018/19 and 2019/20 academic years and reached almost **82.2 thousand** (**over 6.8%** of all students in Poland)
- Students in doctoral programmes: 29,793 (16,484 are female) and in doctoral schools: 3,869 (1,912 are female)
- **93.1 thousand** academic teachers (**43.7 thousand are women**) and 13 students per one academic teacher
- **726 Polish scientists among the 2% most cited in science** as listed by Stanford University, Elsevier & SciTech Strategies

Most frequently chosen narrow fields of study

Field of study and percentage of the total number of students			
Business and Administration	18.1%	Engineering and Engineering Trades	9.7%
Health Sciences	10.9%	Education	6.4%
Social and Behavioural Sciences	9.7%	Languages	5.2%

Source: GUS (Statistics Poland), „Higher education and its finances in 2019" report Baas, J., Boyack, K., Ioannidis, J.P.A. (2020). Data for "Updated science-wide author databases of standardized citation indicators", Mendeley Data, V2, doi: 10.17632/btchxktzyw.2

Higher Education Mobility Scoreboard 2018/2019

Rank	Country
1	Belgium (Flemish-speaking)
2	Belgium (German-speaking)
2	Germany
3	Finland
3	Luxembourg
3	Poland
3	Malta
3	Denmark
3	France
3	Netherlands
4	Czechia
4	Austria
4	Italy

Source: OPI PIB report based on Higher Education Mobility Scoreboard, https://eacea.ec.europa.eu/national-policies/en/mobility-scoreboard [access 12 Jan 2020].

Source: GUS (Statistics Poland), „Higher education and its finances in 2019" report

Fields of study taught in a foreign language chosen by international students in the 2019/20 academic year

#	Fields of study	Number of foreign students
1	Medical	6,505
2	Management	4,057
3	Computer science	1,514
4	Internal Security	1,250
5	Medical and Dentristry	933
6	International Relations	793
7	Finance and Accounting	749
8	Economics	706
9	Veterinary Science	408
10	Architecture	295
11	International Economic Relations	290
12	Mechanics and Mechanical Engineering	227
13	Bachelor of Business and Administration	189

Source: OPI PIB report based on POL-on, data as of: 3 Feb 2021

University of Gdańsk | **1418**

Gdańsk University of Technology | **1257**

Westpomerania University of Technology (Szczecin) | **1101**

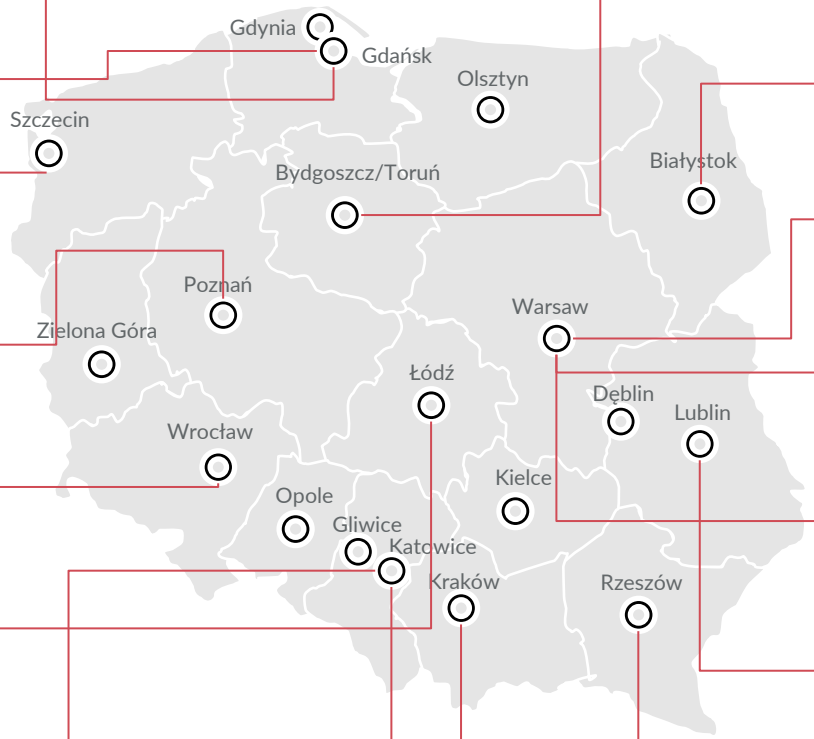
Poznan University of Technology | **2276**

Wrocław University of Technology | **3396**

Łódź University of Technology | **2164**

Silesia University of Technology | **3319**

University of Silesia | **1304**



Bydgoszcz University of Life Sciences and Technology | **921**

Białystok University of Technology | **749**

Warsaw University of Technology | **4320**

University of Warsaw | **768**

Polish-Japan Academy of Computer Sciences (Warsaw) | **4540**

Lublin University of Technology | **1676**

IT and Management Higher School (Rzeszów) | **1047**

AGH Cracow University of Technology | **3803**

Source: The National Agency for Academic Exchange (NAWA) Objectives and Lines of Action for 2021–2027)

Best technical university | overall

Rank	University	City
1.	Warsaw University of Technology	Warsaw
2.	AGH University of Science and Technology	Kraków
3.	Gdansk University of Technology	Gdańsk
4.	Wrocław University of Science and Technology	Wrocław
5.	Technical University of Łódź	Łódź
6.	Silesian University of Technology	Gliwice
7.	Poznań University of Technology	Poznań
8.	Lublin University of Technology	Lublin

Ranking by subject | IT

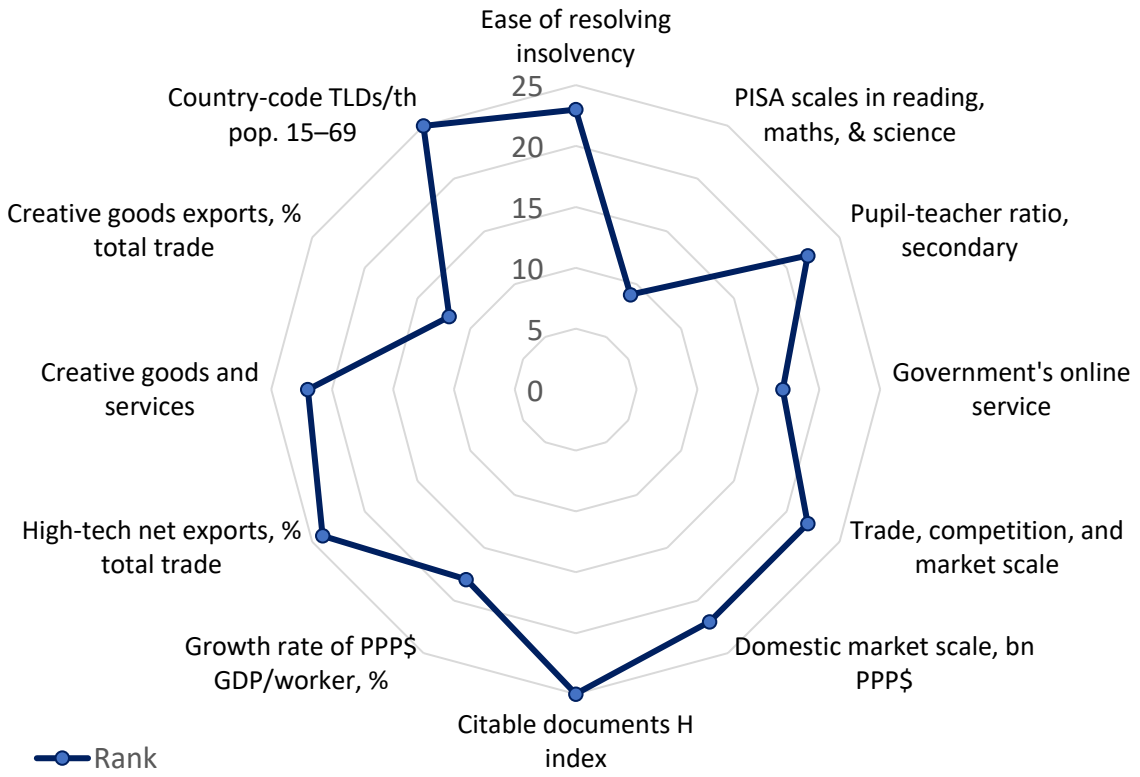
Rank	University	City
1.	Warsaw University of Technology	Warsaw
2.	AGH University of Science and Technology	Kraków
3.	Wrocław University of Science and Technology	Wrocław
4.	Poznań University of Technology	Poznań
5.	Gdansk University of Technology	Gdańsk
6.	Silesian University of Technology	Gliwice
7.	Technical University of Łódź	Łódź
8.	Tadeusz Kościuszko Cracow University of Technology	Krakow

Ranking by subject electronics & telecommunication

Rank	University	City
1.	Warsaw University of Technology	Warsaw
2.	AGH University of Science and Technology	Kraków
3.	Gdansk University of Technology	Gdańsk
4.	Wrocław University of Science and Technology	Wrocław
5.	Technical University of Łódź	Poznań
6.	Silesian University of Technology	Gliwice
7.	Poznań University of Technology	Poznań
8.	The Jaroslaw Dabrowski Military University of Technology	Warsaw

Source: Perspektywy 2021

Poland's strengths according to the Global Innovation Index 2020



Selected famous inventions of Poles

- Kerosene lamp – Ignacy Łukasiewicz
- Polio vaccine – Hilary Koprowski
- Windscreen wipers – Józef Hofmann
- Bulletproof vest – Jan Szczepanik, Kazimierz Żegleń
- Mine detector – Józef Kosacki, Andrzej Graboś
- Hologram – pioneering work done by Mieczysław Wolfke

Interesting facts and achievements of Poles

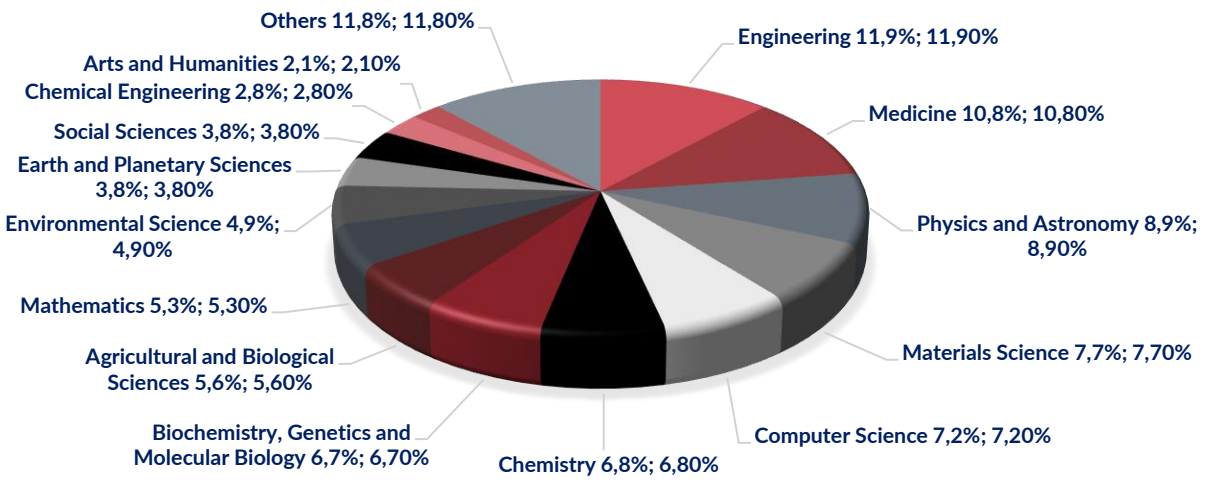
- Amazon Alexa – virtual assistant technology bought by Amazon from a Polish startup called Ivona from Tri-city
- International Collegiate Programming Contest – Polish students have been among the best teams for the last 26 years
- POLSA – Polish Space Agency
- Nobel Prize - one, two, three, or even four prizes won by one family? Maria Skłodowska-Curie and her family made it possible!

The National Centre for Research and Development (NCBR)	PLN 49.5 billion, which is the total 2011–2021 budget of the National Centre for Research and Development (NCBR), has been primarily allocated to R&D activities in Poland. *(Source: NCBR 2020 Annual Report)*
The National Science Centre (NCN)	**NCN granted over PLN 10 855.5 million of funding in domestic and international bilateral calls** (23,195 applications were qualified) concluded over the period of 2011–2020. *(Source: NCN Financial Statements)*
The National Agency for Academic Exchange (NAWA)	In 2018–2020, **NAWA allocated PLN 402 million** for tasks aimed to internationalize higher education and science. *(Source: NAWA Financial Statements)*
Horyzont 2020	**Under Horizon 2020,** Polish organizations have been awarded 1919 grants for **a total of EUR 732.5 million.** *(Source: https://webgate.ec.europa.eu)*

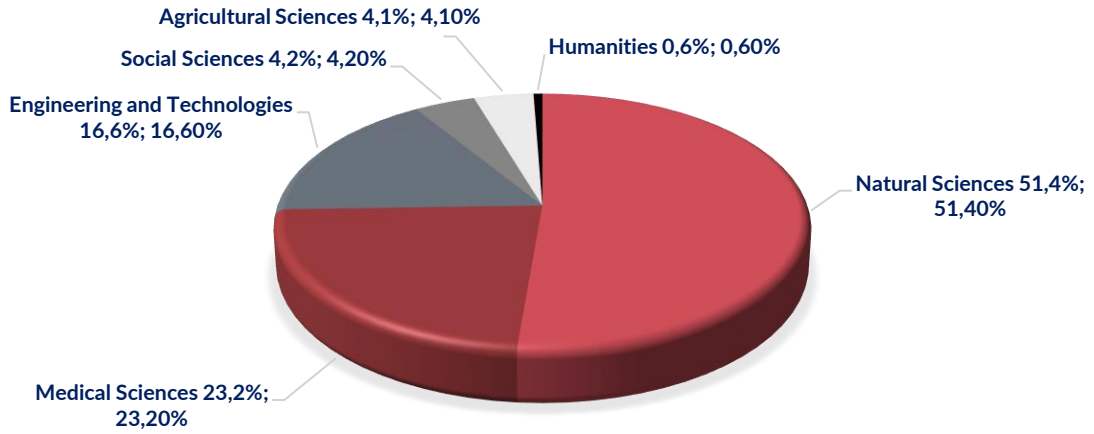
Learn more about all programs

Source: NCBR 2020 Annual Report, NCN Financial Statements, NAWA Financial Statements, webgate.ec.europa.eu

Polish Publications by Subject Area (Scholarly Output) 2014–2019



Publications in Poland that fall within the top 10% journals by SCImago Journal Rank (SJR) – by Subject Area 2014–2019



**Other: Energy 1,8 %, Pharmacology 1.8%, Toxicology and Pharmaceutics 1,8%, Business, Management and Accounting 1,3%, Immunology and Microbiology 1,2%, Neuroscience 0,9%, Economics, Econometrics and Finance 0,9%, Psychology 0,8%, Multidisciplinary 0,7%, Veterinary 0,7%, Decision Sciences 0,6%, Health Professions 0,4%, Nursing 0,4%, Dentistry 0,2%*
Source: the National Agency for Academic Exchange (NAWA) Objectives and Lines of Action for 2021–2027)

Sławomir Olejnik

CEO, Poland Innovative Foundation

In Poland, most research and development work is funded from public money (national and EU grants). Some Polish businesses collaborate with universities and research institutes, however this type of cooperation is still most accessible to corporations, large privately-owned businesses, and startups. At the same time, companies from abroad try to conduct or commission research in Poland more and more frequently, the reason being in particular the highly qualified Polish resources: researchers, PhD candidates, and students (e.g. in biotechnology, AI, nanotechnology). The Innovative Poland Foundation is there to help foreign investors, businesses, and research bodies find the right partners for their work among Polish scientists, innovators, and entrepreneurs. We advise, broker, and liaise between companies and the dispersed deep tech ecosystem and its participants. By using our links with Poles and the Polish diaspora abroad, we seek synergy between the Polish talent in the country and abroad.

We bring together representatives of science, business, startups and NGOs to create an international network of Poles and Polish diaspora. We support business owners, foster collaboration between science and business, and lay foundations for innovation. Our objective is to establish a private research university in Poland, along with its ecosystem. It will be supported by the innoSHARE Institute, which is currently being founded, and the innoSHARE Network, a community of entrepreneurs and innovators.

Want to learn more? | Visit polandinnovative.com

9. Incentives

IN COOPERATION WITH

Baker McKenzie.

KPMG

9.1. EU funds, financial aid and tax incentives

Cash grants
for large investments, innovative investments, R&D projects, trainings

Tax incentives
for most types of investments and R&D projects

Preferential loans
for environmental projects and technological innovations (SME)

Equity contributions
for startups and strategic projects

MOST FAVORABLE CONDITIONS FOR R&D ACTIVITIES

R&D center status

- **Run R&D activities** | Benefit from the official, legal status of an R&D center
- **Straightforward procedure** | one-stop shop at the Ministry of Economic Development
- **Easier access** | To funds for innovations from public aid programs
- **Annual benefit** | R&D expenditures is **deductible from your tax base**

R&D tax cut

- **Easy to apply instrument** | **Dedicated to** R&D activity
- **Deductions of 200% & 250% for R&D Centers** | Cost can be deducted even 2.5 times
- **Benefits available regardless of company size** | Same rules for SME and Multinational Corporations
- **Long-term tax benefit** | Tax cuts available over 6 consecutive tax years

Innovation box

- **Even only 5% tax rate** | Eligible income gained through the sale of IP rights
- **Invent & Commercialize** | sell it in Poland and enjoy a lower tax rate
- **Covers the most popular IP rights** | Computer programs, patents, industrial design
- **Long-term tax benefit** | Applicable during the entire lifespan of the rights

National incentives

Offered by the government | Learn more

- **CIT exemption**, between 10 and 15 years tax free
- **Cash grants** for business services and R&D projects

EU funds

Poland is one of the biggest funding beneficiary for EU financing period 2021 – 2027. Poland will receive c.a. **EUR 160 bln** (increase of 45% vs 2014-2020 period) in subsidies and loans:

- at least **EUR 15 bln** will be spend on digitalization and new technologies, including fiber and 5G networks, R&D, technology transfer, automation, robotization
- at least **EUR 30bln** will be spend on green projects

International incentives

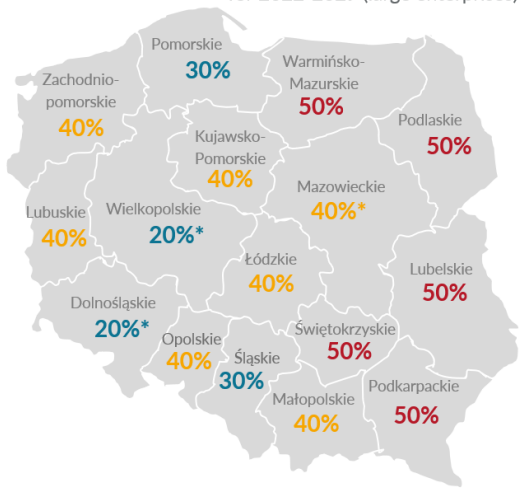
Horizon Europe 2021 – 2027 | Total budget: EUR 95.5 bln

- 30% increase compared to previous Horizon 2020

The below traditional investment incentives are available subject to the conditions e.g. for IT projects and R&D centers (R&D centers benefit from lowest entry thresholds).

- Full exemption from 19% corporate income tax (CIT) for 10-15 years.
- Cash grants from the government awarded discretionally depending on the quality of the project.

Maximum levels of support for **2022-2027** (large enterprises)



The total amount of tax exemption may not exceed the maximum aid intensity in a given region.

Wielkopolskie and Dolnośląskie regions will become so-called 'c' regions, where public aid for large enterprises shall only be granted for an initial investment for a new economic activity (not the same or similar to the one conducted in the establishment so far, i.e. not the same class in NACE Rev. 2).

The maximum levels of suport in wielkopolskie and dolnośląskie regions will be lowered: it may remain at 20% (25% in some areas) and will be at 15% from 2025. From 2022 aid intensity will also fall in pomorskie region (to 30%).

The level of support for Warsaw will be zero.

Piotr Wysocki

Tax Advisor, Partner
Baker McKenzie

The issue of innovation has become one of the priorities for the government which declares growing support for this area. Currently, the tax reform bill is in the parliament which makes the existing incentives more generous and introduces new tax incentives from 2022. Our experience shows that highly skilled IT workforce and developed business ecosystem together with the public support attracts a growing number of investors locating technologically advanced projects in Poland both through acquisitions and green field investments.

Key features

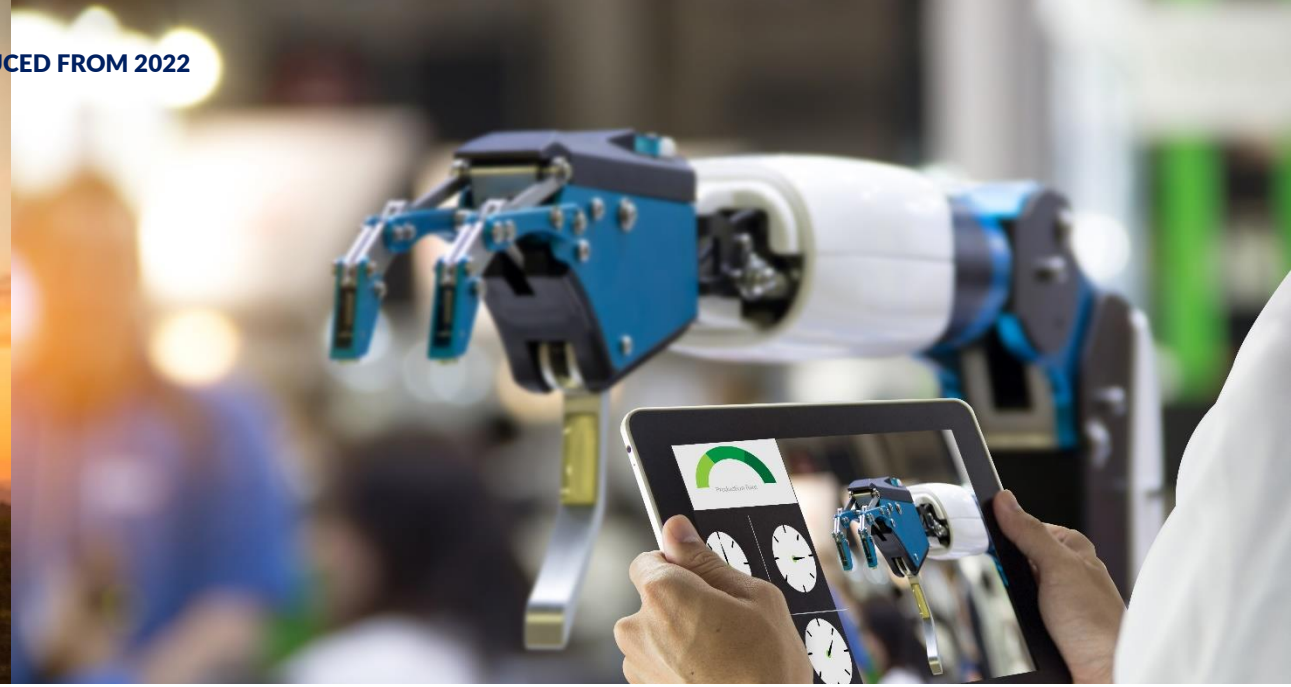
- Firms can make a additional deduction from (additional reduction of) the tax base of certain costs incurred on R&D activities (primarily, HR expenses, raw materials, equipment, certain types of services, securing patent rights, etc.). The headline rate of relief for all qualifying expenditure is 100% in 2021 and 150% for companies with Research Development Centre (RDC) status. It is likely that from 2022 the additional deduction will be increased to 200% of HR (employment) expenses and to 200% of all expenses in case of RDC.
- In the case of insufficient tax liability, unused credits can be carried-forward 6 years. The R&D tax allowance is fully refundable for start-ups only. From 2022 it is likely that additionally the unused credits can be deducted from payroll tax advances of R&D employees
- No ceilings are placed on the amount of qualifying R&D expenditure or value of R&D tax relief

FEATURE	R&D TAX ALLOWANCE
Type of instrument	Volume based – i.e. additional credit for qualifying costs of R&D activities
Eligible expenditures	HR expenses, raw materials, equipment, certain types of services, securing patent rights, etc. (plus building depreciation if RDC status)
Headline rates	100% 200% for HR (employement expenses) likely from 2022
Cash refund (if allowance not obtain from decrease of tax liability)	Yes (for start-ups only) Deduction from payroll tax advances likely from 2022
Carry-over (years)	6 (carry-forward)
Thresholds & ceilings	No

Key features

- IP Box allows for taxation at 5% (instead of standard 19%) of qualified income from certain types of IP created or developed as a result of R&D activities of a taxpayer, e.g. patents, protection rights for a utility model, rights from registration of integrated circuit topography, computer programs
- The 5% tax rate applies to revenues from sale or licensing of the qualifying IP, as well as the value of the qualifying IP included in the price of goods or services sold by a taxpayer. Up to 100% of income from the qualifying IP may be taxed at 5% (depending on the structure of costs incurred on creation or development of the qualifying IP)

FEATURE	R&D TAX ALLOWANCE
Type of instrument	Income based – reduced 5% CIT applicable to an income derived from certain IP rights
Eligible Income	patents; extensions of patent protection; protected utility models; registered industrial designs; registered topographies of integrated circuits; extensions of patent protection for medicinal products and plant protection products; registered medicinal and veterinary products admitted to trading; registered new varieties of plants and animal breeds; and rights to computer programs.
Nexus adjustment	The adjustment relates to the ratio of costs incurred on self-developed of IP rights in R&D activity and costs of subcontracting of R&D activity
Conditions	The IP Box can apply provided that a firm conducts R&D activity related to development, creation, or improvement of qualifying IP. Need to separate the qualifying IP income in accounting books



Tax relief for prototypes

The prototype relief concerns the trial production of a new product and its launching on the market. New solution supports the costs incurred by the taxpayer in the stage of testing the invention, before mass production and marketing. A company that decides to prepare a prototype may claim the expenses incurred for its creation as tax deductible costs. In addition, the prototype relief will allow the taxpayer to deduct an additional 30% of expenses from the tax base (but not more than 10% of income). That is, for every PLN spent on the development of a prototype, the company's income will decrease by 1.30 PLN.

Tax relief for robotization

The prototype relief concerns the trial production of a new product and its launching on the market. New solution supports the costs incurred by the taxpayer in the stage of testing the invention, before mass production and marketing. A company that decides to prepare a prototype may claim the expenses incurred for its creation as tax deductible costs. In addition, the prototype relief will allow the taxpayer to deduct an additional 30% of expenses from the tax base (but not more than 10% of income). That is, for every PLN spent on the development of a prototype, the company's income will decrease by 1.30 PLN.

Kiejstut Żagun

Partner, Head of Innovation, Grants & Incentives at KPMG in Poland

Poland offers one of most generous incentive systems to support innovations, R&D, investments. It's a combinations of tax incentives (e.g. IP Box), cash grants (e.g. for R&D projects) and affordable financing for startups. Many of the incentives can be combined, for example a particular R&D project can be incentivized by a cash grant and R&D tax deduction at the same time. On top of that engineers and software developers can apply a special personal lower taxation scheme.

Companies that develop solutions, technologies and products (including software) can get incentives not only for the development phase but also apply IP Box income taxation rate of 5% (instead of standard 19%) on the income delivered from innovative solutions. Poland follows OECD guidelines regarding IP Box, thus proper documentation must be provided by taxpayers upon request from tax authorities.

Foreign and domestic investment into new production lines, factories and other production and service facilities (e.g. R&D center) can get income tax exemptions calculated from value of investment (e.g. tax exemption value up to 50% of capex for large companies) and cash grants.

Please note that some of the schemes requires to file application before starting the project (e.g. income tax exemption in "Polish Investment Zone") whereby others can be applied even retroactively (e.g. R&D tax incentive).

9.2. Poland. Business Harbour.

GOVERNMENT PROGRAM FOR TALENT ACQUISITION
FROM THE EASTERN MARKETS

Poland.
Business Harbour

Main goal of the program

- To strengthen competencies of the IT sector through talent acquisition from **Belarus, Ukraine, Russia, Moldova, Armenia and Georgia**
- To meet the increasing demand for IT specialists in Poland and support relocation of programmers from the Eastern markets to Poland
- To enhance the IT sector in smaller cities of Poland
- To strengthen further the position of Poland as a major IT hub in Europe

Solutions introduced by the Poland. Business Harbour programme

- **Accelerated visa path** – applications for Poland.Business Harbour have priority over other applications
- **No requirement for work permits** for the participants of the PBH programme during the visa validity (Legal base: *Rozporządzenie Ministra Rozwoju, Pracy i Technologii z dnia 20 listopada 2020*)
- **Possibility to register as a sole trader** (Legal base: Ustawa z dnia 6 marca 2018 r. o zasadach uczestnictwa przedsiębiorców zagranicznych i innych osób zagranicznych w obrocie gospodarczym na terytorium Rzeczypospolitej Polskiej)
- **All solutions are extended to family members** of the eligible groups

Poland. Business Harbour programme was established in cooperation with number of governmental institutions to support innovators and entrepreneurs considering relocation to Poland.

Poland.
Business Harbour

Three groups of beneficiaries:

IT Specialists

Accelerated path for individual visa applications, direct contacts with consulates

Startups

Comprehensive startup package offered by the operators selected by PARP under the program Poland Prize

SMEs and large companies

Tailored support dedicated to individual investment projects by PAIH, Investment Centre

Interested? Learn more

Justyna Orłowska

Prime Minister's High Representative for Government Technology
and Digital Transformation, Head of the GovTech Centre

Poland. Business Harbour (PBH) is a programme designed to help IT specialists and companies from Armenia, Georgia, Ukraine, Moldova, Russia and Belarus to move to Poland. This programme is an answer to the needs of companies from Poland, which lack employees.

The programme was initially intended for IT specialists, start-ups and small, medium and large companies from Belarus, but the demands of Polish companies looking for specialists caused it to be extended to Armenia, Georgia, Moldova, Russia and Ukraine. From July 2021, people from these countries who qualify to participate can receive a special visa. This visa allows to work without a permit, to set up a business and to take immediate family.

Residents of the above countries who are thinking of working in the IT sector in Poland can contact companies, a list of which can be found on the programme website (link). If the company considers that the person has the potential to be a valuable employee, it can recommend him/her to the Polish diplomatic mission. On this basis special visas will be issued in an accelerated procedure. The visas are issued for one year, assuming that during that time the employee and his/her family will obtain a permanent residence permit in Poland.

The second path in the PBH programme is the relocation of startups, which is facilitated by the Polish Agency for Enterprise Development (PARP) within the Poland Prize. Startups that apply to one of about 10 operators of this programme will receive support, including financial, when moving to Poland and access to the entire Polish acceleration ecosystem.

The third path is implemented in cooperation with the Polish Investment and Trade Agency (PAIH). It is designed for more mature companies. PAIH has already attracted several investments from these new countries. Regardless of the path, participants of the programme and their families will receive the same visas.

Interest in the programme in Armenia, Georgia, Ukraine, Moldova and Russia is very high. I hope that we will be able to repeat the success of the Belarusian edition of the programme, under which we have already issued over 13 000 visas. That is why we decided to expand the programme so quickly, after less than a year of operation. This decision was also helped by the fact that the value of investment projects attracted under the programme has already exceeded EUR 120 million. When the programme was launched, Poland was chosen by every tenth specialist leaving Belarus and, after several months, by almost every second. About 200 partner companies from Poland which have signed up for the programme believe in repeating this success. However, I encourage other companies, as the list remains open.

PBH is the first in Poland and one of the largest in Europe programmes attracting specialists in the IT sector. PBH is a symbol of the maturity of the Polish economy. There is no unemployment in Poland, so there is no question of taking anyone's job, on the contrary, there is a shortage of specialists. This programme shows that Poland is becoming a digital valley and a magnet for IT specialists.

9.3. Poland Prize

2nd edition launched in June 2021 with total budget: **PLN 106m (EUR 23m)**

- Financed by Polish Agency for Enterprise Development (PARP)
- Managed by 10 operators (accelerators) selected by PARP located in Warsaw, Kraków, Gdańsk, Łódź, Poznań, Kielce, Rzeszów, Lublin
- Offer for startups: cash grant up to **PLN 300,000 (EUR 65,000)**
- Package includes: soft-landing, development, acceleration, Proof of Concept with the Business Partner | Learn more

SOFT-LANDING & DEVELOPMENT

UP TO EUR 10 000 IN A FORM OF A GRANT ON 1ST STAGE FOR SERVICES

PARP Grupa PFR

ACCELERATION – PROOF OF CONCEPT WITH BUSINESS PARTNER

UP TO EUR 55 000 IN A FORM OF A GRANT ON 2ND STAGE FOR SERVICES AND COSTS OF PoC

- Services of Concierge for comprehensive support regarding relocation and integration with the polish startup's ecosystem
- Legal advisory on behalf of the legalization of stay in the territory of Poland, support in the company registration
- Development Manager support in the field of preparation for cooperation with business partner
- Acceleration workshops
- Services of proven advisors
- Access to the network of mentors, meetings with business partners
- Demo day

An example of a startup package offered under Poland Prize

- Proof of Concept (PoC) conducted with a business partner
- Support of the Acceleration Manager in the cooperation regarding the Proof of Concept's scope
- Guidance from the Legal and Financial Office
- Access to a group of professional advisors (depending on the individual needs of the startup)

STARTUP HUB POLAND · STARTER · brinc · HUGE THING · BLUE DOT SOLUTIONS

Pilot edition of the program in 2019

- 3000 applications from 70 countries
- 101 top foreign startups launched in Poland
- 82 startups continue operations in Poland as of May 2021
- 5 operators

10. Tech sectors in Poland

10.1. DeepTech | Artificial Intelligence

IN COOPERATION WITH

aipoland digitalpoland

10SENSES

1

Leading cities

AI development concentrated in six large metropolitan areas. Warsaw is the capital of artificial intelligence, as it is here that over 40% of companies and organisations in this sector have their headquarters.

2

AI Companies

300+ Polish dynamic AI companies with revenue mix from Poland and abroad. This includes i.a. Lingaro, Synerise, Netguru, Tooploox, RTB House, STX Next, Predica, Spyrosoft and many more!

3

R&D | GDS

40+ global companies that placed R&D, GDS, SDC in Poland. This includes i.a. Amazon, Aptiv, Citi, Google, Intel, EY, Nokia, Nvidia, Ringiex Axel Springer Tech, Samsung, T-Mobile, TomTom, UBS

4

AI Policy

AI policy took effect in 2021. This includes i.a. creating AI Virtual Research Institute, Three centers of AI excellence, New AI Institute - NCBR Ideas, 190 mln USD funding for applying AI, Open data policy

5

Institutions

Set of institutions supporting the development of AI in Poland. This includes i.a. NCBR, NCN, IPI PAN, OPI PIB, Digital Poland Foundation with aipoland initiative

6

Science

Several Scientific AI societies. In 2018, Polish Initiative for the Advancement of Artificial Intelligence (PP-RAI) was formed as an umbrella organization

7

AI events

Nine leading AI events that bring together AI professionals and researchers. This includes i.a. PP-RAI, ICAISC, TFML, PL in ML, Data Science Summit, PyData Warsaw

8

AI Communities

A dozen of dynamic communities and study groups that meet regularly, which i.a. include Warsaw.ai, MLGdańsk, Deep Learning Labs, SKALP Robotics Association, GMUM, Data Science Warsaw, DataOps Poland

Allegro

Comarch

Lingaro

Sales manago

Ardigen

Synerise

Netguru

Tooploox

VirtusLab

Sages

RTB House

Applica

Deepsense

Future processing

PGS software

Digica

Brainly

QED Software

eDrone

Infermedica

Onwelo

STX Next

Nethone

Predica

Spyrosoft

alphamoon

SoftwareMill

Neurosys

Nomagic

Neoteric

Neptune.ai

VoiceLab

Lekta.ai

Yosh

addepto

Sotrender

BrainScan

Cosmose

Emplocity

Sport Algorithmics and Gaming

StethoMe

GetResponse

MIM Solutions

SentiOne

Codewise

Nokia

Intel

UBS

Google

Samsung R&D Institute

IBM

Roche

Accenture

Epam

Credit Suisse

SII Group

EY

Capgemini

ABB

Aptiv

TCL Research Europe

Citi

P&G

Amazon

IQVIA

ING

TomTom

Ocado Group

OLX Group

Atos

Nvidia

T-Mobile

Bosh

ByteDance

Pearson OKI

Revolut

Nielsen IQ

Ringier Axel Springer Tech

Schneider Electric

BCG Gamma

There are several institutions supporting the development of AI.
These range from basic research, through implementation, to research into the wider impact of technology on society.

Narodowe Centrum Nauki

Financing of basic research on AI

The National Centre for Research and Development

Financing of AI implementation

IPPT PAN

Conducting research on AI

digitalpoland aipoland

Supporting cooperation, digital and AI initiatives in Poland

National Information Processing Institute

Conducting research on AI, promoting AI in the society

PAN

Conducting research on AI

IITiS

Conducting research on AI

IBS PAN

Conducting research on AI

Organisation	Foundation	President
Polish Initiative for the Advancement of Artificial Intelligence (PP-RAI: Polskie Porozumienie na Rzecz Rozwoju Sztucznej Inteligencji)	2018	Coordination committee consists of 9 members who represent each of the 5 founding societies
5 PP-RAI societies:		
Polish Artificial Intelligence Society (Polskie Stowarzyszenie Sztucznej Inteligencji)	2009	Grzegorz J. Nalepa, AGH University of Science and Technology
Polish Neural Network Society (Polskie Towarzystwo Sieci Neuronowych)	1995	Leszek Rutkowski, Częstochowa University of Technology
Polish Special Interest Group on Machine Learning (Polska Grupa Systemów Uczących się PL SIGML)	2013	Jacek Koronacki, Polish Academy of Sciences; Jerzy Stefanowski, Poznań University of Technology; Michał Woźniak, Wrocław University of Science and Technology
IEEE Systems, Man, and Cybernetics Society, Polish Chapter		Ireneusz Czarnowski, Gdynia Maritime University
IEEE Computational Intelligence Society, Polish Chapter		Joanna Kołodziej, Warsaw University of Technology
Other societies:		
IEEE Robotics and Automation Society, Polish Chapter		Krzysztof Kozłowski, Poznań University of Technology
Association for Image Processing (Polish Member Society of the IAPR logo International Association for Pattern Recognition)	1998	Leszek Chmielewski, Warsaw University of Life Sciences
Network Science Society, Polish Chapter		Przemysław Kazienko, Wroclaw University of Science and Technology
Poland Chapter of IEEE Signal Processing Society		Piotr Augustyniak, AGH University of Science and Technology
International Neuroinformatics Coordinating Facility Node of Poland	2007	Tomasz Piotrowski,Nicolaus Copernicus University

- There are many scientific societies focused on AI. Some have been active for more than two decades.
- In 2018, Polish Initiative for the Advancement of Artificial Intelligence (PP-RAI) was formed. It is an umbrella organisation aiming at coordinating activities of other societies.

PP-RAI
The Polish Initiative for the Advancement of Artificial Intelligence organises a conference aimed at discussing research and challenges facing the scientific community. It is held each year in different locations in Poland

ICAISC
The International Conference on Artificial Intelligence and Soft Computing is focused on various aspects of artificial intelligence and machine learning. It is held annually in Zakopane and lasts five days.

TFML
The conference on Theoretical Foundations of Machine Learning Conference is organized by the Department of Machine Learning, Institute of Computer Science and Computational Mathematics, Faculty of Mathematics and Computer Science, Jagiellonian University.

PL in ML
A conference for young researchers focused on research and applications of deep learning. It is held annually, lasts four days and is addressed to researchers.

PyData
The largest data science conference focused on users of the Python language. It is held annually, lasts two days and is addressed to specialists.

Why R?
A conference focused on applications of R language. It is held annually, lasts two days and is addressed to specialists.

GHOST Day
Organised by the Staff of the Faculty of Computing and Telecommunications, Poznań University of Technology. It is held annually in Poznań, lasts two days and is addressed to specialists.

AI & NLP Day
A conference covering various topics of AI but with more focus on NLP. Includes the PolEval competition for NLP tools. It is held annually, lasts two days and is addressed to specialists.

Data Science Summit
A conference on various data science topics, including machine learning, big data and data visualisation. It is held annually, lasts one day and is addressed to specialists and students, employer branding.

1. **University courses:**
Financing of additional 1000 students on AI and cybersecurity

2. **Research Institute:**
Creation of a virtual research institute on the idea of the Canadian CIFAR

3. **Applied AI:**
INFOSTRATEG programme with $190m funding for early stage projects. The programme targets 12 AI problems. Funded by NCBR.

4. **Open data:**
Initiative on raising the accessibility of public data. Poland ranked as open data trendsetter/leader.

5. **Data trust:**
Legal framework around contracts which allow for data exchange

6. **Raising awareness:**
Plans on raising the understanding of AI among general public

7. **Science: ARTIQ – AI Centers of Excellence.**
Funds from the basic budget will be allocated to financing 3 AI Centers of Excellence – up to 20 million PLN for each of them. In each of the AI Centers of Excellence, research teams focused around internationally renowned Leaders with significant scientific and implementation achievements will conduct innovative projects. Funded by NCBR and NCN.

Policy for AI Development in Poland

- Government development strategy for AI implementation in the Polish economy and public administration
- 125 short term and 70 medium term tasks planned under AI implementation in the society and business

Click here to download

1

State of Polish AI 2021
The latest version of the highly acclaimed Map of Polish AI 2019 and **the most comprehensive publication on the Polish AI ecosystem**. We present Polish companies that are developing advanced products and services using AI tools, the challenges facing AI companies, human capital, the R&D ecosystem, and the condition of the science sector. The report also includes insights from the leading industry experts, disruptive trends that shape the market and key AI policy recommendations.

Download the report and learn everything about the State of the Polish AI market!

Click here to download

2

Map of Polish Science in the field of AI was prepared together with OPI National Research Institute. The report presents the achievements of Polish science in the field of artificial intelligence and the scientific activity of scientists and students. You will also learn about the most active scientific organisation and universities in Poland.

Click here to download

3

Invest in AI in Poland
It's a short guide which explains why your company should invest and develop AI in Poland. Poland is a perfect spot because as it offers a highly-skilled workforce, a vibrant AI and tech ecosystem with tax benefits. It is for that reason that tech heavyweights have already invested here. It is also the reason why you should do so too.

Click here to download

digitalars

2nd edition | 2021 | 1st competition in Poland for art created with AI!

Idea

- **The first competition** in Poland addressed to teams and artists who create art with the help of Artificial Intelligence
- We support the **development of innovation in Poland** by promoting AI
- We **inspire artists** and support their development
- We **encourage public dialogue** about new technologies and their role in modern society

Categories

- **Open** | no restrictions on art type, method, work or style. Full creativity allowed!
- **New** | unique new works created using Artificial Intelligence (AI)
- **Metamorphosis, Transformation** | artistic interpretation of well-known works and paintings

Digital Ars Day

- Inauguration of the 2nd edition – special event online
- Speakers included such big stars like **David Hanson - Hanson Robotics** and **Agnieszka Piłat**, artist-in-residence at **Boston Dynamics**
- Interesting discussions on modern art and new tech, **NFT**

Click to see recording

Digital Ars 2020

- **3 mln reach** in national media coverage
- **50+ participants**
- **30+ jury** members
- **5000+ visitors** of the Virtual Exhibition

Click to see virtual exhibition

digitalpoland

Polish Investment & Trade Agency PFR Group

Łukasz Borowiecki

CEO & Co-founder, 10 Senses

"State of Polish AI 2021" outlines the tremendous progress Poland has made over the last ten years in AI development. Poland ranks seventh in the EU with a 4% share of the AI talent pool. Global leaders from various industries are moving their R&D and GDS centres to Poland to benefit from the access to Polish specialists who guarantee the highest worldwide standards in the execution of tasks crucial for their business.

Even though most companies have been adding AI services or products only since 2014, Poland conforms to global AI technologies trends. Furthermore, AI is clearly the domain of large metropolitan areas in Poland. Nearly all AI companies are located in one of the six major metropolitan areas, with Warsaw consistently garnering nearly half of them as the Polish AI capital.

With a great AI talent, the entrepreneurial spirit and fast-transforming sector of enterprises, Poland has got huge potential to become a digital heart of Europe.

aipoland

AIPoland is a leading initiative of **Digital Poland Foundation**, a non-profit organization. We aim to promote the Polish AI ecosystem and enable cooperation between Polish and foreign entities in various areas, including business cooperation, joint development of new initiatives and fundraising. We hope to achieve this by providing a complete overview of Polish AI scene which includes key facts, events, the database of Poland-based companies, R&D centres, Universities as well as Public Policy and support for AI development. We have prepared several market reports mainly with 10 Senses.

Our selected AI activities includes

- Digital Ars | First contest in Poland for art created by AI
- Elements of AI | Promotion of the best AI Courses |
- Workshops | AI Academy for managers
- Grants | Co-creation of Applied AI grants
- Roundtables | Support of key policy-makers and development of AI and digital policies
- Policy | Supporting the creation of a Polish AI Roadmap
- Ecosystem | Development of the AI market in Poland
- International cooperation

Want to learn more? | aipoland at digitalpoland.org | Visit aipoland.org

10SENSES

10 Senses is a Warsaw-based team specializing in AI, business intelligence and data engineering. We support companies in their data-related tasks. Our team has broad experience in advanced analytics and dealing with business challenges using state of the art technology. At 10 Senses we see value in cooperation and building a community. For this reason, since a few years we have supported Digital Poland Foundation and AIPoland.org in various activities making it possible to diagnose Polish AI market.

Among our core values is an interdisciplinary approach combining research methodology from social sciences and physics together with state-of-the-art data and AI tools. This assures that our clients receive the best data-products, insights, and explainability.

Our team has over 100 projects in the area of data and analytics in areas such as predictive models, scoring or NLP. We have gained trust of large coporate clients such as T-Mobile (Polish division of Deutsche Telekom) and Inter Cars. Our expertise is proven by our excellent Clutch reviews. We are also involved in the development of Polish AI strategy.

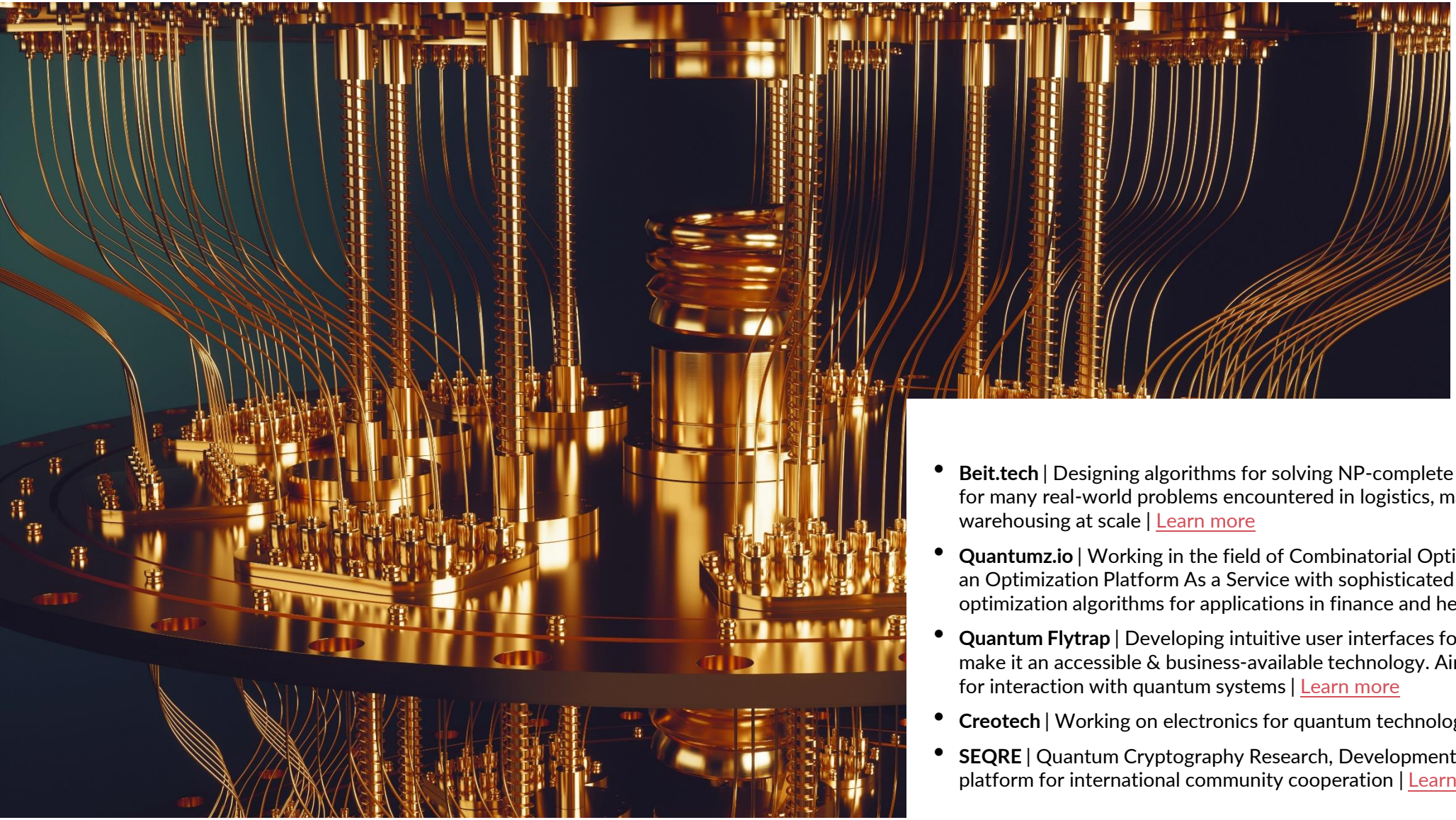
Want to learn more? | Visit 10senses.com

10.2. DeepTech | Quantum Computing

IN COOPERATION WITH

QUANTUM AI

FOUNDATION

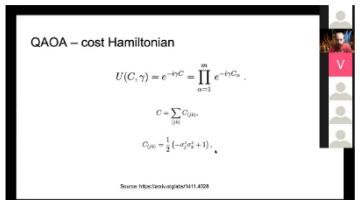


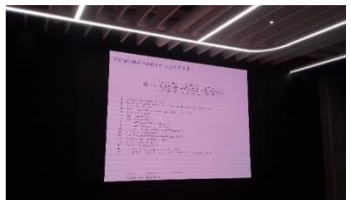
- **Beit.tech** | Designing algorithms for solving NP-complete class of problems relevant for many real-world problems encountered in logistics, manufacturing and warehousing at scale | Learn more
- **Quantumz.io** | Working in the field of Combinatorial Optimization - they are building an Optimization Platform As a Service with sophisticated parallel and distributed optimization algorithms for applications in finance and healthcare | Learn more
- **Quantum Flytrap** | Developing intuitive user interfaces for quantum computing to make it an accessible & business-available technology. Aiming to build the standard for interaction with quantum systems | Learn more
- **Creotech** | Working on electronics for quantum technologies | Learn more
- **SEQRE** | Quantum Cryptography Research, Development and Commercialization platform for international community cooperation | Learn more

- **IBM** | Contest | Learn more
- **ORCA Computing** | Development
- **Oxford Ionicx** | Collaboration with Warsaw University of Technology
- **BNP Paribas** | Organized Quantum Challenge in collaboration with IBM and QPoland | Learn more
- **NVIDIA** | Development

- **Centre for Theoretical Physics, Polish Academy of Sciences** | Learn more
- **Institute of Theoretical and Applied Informatics, Polish Academy of Sciences** | Learn more
- **Faculty of Physics, University of Warsaw** | Learn more1, Learn more2
- **Faculty of Electronics and Information Technology, Warsaw University of Technology** | Learn more
- **International Centre for Theory of Quantum Technologies, University of Gdańsk** | Learn more
- **National Quantum Information Centre** | Learn more
- **AGH University of Science and Technology** | Learn more
- **Cold atomic Space-Time Laboratory** | Learn more
- **Quantum Technologies Research Group - "QCAT"** | Learn more
- **Centre for Quantum Optical Technologies (QOT), Centre of New Technologies, University of Warsaw, Poland** | Learn more
- **QI2 Laboratory** | Learn more
- **AstroCeNT** | Learn more
- **PCSS** | Learn more
- **ISIK** | Learn more

- **Warsaw Quantum Computing Group** | Organised more than 30 Events | Learn more
  - Recordings available on YouTube channel | See more
- **Krakow Quantum Informatics Seminar** | Learn more
- **Quantum Information and Quantum Computing Working Group** | Learn more
- **Institute of Theoretical and Applied Informatics, Polish Academy of Sciences** Learn more





A comic book was published in Polish to popularize quantum informatics - “Revolution of a state - A fantastic introduction to quantum informatics” (in Polish "Rewolucja stanu - fantastyczne wprowadzenie do informatyki kwantowej").

The second edition was published in September 2021 by quantumz.io with the cooperation of BNP Paribas Bank, IBM, AstroCeNT and IITiS. The first part of the book takes the reader into a post-apocalyptic world controlled by an omnipotent organization named Cerber. There we meet a quantum hacker - Eve, who is just about to stand a trial. Her adventures depict fundamental topics in quantum informatics. The second part of the book is a more formal approach to raised topics.

Paweł Gora

CEO, Quantum AI Foundation

Poland is known for a good education level in STEM sciences including great results in international olympiads and contests in mathematics, physics and computer science. Top international technology companies such as Google, Microsoft, Nvidia, Amazon, Intel, Samsung, IBM, have their engineering offices located in Poland, many graduates of polish universities work for those companies abroad. There are several strong academic centers with research groups working on quantum technologies and collaborating with universities and companies from other countries. Young people, even high school students, are highly interested in quantum computing and keen to learn about this technology. Quantum AI Foundation has organized (in collaboration with QWorld) several workshops on quantum programming and has handed out almost 200 certificates for successful participants. The first quantum companies and startups emerge, as well as the first contests and hackathons on quantum programming. Therefore, the Polish QC sector has definitely great potential.

QUANTUM AI

FOUNDATION

Quantum AI Foundation - A charity organization aiming to support education, research, development and collaboration in science and new technologies, especially Artificial Intelligence and Quantum Computing, but also other fields on Mathematics and Computer Science

The Foundation achieves its goals by organizing quantum-related Events

- Warsaw Quantum Computing Group meetups | Organised more than 30 Events | Learn more
- Workshops on quantum computing and programming | About 200 certificates handed out | Learn more
- Contests | Learn more
- Hackathons | Learn more

The Foundation participates in the international program P-Tech | Learn more

Qpoland

The Foundation works closely with QWorld, by building a quantum computing community Qpoland Learn more

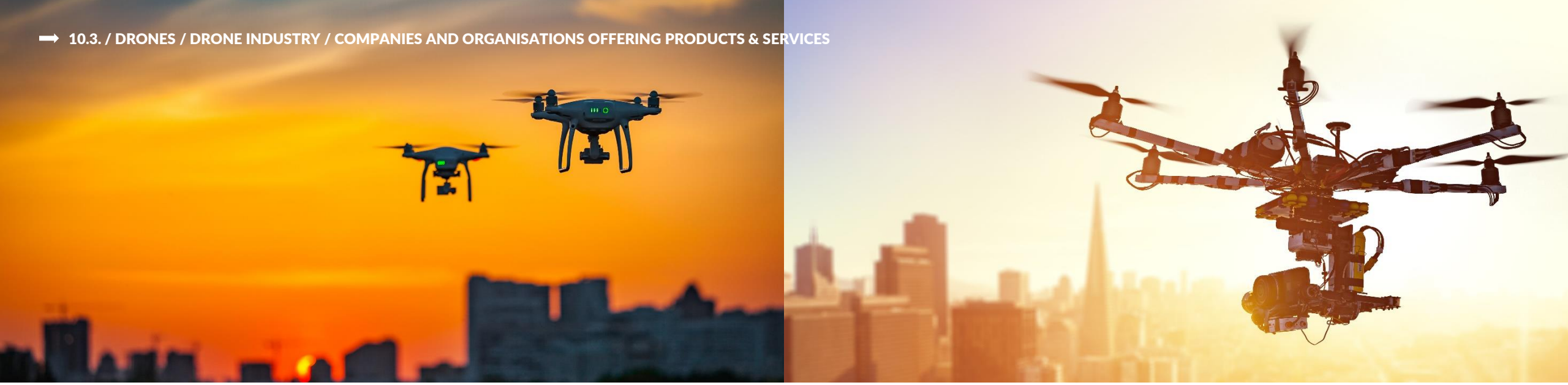
Want to learn more? | warsaw.quantum at gmail.com | qaif.org

10.3. DeepTech | Drones

IN COOPERATION WITH

- Drone Industry Insights states that Poland is the **second most drone friendly country in the world** (just behind Singapore) and the best place for the development of this technology in Europe
- The **favourable policy pursued by the Polish regulator since 2013** has made drones very popular and easily accessible in Poland. The activities of the Civil Aviation Office (ULC) and the Polish Air Navigation Services Agency (PANSA) have contributed to this.
- **Key market data**
  - Nearly 90,000 people have completed mandatory registration as UAV pilots
  - Nearly 300,000 VLOS (visual) and BVLOS (non-visual) drone flights in 2020 and over 400,000 in 2021, coordinated by PansaUTM (drone traffic management system),
  - more than 90 drone training centres,
  - an average of 1,000 users used Droneradar (mobile application for drone operators) per day in 2020
  - USD 0,8 billion value of the Polish market of civilian drones (excluding military ones) in 2017-2026
  - USD 20,7 billion worth of the European civilian drone market in 2017-2026
- **Poland was one of the first European Union countries to regulate issues related to unmanned aerial vehicles**. Out of the 16 U-Space projects (European concept for the integration of unmanned and manned aviation), which European countries must implement by 2030, Poland has already managed to implement as many as 9
- **Poland is the first country in the world to have an operational infrastructure supporting unmanned aircraft traffic management** - the PansaUTM system. This system enables the management of drone flights in Polish airspace and their safe separation from conventional manned air traffic. The PansaUTM system is fully digital and can be integrated with mobile applications for drone operators (e.g. Droneradar). It can be used by air navigation service providers, civil aviation authorities, the military and local government units.
- **Poland's PansaUTM drone flight coordination system has won two categories in the ATM Awards 2020** competition organised by Air Traffic Management Magazine and Unmanned Airspace Magazine. **PansaUTM won the Overall Excellence** award in the ATM 2020 competition, and also took first place in the ANSP UTM Projects category. The judges were particularly impressed by the scale and pioneering nature of the work undertaken by the PansaUTM consortium.

- design and supervision construction and infrastructure investments
- geodesy and spatial management
- agriculture, crop control
- security of facilities
- filming and photography
- real estate trade



Products

Drone Industry Insights states that Poland is the **second most drone friendly country in the world** (just behind Singapore) and the best place for the development of this technology in Europe

- Unmanned Traffic Management (UTM) | Drone Traffic Management (DTM) (Polish Air Navigation Services Agency)
- Manufacturers producing drones for civil or military applications (serial or custom production) | uAvionics, Flytronic, Farada, MSP Marcin Szender, Spartaqs, Eurotech, Flytech)
- Component manufacturers: microprocessors, sensors, equipments, batteries | Softblue, Aerobits, PCO, Scanway, Dronehub
- System (software, mobile applications) producers | Droneradar, Pentacomp, Skyx, BZB UAS, Asseco, Info Neurons
- Manufacturers producing anti-drones systems | Advanced Protection Systems, Hertz Systems)

Services

- Monitoring services | DronPol, BZB UAS, FlyTech
- Drone data analysis services | SkySnap, CloudFerro, QZSolutions, Geosystems Polska, ProGea 4D

DroneTech World Meeting
It's an international conference in Toruń, where the latest trends, opportunities and technologies are presented and discussed. DroneTech World Fair has been meeting since 2016 and brings together an international group of investors, developers and enthusiasts involved in unmanned technologies. You can see the latest information about the event, dates, agenda at the webpage | Learn more

Droniada in Kąkolewo Airport near Poznań
A technology competition for teams of academic students and open groups in missions using drones and information analysis systems. The goal of Droniada is to prepare students and graduates of universities to work in industry with new technologies. Companies check the competences of young technical staff and help them to further develop their skills. Public administration, entrepreneurs, farmers, crisis response services or critical infrastructure managers are looking for inspiration on how to use flying robots at work. The organizer is the Poznan Supercomputing and Networking Center (PCSS) | Learn more

- **Digital services for unmanned aerial vehicles**

  The Ministry of Infrastructure, the Polish Air Navigation Services Agency (PANSA) and the Civil Aviation Authority (CAA) have launched a drone development project worth more than PLN 61.5 million (€13.5 million) in 2020. The "*Digital services for unmanned aerial vehicles*" project, implemented under the Digital Poland Operational Programme, includes joint work on the development of digital and ICT solutions for the industry.

- **5G equipment and services** | Operators, telecom service providers and a state research centre - will develop a common 5G platform for drones in Poland
- **AI** | Creative companies, startups and spin-offs developing artificial intelligence technologies to analyse large image data sets from satellites and drones are emerging in Poland.

Karol Juszczyk

Adviser in the Poznan Supercomputing and Networking Center, expert VC, adviser public administration, co-founder of the Polish Chamber of Unmanned Systems

Drones have rapidly spread across the Polish sky and drone operations are increasing at an exponential rate. This growth is not only due to drones flying over the backyards for several hundred zlotys and operated by the youngest operators. Drones are used in everyday work by services, local governments and companies. Estimating insurance damage after disasters, taking stock in warehouses or checking the quality of traction or crops - all these tasks are now performed automatically by drone systems supported by artificial intelligence.

Such solutions are relatively easier to perform in Poland than in other countries, because we are one of the world leaders in drone legislation. On the EU market, the voice of the Polish drone community is listened to with attention because it is here that the world's first certified system for the coordination of general drone traffic has been created. Poland is therefore the unquestionable leader in the development of the drone market and it is here that it is worth developing services.

If you are interested in an investment or cooperation in the drone industry in Poland, please contact Karol Juszczyk via LinkedIn or the Digital Poland Foundation

10.4. GameDev and e-sport

IN COOPERATION WITH

470 game producers & publishers.

€969M industry revenue in 2020

12.110 people working in the game production sector

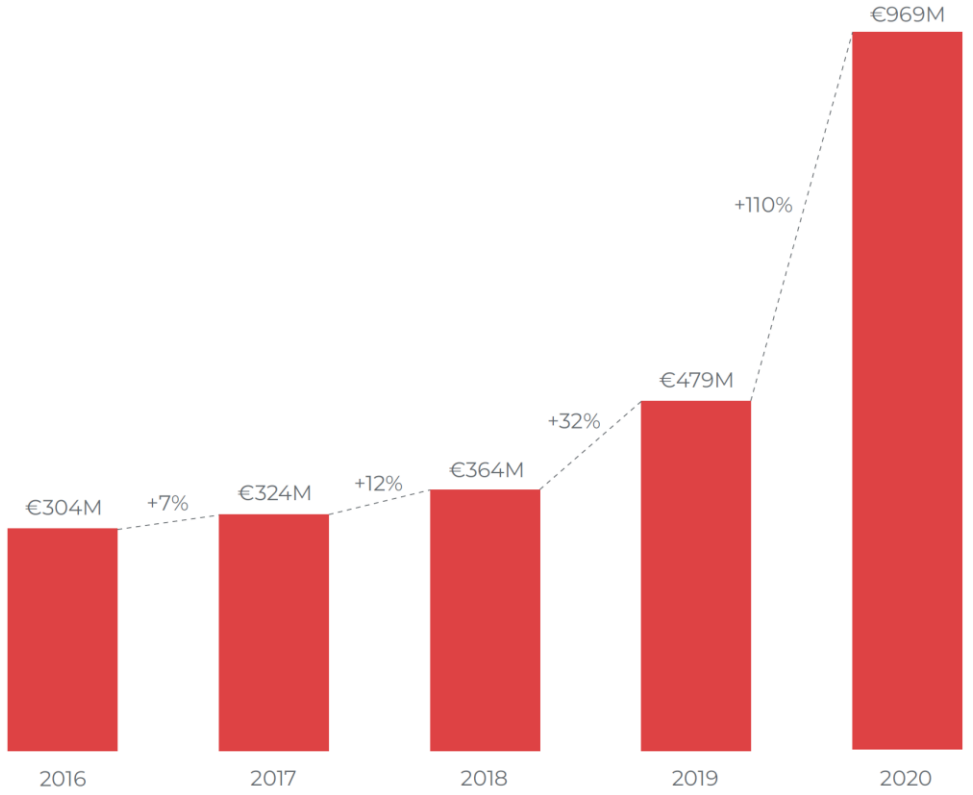
Of whom 25% are female

Over 1000 foreigners (more than 8% of total employment)

More than 24% year-on-year increase in employment

Sources: Game Industry Conference (gic.gd)

Revenues of game developers in Poland



Sources: Game Industry Conference (gic.gd)

600+ new releases annually, platform-wise

Poland is globally the 7th biggest game producer considering manpower and the fastest-growing one.

Polish games hit the top of wish lists

On Steam's Top 200 wishlists (most anticipated games) were games from :

1. Poland | 38
2. USA | 35
3. Canada | 16
4. Great Britain | 15
5. France | 12

In 2020, thanks to tremendous growth, the **Polish games industry** has finally reached a state where **more games are exported than imported**. Game production is the only creative and cultural industry that has managed to achieve this. Poland imports far more films, records, and books than it exports. **As a net exporter of games, it has joined a very exclusive club**. According to global estimates, only a few countries in the world have managed to do this.

CD Projekt Red

- leading game developer in Europe
- famous games The Witcher, Cyberpunk 2077

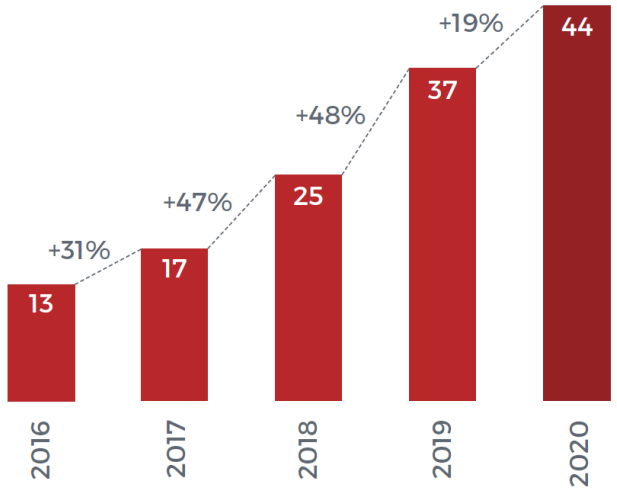
Platige Image

- one of top 5 production studios in Europe specialising in video game trailers
- cinematic work for Ubisoft (“Watch Dogs 2”), Microsoft (“Halo 5: Guardians”), CD Project RED (“The Witcher” series) and Crytek (“Ryse: Son of Rome. Legend of Damocles”)
- commercials for Coca-Cola, Nike, Microsoft, Pepsi, Fiat, McDonald’s, and Kellogg’s

Techland

- Techland's Dying Light 2 is the most expected game on Steam (the first part sold over 17m copies globally)

Global game publishers originating from Poland



Sources: Game Industry Conference, GamingAnalytics.info

Polish game titles with over one million copies sold, just in the last few years.

- 60 Seconds!
- 911 Operator series
- Car Mechanic Simulator series
- Cyberpunk 2077
- Dying Light
- Frostpunk
- Green Hell
- House Flipper
- Layers of Fear series
- Lords of The Fallen
- Outriders
- Ruiner
- Shadow Warrior series
- Sniper: Ghost Warrior series
- Superhot
- The Vanishing of Ethan Carter
- Thief Simulator
- This War of Mine
- The Witcher series

High-quality international events happening in Poland are the best means to reach out to the Polish game industry.

GAME INDUSTRY CONFERENCE

POZNAN GAME ARENA

Colocated events happening every October in Poznań

EXHIBITING OPTIONS

- B2B exhibition zone,
- Geek Careers recruitment zone
- B2C exhibition including Polish Developer Zone & Indie Developer Zone

NETWORKING MEANS

- Meet To Match networking system with dedicated meeting tables
- three evenings of networking parties
- several dedicated pitching events
- GameDev Investment Forum
- side events including specialized summits, game jams, and other

AWARDS

- Central and Eastern European Game Awards - regional awards with 16 countries cooperation
- Best Speaker Awards,
- Crystal Canvas Art Competition
- Best Game and Best Booth Awards

More at gic.gd

More at gamearena.pl/en

High-quality international events happening in Poland are the best means to reach out to the Polish game industry.

Digital Dragons

Happening every May in Kraków

EXHIBITING OPTIONS

- B2B exhibition zone, Indie Showcase

NETWORKING MEANS

- Pine application with dedicated meeting tables
- two evenings of networking parties
- VC Pitching Session & HR Zone

AWARDS

- Digital Dragons Awards - best Polish game awards
- Indie Showcase Awards & Students Talent Show

More at digitaldragons.pl

The Game Industry of Poland 2021
It's the second report in a row, published by the Polish Agency of Enterprise Development in cooperation with the Game Industry Conference. Describing the state of the Polish gamedev industry, the publication aims to present the profile of the sector, its potential, and strengths, with a particular focus on the last pandemic months. The ambition was to convince the public that the Polish gamedev is not only about games with the highest production and promotion budgets (AAA games), which have been highly successful on the world stage in recent years. The Polish gamedev is also about the whole range of smaller studios, full of very creative people who work hard for the success of our country on the global scene.

The report contains a mapping of over 150 profiles of Polish companies from the gaming industry: game developers, publishers, and companies providing game industry-related services.

Click here to download

Jakub Wójcik

Executive Chairman, Indie Games Poland Foundation

When publishing the previous report, we realized that the Polish gamedev industry was on the verge of a breakthrough, but no one expected the dynamics of the upcoming changes. The COVID-19 pandemic delayed long-waited premieres, caused component shortages, redefi ned functioning of game studios, game marketing, and cyberculture perception. We are glad that the Polish gamedev did not collapse under the burden of unexpected circumstances. Paradoxically, it was a successful year, and we ended it much stronger.

The national gamedev would be incomplete without the indie games sector. One of their many successes in 2020 stands out. The 'Carrion', an reinterpretation of B class horrors, won two 'The Game Awards' nominations, and the British Academy of Film and Television Arts statue. 2020 saw the establishment of many new studios in Poland: they pay taxes, create hundreds of jobs, and are becoming a boost to the domestic economy. In October 2020, the Warsaw Stock Exchange became a global leader in the number of listed gamedev companies. Also, the debut of Huuuge Inc. was the most extensive offer of a company from the mobile gaming industry in Europe. Despite challenges, we closed the year successfully and proved that Polish companies could compete and win against western giants.

INDIE GAMES POLAND FOUNDATION

Indie Games Poland | Non-profit industry organization, which was created to support Polish video game developers.

The primary role of Indie Games Poland (IGP) is to help video game developers with industry knowledge, branding, promotion and sales. IGP organizes Polish booths at all major industry trade shows around the world, from Seattle to Tokyo, helping Polish game developers promote their projects worldwide and meet with industry media, publishers, investors and partners. In addition, IGP is involved in industry research and data, support programmes, lobbying, education and raising public awareness of the role of video games as a modern medium and an important part of contemporary culture.

Want to learn more? | info at igp.org.pl | Learn more

20M

NUMBER OF GAMERS IN POLAND

- Over 80% are adults
- 49% are female

$11,5M

ESPORT MARKET VALUE

Source: Fantasyexpo

1

Intel Extreme Masters (IEM) is a series of international esports tournaments held in cities around the world. The event was held for the first time in 2006, and **since 2013 the world finals of the tournament have been held in the Spodek (arena) in Katowice, Poland**. Learn more

2

Poznań Game Arena is the largest computer, console, and multimedia entertainment fair in Central and Eastern Europe. For almost 15 years, PGA has been the most significant event dedicated to Polish players, setting standards and gathering the largest audience.
Learn more

3

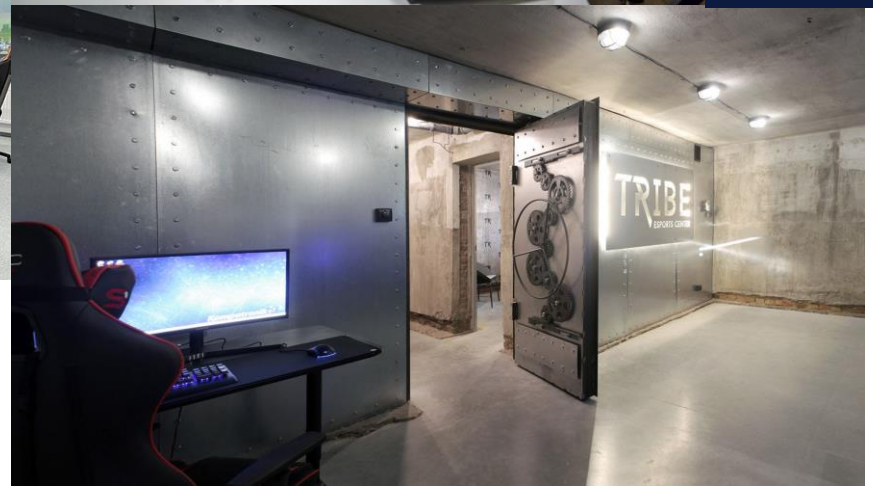
Super Puchar PGE Polish Esport League is a three-day summer event for families, which takes place over the weekend of July at the Baltic Sea. Numerous attractions are waiting, including two zones full of fun, show mats of gamers and influencers, competition of professional teams in CS:GO, great esports emotions in a unique place on the Polish coast combining sport and culture. Entry free!
Learn more

Kinguin Esport Performance Center | Warsaw | First professional facility for teams and esports industry in Central-Eastern Europe | Learn more

1

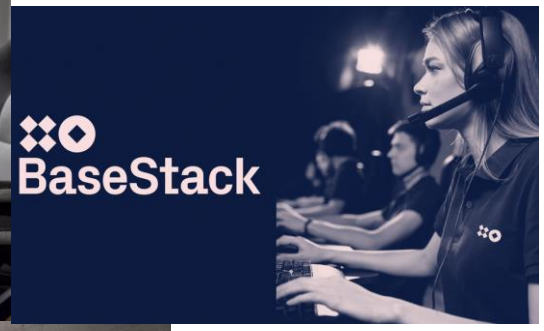
2

Katowice Gaming House | Poland's first complex & professional esports bootcamp facility designed for the world's best teams | Learn more



Tribe Esports Center | Poznań | Learn more

3



4

BaseStack | Łodz | Learn more

The 2020 edition of **Polish Gamers Research** allows for a detailed analysis of trends related to the characteristics of Polish gamers. The project was initiated in 2014 and confirmed that games have undoubtedly become a widely accepted form of entertainment regardless of gender, age or social status. Gamers are not a homogeneous group, and the group is constantly expanding, making it even more important to identify preferences related to specific categories from a business perspective.

Click here to download

GAMING TECH ESPORTS MEDIA

GAMING AGENCY

ESPORT LEAGUE

ESPORT ORGANIZATION

BUILDING AND MANAGING COMMUNITIES

Polish Esport League (Polska Liga Esportowa) | The league was launched in 2017 by the marketing agency Fantasyexpo. In 2020 the company Polska Liga Esportowa was established to professionalize esports competitions in Poland. Marcin Gortat, former NBA player and Dawid Podsiadło were invited to cooperate as investors.

Łukasz Trybuś

Founder, President of the Esports Association Poland,
President of the Management Board at KGH.EC
Owner at Katowice Gaming House

The challenge is to properly prepare young people for professional life in never before seen conditions of a dynamically changing world. Regardless of the research and analysis, we have limited knowledge of the future needs of the labor market and the directions of its development. The professions enjoying recognition and long standing reputation are disappearing. At the same time, entire branches of the 21st century economy are springing up like mushrooms after the rain. As active participants of the gaming market, we are convinced that gaming and education can effectively support the preparation of young people for professional life by inspiring them and stimulating the right skills. That is why we try to look for innovative methods - in such an important field as education, we cannot close ourselves to the reality of new technologies in which we operate. We are sure that the proper use of digital world products, including esports, can be an effective tool in the process of personal and professional development of young people.

ESPORTS ASSOCIATION POLSKA

One of the most important goals of our association is the promotion of Poland in the international arena through activities in the world of esport and the conscious and sustainable development of all its disciplines. The overriding goal of the Association is to professionalize the Polish electronic sports scene through: Education and prevention Systematisation of training and competition processes, Cooperation with central and local government administration, the private sector and representing the country in international structures.

In Poland, our association organizes national competitions at the level of secondary schools, universities and manages the National Team. We not only organize, but also administer and produce the competition on our own - using augmented reality, in our own production studio. We provide similar services for partners from many countries.

Our original, unique project in the world is the educational program implemented in secondary schools, based on games and esports "Interdisciplinarity of Electronic Sports".

Want to learn more? | Visit polskiesport.pl | Learn more

10.5. eCommerce

IN COOPERATION WITH

- According to a PwC study, there were 150 thousand companies selling online in 2020. 80,000 out of all online sellers in Poland have their own online stores. The remaining 70,000 sell only on Allegro – the biggest marketplace in Poland.
- PwC's analysis shows that the value of the Polish e-commerce market in 2020 was PLN 100 billion – including services, which generated an amount of approximately PLN 1.7 billion.
- The share of online sales in retail sales in Poland grew significantly in the first half of 2020. As reported by Statistics Poland, it amounted to as much as 11.9% in April – almost double the value from the beginning of the year (5.6% in the period of January – February 2020). The same trend was observed for the number of e shoppers. According to a Gemius report, the share of internet users buying online was 73%, which is 11 percentage points more than in the previous year (62% in 2019).
- What's the situation of the Polish e-commerce market compared to other European countries? The number of own online stores is still relatively low. The index describing the number of own online stores per 1,000 of residents aged 16-74 is only 2.9 for Poland – which is far less than in the case of Great Britain (8.7), the Netherlands (8.8), or Germany (4.7). It also shows the growth potential of the Polish e-commerce market for 2021 and the years to follow.

Source: PwC Perspektywy rozwoju rynku e-commerce w Polsce, Gemius ecommerce w Polsce 2020

- According to data presented by IAB Polska/PwC AdEx, there was a 5% increase in the amount of money spent on advertising in 2020. There are no detailed data for the e commerce segment for Poland, but Zenith's analyses point to a global increase in the amount of e commerce spending on adverts in search engines and social media by 8% and 14% respectively. Taking the present rate of growth into account, Zenith predicts that in 2023, digital advertising will make up 58% of the total global spending on advertising.

- According to KRD Economic Information Bureau's report, as many as 61% of Poles limit their expenses due to the pandemic. This, in turn, affects the growth of recommerce, which means selling of pre-owned goods. Platforms and marketplaces like Allegro, OLX, Facebook Marketplace, or Vinted report record-breaking numbers of items sold on them. In its report titled "Resale Growth", ThreadUp predicts that the recommerce market will reach a value of USD 64 million (vs USD 28 million in 2019). The trend is also taken advantage of by global brands like Zalando. The brand offers their customers the Pre-owned service, which lets them buy and sell pre-owned goods. But apart from ten trend to save money, there is also another reason behind this situation – the increasingly growing awareness of the impact of our buying choices on the natural environment and local communities. As many as 42% of consumers claim that they care more and more about the origin of the products they buy. The number is set to grow. Since Poles have less money to spend, it naturally affects their expectations of the offering of online stores. Consumers are more price-sensitive, with 45% of them saying that online stores should be more consumer-friendly by offering discounts and other similar incentives.

- The growing number of online sellers translates into a growing level of competition, which fuels the development of solutions improving the overall online shopping experience. The year 2020 was marked by the development of the Same/Next Day Delivery service, which resulted in a dynamic growth of the segment of companies specialising in Last Mile Delivery. Some companies decided to offer an own service by teaming up with entities specialising in express delivery, an example being Allegro partnering with Pickpack. A similar solution has been tested by Grupa CCC. But there were also companies that followed a different path – like Biedronka or Żabka, who established strategic partnerships with Glovo. It is also worth mentioning the new companies that promise to deliver goods to the customer within 15 minutes of their order. These are companies such as JOKR or Lisek.

Source: KRD Economic Information Bureau Barometr Oszczędności, Kantar Barometr COVID-19,

- The year 2020 was most definitely a ground-breaking year for e commerce. Businesses focusing on online selling saw a huge window of opportunity open right in front of them. Those who did had not used this distribution channel before faced a great challenge. The pandemic is still not over, which makes our new shopping habits more lasting and established. According to OC&C's forecasts, the value of the Polish e commerce in 2023 will double compared to 2019 (reaching a value of PLN 104 billion).

- What we're bound to see in the years to come is an ever-improving shopping experience. Online stores will try to adapt to the requirements accompanying shopping in particular product categories. We can already see AR being more and more commonly applied in e commerce. Eobuwie offers its customers a solution called esize.me, which lets them choose shoes according to their actual size, and Asos has implemented a solution named See My Fit, which allows shoppers to view clothes on different body types

Industry organisations

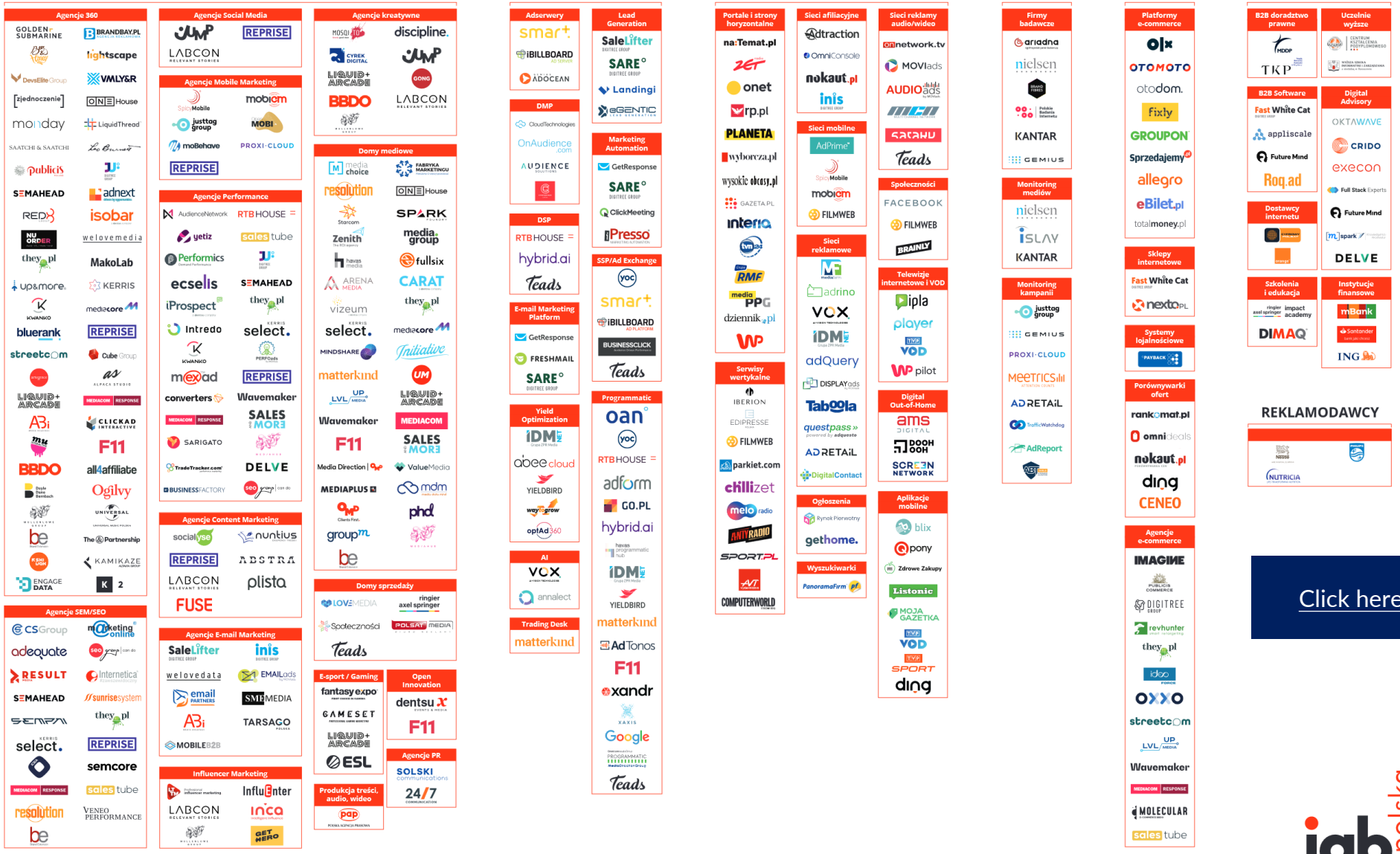
- IAB Polska | Learn more
- Chamber of the Electronic Economy | Learn more

Industry events

- Forum IAB | Learn more
- Forum Gospodarki Cyfrowej | Learn more
- E-commerce Trends Summit | Learn more
- Etrade show | Learn more
- InCommerce | Learn more

Reports

- Strategic report by IAB Polska | Download
- IAB Polska/PwC AdEx | Download
- „E-commerce w czasach kryzysu” | E-commerce Group at IAB Polska | Download
- Map of Internet entities | Download



Click here to download the map

Włodzimierz Schmidt

President, IAB Polska association

When the coronavirus pandemic hit Poland in March 2020, nobody expected it would mark the beginning of one of the biggest processes of digitalisation of retail trade we had ever witnessed in our country. The Poland-wide lockdown led to a natural shift of trade from the offline to the online domain. Those who had never shopped online made their first online purchases, and those who did have some experience with e commerce – started shopping online for products which became unavailable in brick-and-mortar shops. The coronavirus pandemic accelerated the already dynamic growth of Poland's e-commerce sector – a trend we had already seen over the past few years. Businesses focusing on online selling saw a huge window of opportunity open right in front of them. Over 2/3 of Poles decide to shop online using a smartphone. Market experts predict that the Polish e-commerce sector will keep on growing dynamically, which is a response to the growing needs and expectations of consumers and the increasing level of competition. The growth of e-commerce is definitely driven by digital advertising. At present, digital initiatives are usually the core of communications, and the internet offers us communication tools unavailable to other channels. The year 2020 in the digital advertising industry ended with yet another increase in the value of this market, which was accompanied by a special record being broken – for the first time in history, the amount of money spent on advertising exceeded 5 billion zloty. Market data show that the advertising market as a whole shrunk and that the majority of analogue formats reported decreasing numbers. However, the digital domain emerged from the situation unscathed, proving to be an unquestionable winner of the past year. We're optimistic about the further growth of e-commerce and online advertising – digitalisation in Poland has just gained momentum

IAB has been active on the Polish interactive, technology and advertising market since 2000. Since 2007 it has operated as the Association of Internet Industry Employers IAB Poland. Among the 230 members of the association are the largest Internet portals, advertising networks, media houses, interactive agencies and advertisers. IAB Poland is the fourth largest IAB in the world in terms of number of members. In 2012 the association received the MIXX Awards Europe for the best IAB in Europe.

Mission

The mission of the IAB is to support the activities of the participants of the interactive communication market and to popularise the Internet as an effective medium through promotional, research, educational and legal activities.

Want to learn more? | Visit iab.org.pl

10.6. EdTech

IN COOPERATION WITH

General information about Polish market | Number of schools | Demographics

- A total of 3.1 million pupils were enrolled in 14.4 thousand primary schools for children and youth. Public schools represented 89.4% of primary schools for children and youth.
- In the 2019/20 school year, there were 6,551 post-primary schools for youth (excluding post-secondary schools) with 1.5 million students.
- 513.9 thousand teachers (full-time equivalents) were employed in pre-primary establishments and all the types of schools in the 2019/20 school year.

Supporting factors

- Modernization of the economy, economic growth
- Dynamic modernization of schools
- Almost every school connected to a fast internet connection
- Expected large investments in digitisation in 2021-2023

Policy interventions

- School autonomy (since 1991)
- Central examinations (since 2002)
- Improving qualifications of teachers (late 90s), salary increases (since 2000)
- Programming, robotics, and 3D printing in curriculum

Introduction to Polish EdTech industry

The Polish EdTech industry has been dynamically growing for the last few years. Factors such as a relatively big domestic market, access to talented engineers, and a growing number of innovative educators create a positive environment for educational innovations.

The number of investments in EdTech start-ups is still small compared to other sectors however we can notice a significant increase of interest from angel investors and VCs in local EdTech companies. Public sector actively support the Polish EdTech ecosystem by co-financing VCs from Polish Investment Fund (PFR) and a number of other grants available. We can see that the Polish start-up ecosystem including EdTech is getting more and more attention from foreign investors.

The global success of local EdTech start-up Brainly and a growing number of foreign success stories from other local EdTech companies motivate young entrepreneurs to start new EdTech ventures, and we see a quick growth of the Polish EdTech ecosystem.

Main characteristic

- Relatively big domestic market (B2B and B2C)
- Access to engineers with a wide technological stack for software and hardware solutions
- Competitive labour market
- Numbers of local EdTech initiatives from NGOs
- High adoption of Polish EdTech solutions abroad

A map of polish EdTech companies

FUNDACJA edTech Poland

Worth to observe | B2C

- Brainly
- NovaKid
- SafeKiddo

Worth to observe | B2B

- Revas
- Funtronic
- Skriware
- Photon
- LiveKid

Click here to download the map

Mateusz Rybiński

President, EdTech Poland Foundation

Relatively big domestic market, access to talented engineers, and a growing number of innovative educators create a positive environment for educational innovations. There are several Polish EdTech rising stars with global successes. It motivates young innovators to start their own EdTech ventures, and EdTech is becoming our new national specialization.

FUNDACJA edTech Poland

The EdTech Poland Foundation was established in an agreement between educational experts and Polish innovative companies from the educational technology sector. The Foundation focuses on promoting the technological development of education in order to adapt teaching methods to the changing world. The events organized by the Foundation aim to bring together different worlds: education, public institutions, innovative business, and science. Its mission is to raise the skills of the teaching staff and to seed a passion for science and technology in students.

EdTech Poland Foundation advises several public institutions and ministries. It is part of the European initiatives such as European School Net and European EdTech Alliance

Main tasks of partnership:

- exchange of know-how, good practice and experience between edtech companies,
- representing polish edtech branch abroad and supporting its international expansion,
- creating a partnership platform between polish edtech companies,
- promoting good educational solutions both polish and foreign in Poland.

Want to learn more? | Visit edtechpoland.pl/en

10.7. eHealth, MedTech

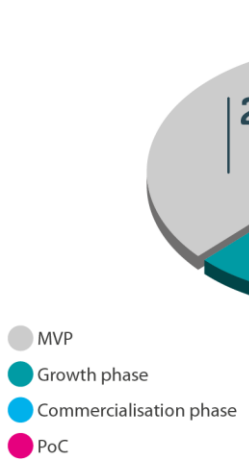
IN COOPERATION WITH

Top Disruptors in Healthcare 2021 report

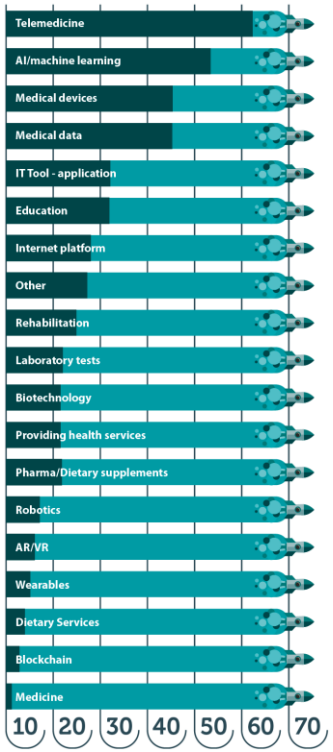
- Top Disruptors in Healthcare is the only report in Poland that comprehensively presents the Polish ehealth /medtech sector
- The main objective of the Report is to support the innovation ecosystem in healthcare, including establishing effective cooperation between startups and other entities. This is not only conducive to the development of an innovative economy but is also of particular importance in the era of combating the Covid-19 pandemic and its long-term consequences
- The Report corresponds, among the other things, to questions about new, interesting solutions in the medical sector and their level of advancement, who and how can use these solutions, as well as what are the needs of startups and the challenges they face. Answers to questions about the current needs of startups, the solutions they offer, as well as financing and foreign expansion enable the presentation of this information in a structured and consistent manner
- The authors identified 400 startups, which editorial team members attempted to contact. 115 startups filled out the survey and were included in the Report.
- The Report was created by the team of Young Healthcare Managers and the Polish Hospital Federation (PFSZ)

Click here to download the map

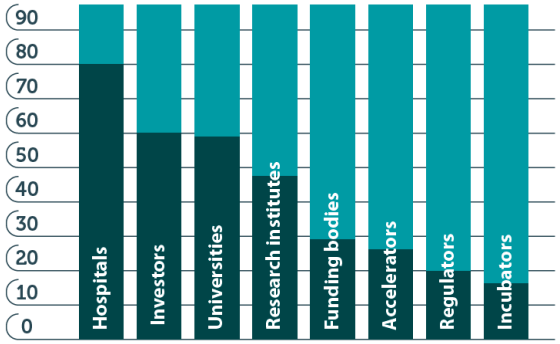
Level of development of the startup



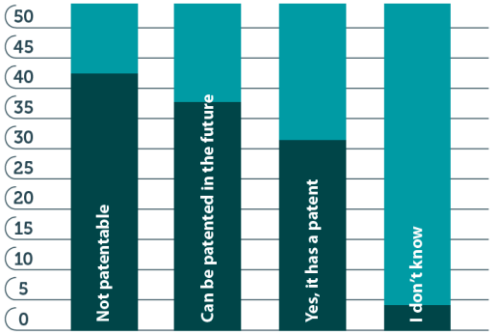
Areas in which the startup operates



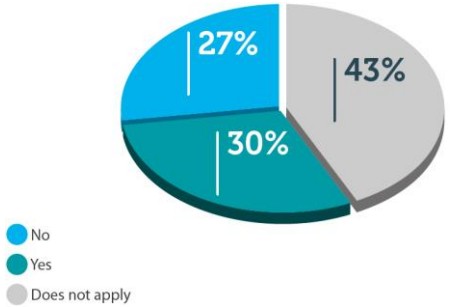
Indicate organisations which your startup cooperates most frequently with



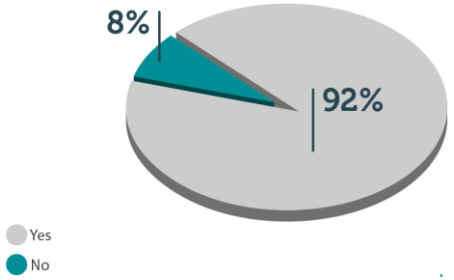
Does your product can be / is already protected by a patent?



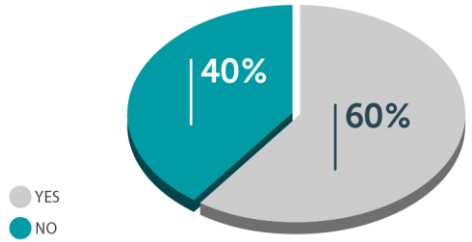
Does your product /service have CE certification



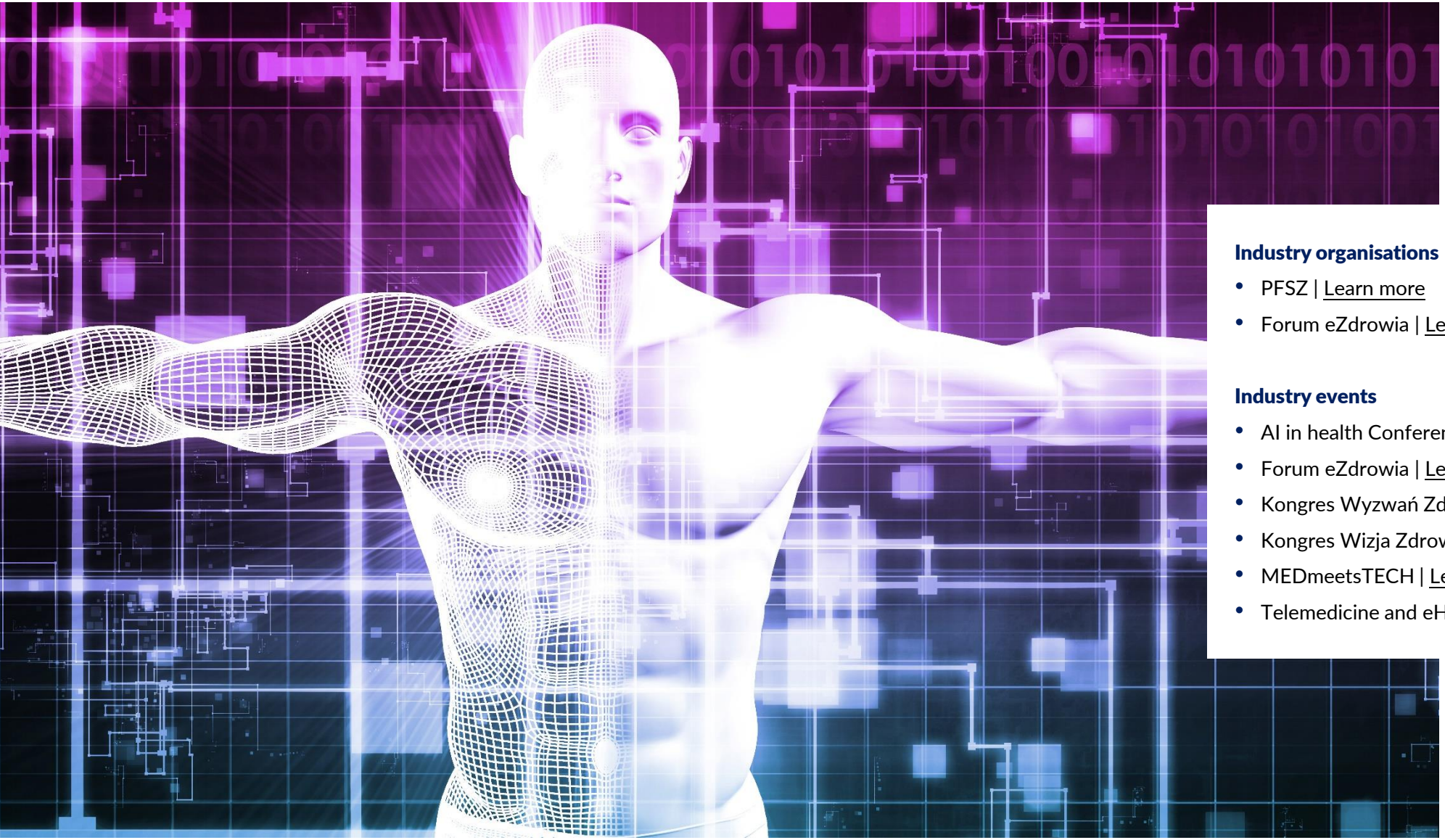
Do you have a business model established?



Do you generate recurring income from the sale of the main product / service?



- **AILIS Breast Cancer Prediction Technology** | AILIS is used for early detection of women's breast cancer lesions. It is a comprehensive system for monitoring breast health, which allows for detecting breast abnormalities at a very early stage of their development, and also predicting the likelihood of such changes occurring in the future. The system consists of a device based on the Parametric Dynamic Imaging (hardware) method and AI algorithms. | Learn more
- **Data Lake** | A system based on blockchain technology making it possible to transfer, manager and use sensitive data in a safe and transparent manner. First implementation is planned in the healthcare sector, to enable medical data exchange on the basis of patient's consent. | Learn more
- **Infermedica** | Currently, the main solution of Infermedica is the so-called checker symptom, which enables patients to take part in a preliminary medical interview. Artificial intelligence suggests the most appropriate action to be taken in a given case. Depending on the severity of symptoms, a doctor's visit or call, self-care or visit at the emergency ward may be recommended | Learn more
- **MedApp** | The company offers unique software-related solutions supporting image diagnostics and new generation digital medicine services. CarnaLife System is an advanced digital medicine platform that enables the physician to assess and monitor the health state of patients with different diseases and to consult remotely at any time of the day and in any place. And CarnaLife Holo is an innovative technology of three-dimensional visualisation of imaging medical data. | Learn more
- **medICE** | It's a tool for communication among healthcare sector participants. The tool will enable patients to be consulted quickly, will facilitate obtainment of the second opinion and will increase competences while increasing time and cost efficiency, thus falling within the Value Based Healthcare (VBHC) concept. | Learn more
- **StethoMe** | It's a first system to detect respiratory abnormalities, which is based on medical algorithms cooperating with wireless stethoscope and a dedicated application. The solution is designed to monitor and handle patients with chronic respiratory diseases remotely, with particular reference to the asthma population. | Learn more



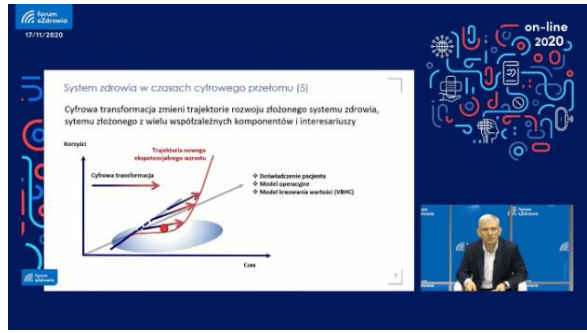
Industry organisations

- PFSZ | Learn more
- Forum eZdrowia | Learn more

Industry events

- AI in health Conference | Learn more
- Forum eZdrowia | Learn more
- Kongres Wyzwań Zdrowotnych | Learn more
- Kongres Wizja Zdrowia | Learn more
- MEDmeetsTECH | Learn more
- Telemedicine and eHealth 2021 | Learn more

1000+ Attendees | 100+ International & Polish Speakers
70+ Partners | 1 MedTech Hackathon



e-Health Forum – leading topics

- 2016 | Strategic challenges and interoperability standards in Health IT
- 2017 | Strategic challenges in digital transformation in healthcare
- 2018 | Digital transformation in healthcare
- 2019 | Digital transformation and globalization in healthcare
- 2020 | Digital transformation at turning point in healthcare

The e-Health Forum was born out of need for involvement and cooperation as we are entering the new digital universe. We have always believed that digital solutions may be applied to improve health and healthcare. Currently, in times of post covid-crisis, this has been relevant more than ever, but yet the fundamental question has been rephrased to - “how can we benefit from available digital solutions - NOW!”

We are promoting the patient/human-centric concept of the health system and co-operation of stakeholders to build the new normal in healthcare based on the transformation potential of digital health.

Artur Pruszko

Director, e-Health Forum

forum eHealth

Learn more

Ligia Kornowska

Managing Director, Polish Hospital Federation
Leader of AI in Health Coalition

In Poland we are witnessing technological changes in all fields, but most importantly in health care system. Polish medical startups are eager to create innovative solutions that impact on the development of scientific research and increase safety and precision in patient care. Just lately The Council of Ministers adopted the "*Policy for the Development of Artificial Intelligence in Poland*", which is a harbinger of revolutionary changes in the health care system. As Polish Hospital Federation and AI in Health Coalition we support new medical technologies and we are taking part in creation of new initiatives, such as idea of data donation. Our goal is to popularize artificial intelligence tools in the Polish health care system through both regulatory and technological activities.

Polish Hospital Federation - the largest organization associating hospitals in Poland, regardless of their ownership structure, size or model of operation. It works for better financing of hospitals, increasing the importance of hospital management, the safety of patients and hospital employees, as well as for quality, good management practices, education and good legislation.

Want to learn more? | Ligia.Kornowska at pfsz.org | Visit pfsz.org

AI in Health Coalition - The first organization in Poland that brings together the most important healthcare stakeholders interested in the development of AI in medicine. The coalition currently has over 30 members, bringing together the most important technology and pharmaceutical companies, universities, patient organizations and startups, which through a number of projects work for the effective and safe implementation of AI in health in Poland.

Want to learn more? | biuro at aiwzdrowiu.pl | Visit aiwzdrowiu.pl/index.php/eng

MEDICAL RESEARCH AGENCY

About the Agency

- The Medical Research Agency (MRA) was established in 2019 with a budget of 50 million PLN in the first year of operation. Agency, till end of 2020, already spent more than 500 mln PLN. The budget in 2028 it is expected to be around PLN 1 billion. The body will be financed by the state budget and a write-off from the National Health Fund (NFZ) in the amount of 0.3% of its revenues. However, the money from the NFZ write-off will be used only for non-commercial clinical studies. The Agency may also be financed from other sources, such as donations, the EU budget, international research programmes or ABM's business activity in the area of publishing or commercialisation of scientific research results
- MRA is state agency responsible for development of scientific research in the field of medical and health sciences. MRA is an entity whose purpose is to build an innovative healthcare system in Poland. The Agency functioning shall also have concrete benefits for patients - it will help to assess which new medical technologies and therapeutic methods should be used to meet the society's needs.
- The Agency implements one the first public grant programs with financing for non-commercial clinical trials in Poland. The research funded by MRA creates an opportunity for Polish patients to access the latest technologies, as well as a chance for Polish scientists to participate in global research.
- The Agency's main task is to lead analytical activities in the scope of assessment of undertaken decisions and their influence on the costs of functioning of the healthcare system. The compiled analyses will enable us to present specific solutions that will allow the healthcare system to function in a more efficient way.

Areas of activity

- The Medical Research Agency (MRA) was founded in 2019 in order to improve the use of potential for development of medical research and health sciences, particularly in the scope of non-commercial clinical research that now constitute about 2 percent of all the registered trials in Poland. For comparison, in Western European countries the ratio amount to about 40 percent. The Agency aims at increasing the percentage of non-commercial clinical research to the level of 20-30 percent.
- The main goals of non-commercial clinical research development shall include searching for new methods of treatment in the most pressing areas of medicine: oncology and cardiology, and also in the area of rare diseases, as often they are outside the area of interest of private companies. Ensuring the patients with oncology, cardiac and rare diseases the opportunity to participate in clinical research is essential for the whole health care system. In the future it will result in an access to modern medications or in lowering the costs of treatment of particular diseases.
- The research conducted by the MRA will be used to assess effectiveness and safety of medications and technologies that have already been on the market, but also to withdraw the technologies that are no longer effective. Verification of effectiveness of the selected technologies in the conditions of the Polish health care system will make it easier for the bodies responsible for reimbursement and tariff setting to arrive at decisions in this area.
- The Agency will also support development of population-based and epidemiological studies in various areas of public health. The collected data will be used to prepare expert analyses that will define the causes of various incidence of particular diseases or of mortality ratios due to selected diseases in individual regions of Poland. Those analyses will be based on own, national research, not on general statistics, as before.

The Agency's core task is to ensure proportional funding for medical sciences, innovation and health sciences in all the relevant areas:

- basic research,
- research and development actions,
- clinical research on medicinal products and medical devices,
- epidemiological studies,
- studies on management,
- development and optimisation of health care system.

The Letter of Intent with pharmaceutical companies

- Pharmaceutical companies, which signed the letter: Amgen, AstraZeneca, KCR, Roche Poland, Bristol-Myers Squibb, Takeda Pharma, Eli Lilly Poland, Janssen Poland, Pfizer Poland, Mylan Healthcare, MSD Poland, Medtronic Poland, Novartis Poland

Radosław Sierpiński

President, Medical Research Agency,
Prime Minister's High Representative for Development of Biotechnology

The establishment of the MRA in Poland is a very important step in the development of Polish medicine and the health care system. Similar agencies have existed in other countries for many years. In creating the Medical Research Agency, we followed the example of the National Institutes of Health in the USA, the Medical Research Council in the UK and the French INSERM.

Patients are the ultimate beneficiaries of these solutions. Thanks to non-commercial research we gain knowledge, but patients benefit from it. The first area of MRA's activity will be clinical research. The second - scientific research, concerning commercialisation of new technologies created by Polish scientists. The idea is to provide patients with new therapeutic methods. In Poland, many interesting projects are conducted, e.g. in the field of new therapies, but due to the lack of a financing path, they are not brought to the stage of testing on patients. It is therefore not possible to market the product. Patients do not benefit from these innovations, as the ideas of scientists are sold abroad. The native product returns to Poland, but the patient buys it for a much higher price.

Population studies are another area of interest for ABM. If we are able to plan a large study, e.g. in the field of cardiology, antibiotic resistance, hospital infections or the impact of smog on the population of Silesia, we may be able to work out new systemic solutions. MRA is also analytical research. For many years, we have been trying to shorten the queues to specialists, but we still do not have reliable data which would explain why, for example, the queue to endocrinologist in one province is much longer than in another. There is certainly the problem of lack of staff, but there may also be other reasons for this situation.

Want to learn more about MRA? | kancelaria at abm.gov.pl **|** Visit abm.gov.pl/en

WARSAW HEALTH INNOVATION HUB

About Warsaw Health Innovation Hub (WHIH)

- It's a joint project of the Medical Research Agency (ABM), leading companies from the sector of medicine, pharmacy, biotechnology and EIT Health, which is the operator of a Strategic Partners project. WHIH was established in June 2021.

AstraZeneca Microsoft polpharma Roche eit Health Funded by the European Union AGENCJA BADAŃ MEDYCZNYCH

- The goals of WHIH are to create innovative medical, technological and legal solutions to improve patients' health and increase the efficiency of the Polish health care system, in the following strategic areas:
  - pharmaceutical innovation, including medical technology,
  - innovation in medical devices,
  - health IT Solutions.

WHIH in nutshell

- It's is a unique platform in Central Europe for cooperation between business, public and scientific entities to strengthen Poland's role as a place for creating medical and biotechnological innovations and to increase the resilience and stability of the post-pandemic health care system. This is the first step towards the creation of the Polish Medical Valley based on the strong academic base that Poland has.
- WHIH as a place for exchange of experience, flow of ideas and establishing and shaping proper relations between business, public and scientific entities cooperating with each other within the biomedical sector, will serve to recommend and evaluate emerging innovative solutions, taking into account the health security of recipients and improving the quality and efficiency of the Polish health care system. The unique concept of the WHIH will create conditions allowing for rapid transformation of ideas into products, processes and services, taking into account the development interests of the Polish biomedical sector and the need for Poland to be independent in terms of innovative medicines and medical products.
- An element supporting the WHIH concept will be its own programs created and financed by WHIH Strategic Partners aimed at creating medical and technological innovations serving the development of the Polish biomedical sector and pragmatic use of innovations for the purpose of raising the standards of provided health services

WHIH objectives:

- Strengthening the Polish biotechnology, pharmaceutical or medical sector with particular regard to their innovation and their impact on health security of recipients;
- Develop recommendations and analyses that form the basis for MRA's own pilot programs and proceedings for noncommercial research projects under the authority established by the Act;
- Implementation of tasks aimed at the implementation of innovative medical and technological solutions developed by the partners (WHIH Board) or by the MRA in the framework of the implementation of this Agreement;
- Development of recommendations and studies for innovative medical and technological solutions in health care in order to implement them in the health care system on a central or local level.

Representatives of ministries, public institutions and agencies, patient organizations and the business sector participated in the preparation and development of the structure, assumptions and model of WHIH activities.

Want to learn more about WHIH? | Visit whih.abm.gov.pl

Markus Sieger

CEO, Polpharma Group

I'm glad Polpharma was invited to the project in order to co-create this initiative and continue working as a strategic partner of WHIH. I am convinced that Hub will play an important role in the development of the Polish medical sector, responding to current and future challenges in the health sector, such as the aging of the population, the spread of infectious and chronic diseases, and rising costs compared to limited resources. Polpharma, with over 85 years of experience in building successful business cooperation, is ready to share its know-how and support initiatives integrating scientific knowledge with business and public institutions. As a leader of the domestic industry, we can effectively support the needs of Polish patients, building added value for the health care system, especially in terms of increasing drug safety and achieving goals in accordance with the Pharmaceutical Strategy for Europe. Our vision and strategy for building an effective healthcare system includes: prevention, patient-centeredness, and collaboration across the entire value chain: from prevention to effective treatment.

Dr Mark Loughran

General Manager, Microsoft in Poland

Establishing the Warsaw Healthcare Innovation Hub is a completely new approach to the development of healthcare in Poland. It is a combination of technology and human ingenuity that will result in innovations that serve us all. Microsoft's aspiration is to support the development of Polish Digital Valley, and digital transformation of the sector, being one of its key pillars, will bring benefits not only to the selected ones, but to all participants of the health care system in the country.

10.8. FinTech, InsurTech and LendTech

IN COOPERATION WITH

FIN TECH POLAND

lendtech

VISA

Banks

The Polish banking sector is an open system. Two of the 10 largest banks – namely: mBank SA and Alior Bank SA – entered the market fairly recently (2000 and 2008, respectively) without a legacy IT architecture dated tens of years back and instead with a bunch of fresh ideas to conquer the market with. Currently the system consists of 596 entities, including 30 national commercial banks, 36 divisions of foreign credit institutions. More than 149.000 people work in the banking Industry.

Polish banks started investing in the development of online and then mobile channels very early on (starting with the first pilot mobile apps in 2000), and eventually became one of most innovative financial institutions in Poland. Nowadays biometric-based login has become a standard solution, along with mobile payments, application process for banking products and even access to select non-banking services (e.g. public transportation tickets, parking tickets or e-government services). Banks are constantly working on new technologies - most recently PSD2-based account aggregation services, chatbots or smart PFM Solutions.

Lending sector

The non-banking lending sector consists of 550 lending institutions allowed to grant consumer credits (loans), with 65 biggest companies covering 90 % of the market. Lending institutions fill the gaps left by banks - i.e. they offer low value and short term loans and accept debtors with higher risk levels.

2019 in the lending sector in numbers:

- +2.5m more than 2.5m loans
- 2m about 2m customers
- 6,8bn total amount of loans in PLN
- 5,000 PLN value of most (90%) loans

Payment institutions

Payment and e-money institutions are conducting activity in the scope of providing payment accounts, granting a payment credit and executing or facilitating money transfers. The PSD2 Directive, implemented in 2018, introduced additional payment services - Payment Initiation Service and Account Information Service (AIS). Payment services are used mainly in the widely understood e-commerce, marketplace platforms, gaming, for p2p and corporate payments as well as paying for public services. In 4Q 2020 payment institutions have executed more than 575,25m transactions which value amounted to 69,03bn in PLN

In Poland, there are currently

- 42 payment institutions,
- 1 e-money institution,
- 121 small payment institutions,
- 10 providers of AIS

DeFi and DLT services

Polish or Polish-originated Fintech are very active in the decentralized finance area. Entities such as Ramp (fiat to crypto gateway), Coinswap (crypto exchange) or Coinfirm (crypto compliance) has stormed and significantly changed this business sector. However, the sector is still far from being saturated and new FinTech may appear and achieve great success.

Regulatory framework

The financial market in Poland, as well as in other Member States of the EU, is a strongly regulated area, which guarantees the security of customers, as well as the stability of the entire financial sector and its individual entities (which became apparent, among others, during the global crisis in 2007/2008).

These regulations are derived primarily from European Union law which considerably simplifies compliance with regulatory requirements in other countries of the EU market.

These regulations are supported by guidelines, recommendations and positions of European bodies (EBA, ESMA, EIOPA) as well as Polish supervisory authorities, such as the Financial Supervision Authority (KNF) and the National Bank of Poland (NBP).

Entities granted a license/permit by KNF to operate in Poland as banks, investment companies, payment service providers and insurance companies may start their business activity in other countries of the European Economic Area on the basis of the so-called passporting.

The passporting procedure allows to operate outside the territory of Poland through a branch (exercising the EU freedom of establishment) or as part of cross-border activity without opening a branch (exercising the EU freedom to provide services).

SUPPORT FOR FINTECH

Accelerators

FinTech accelerators represent specialised organisations (and sometimes entire ecosystems) supporting the development of financial innovations and are established by mature financial institutions (in particular banks) or consortia of such entities. Offers of accelerators are addressed to FinTechs at early stages of development, most often at the stage of planning or implementing the first commercial implementations of their products.

The benefits of participating in an acceleration programme are mutual:

- FinTechs receive substantive, organisational and often financial support in launching their activity, they also have the opportunity to present and validate their solutions in cooperation with institutions cooperating with the accelerator; participation in the programme also legitimises FinTechs in the eyes of their potential clients and investors,
- Financial institutions gain access to innovative solutions and ideas, they have the opportunity to be the first to use the products offered by FinTechs and to invest in their activities or to set up a consortium offering the product to third parties

KNF | Financial authority

VIRTUAL SANDBOX KNF

Since January 2018, entities have had the opportunity to benefit from the Innovation Hub Programme operated by the UKNF.

As part of the Programme, the representatives of the UKNF inform the entity (free of charge) about the way in which the provisions regulating the functioning of the financial market should be applied in the context of the entity's business activity and they dispel any legal doubts it may have. The Programme also offers a direct working meeting at the seat of the UKNF with representatives of the supervisory authority.

Created and managed by the UKNF, Virtual Sandbox is a safe IT environment where companies can test their innovative payment solutions based on the PSD2 Open API standard (the Polish API standard complies with).

Want to learn more? Click here

Cashless Payments Support Program 2018 – 2021

- The result of cooperation between Polish ministries, the Polish Bank Association (ZBP), Mastercard and VISA
- Free POS terminal installation
- Participation in the Cashless Poland programme is free of charge. Entrepreneur does not incur any costs until the turnover on particular terminals reaches PLN 100,000 within 12 months
- Outcome of the program | Learn more
    - 280 thousand entrepreneurs in the Cashless Poland programme
    - 400,000 terminals installed
    - More than 10 thousand payment terminals from the Cashless Poland programme operate in public institutions
    - Since the beginning of the Programme, the installed terminals have carried out transactions worth a total of PLN 30 billion.
- over 1 million POS terminals in Poland, all of them supporting contactless and smartphone payments

Poland - one of the leading countries in wearables transactions in the world

- Leader of cashless payments in CEE region
- 5th in Europe and 6th in the world in the number of people who pay for purchases using “wearables” such as smartwatches or fitness bands

Source: Sources: Polska Bezgotówkowa, Cashless.pl; nbp.pl, June 2021

Poland has also attracted numerous financial sector players to establish their business services centers on its territory

Revolut

One of the key European challenger banks – although having headquarters in UK, holds its biggest IT, Customer support and compliance services center in Kraków and employs about 700 specialists.

Map of Polish Fintech 2021

In total, the map of Polish fintech 2021 includes 312 companies, which is a record result in the four-year history of the project by cashless.pl.
As in the previous year, payments are the most numerous sector represented on the Map of Polish fintech 2021. The provision of various payment services is provided by 66 fintechs - last year there were 55. The second on the list is the "software suppliers" sector. There are 28 companies of this type on the Map. There are 20 companies providing financial management services, and 17 personal finance services - 17. The same number of fintechs, other than loan companies, deal with various services in the area of loans and credits.

Click here to download the report

BLIK

6 years on the market

BLIK is a mobile non-card payment system and payment scheme licensed and supervised by the National Bank of Poland. BLIK is NOT a separate wallet, NOT a separate mobile application. It operates as an intermediary between issuers and acquirers.

6 largest Polish banks are BLIK shareholders:, and Mastercard is BLIK's 7th shareholder since 2020.

BLIK is a part of mobile banking solutions.

BLIK functionalities are embedded within mobile banking applications – 15 banking applications in Poland.

Today BLIK is available for 97% of Polish mobile banking apps. Clients don't need a payment card or wallet to pay with BLIK. All they need is a phone with Internet access and your bank's app.

Alior Bank · ING · Millennium bank · mBank · Bank Polski · Santander · Getin Bank · Crédit Agricole · Bank BPS · Noble Bank · BNP Paribas · Bank Pekao · SGB Bank SA · nest Bank · envelo bank

All you need is a phone

to pay and settle up, always and everywhere

Security

every transaction must be approved in the banking app

Simplicity

simply enter the BLIK code and approve the transaction

Universality

You can use BLIK to pay in stores, withdraw cash from an ATM and make settlement with others by transfer to a phone.

POLISH MOBILE PAYMENTS SCHEME

ABOUT BLIK

BLIK is a popular Polish fully mobile payment scheme, one of the first on the European market, with a unique model of cooperation between banks.

The owner of the BLIK brand is **Polski Standard Płatności** (Polish Payment Standard - PPS). The shareholders of PPS are Alior Bank, Bank Millennium, Santander Bank Polska, ING Bank Śląski, mBank, PKO Bank Polski and Mastercard.

BLIK is a system embedded in banking applications and covered by all major Polish banks. Currently, over 95% of all customers of Polish financial institutions have the option to use BLIK in mobile banking applications.

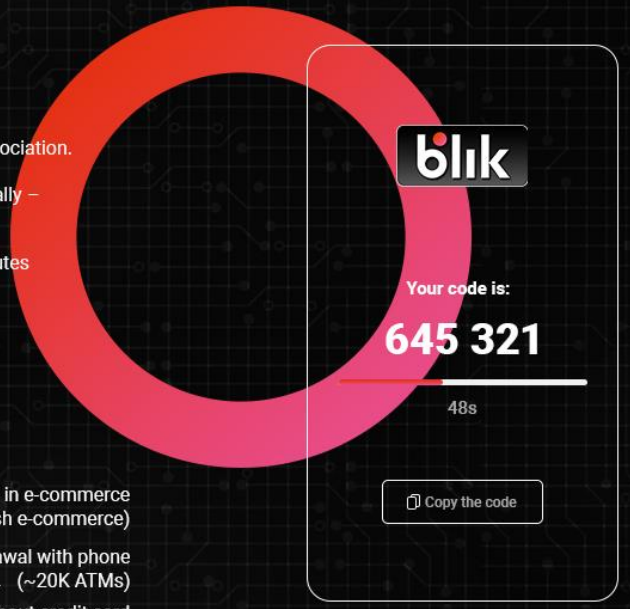
BLIK GOES GLOBAL

- PPS is a member of European Mobile Payment Systems Association.
- In 2021 BLIK became contactless and will be accepted globally – thanks to the partnership with Mastercard.
- Cooperation with partners such as PPRO and Adyen contributes to growing the global e-commerce acceptance network.

HOW TO USE IT?

One BLIK, numerous possibilities

ONLINE PAYMENTS	Convenient, simple and fast payments in e-commerce (100% of Polish e-commerce)
CASH DEPOSITS AND WITHDRAWALS	ATM withdrawal with phone (~20K ATMs)
IN-STORE PAYMENTS	POS payments without credit card (702K terminals)
MOBILE TRANSFERS	P2P instant payments in real time (8M Apps P2P ready)



BLIK CODE - INDIVIDUALLY GENERATED ONE-TIME 6-DIGIT STRING AVAILABLE IN BANK'S MOBILE APP.

6 YEARS OF BLIK IN NUMBERS

7 MILLION
active users by the end of 2020

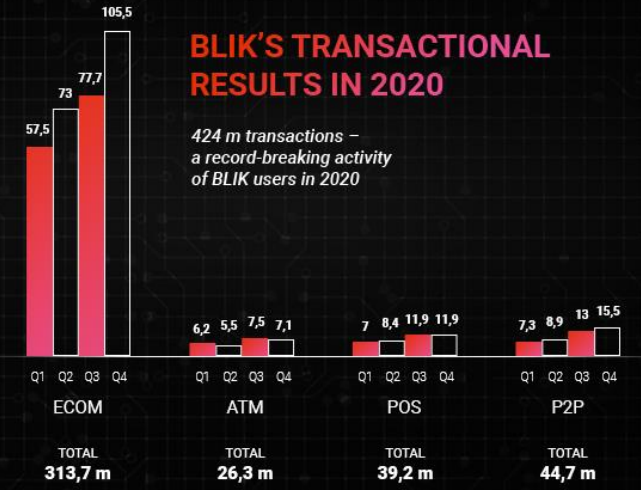
777 MILLION
transactions

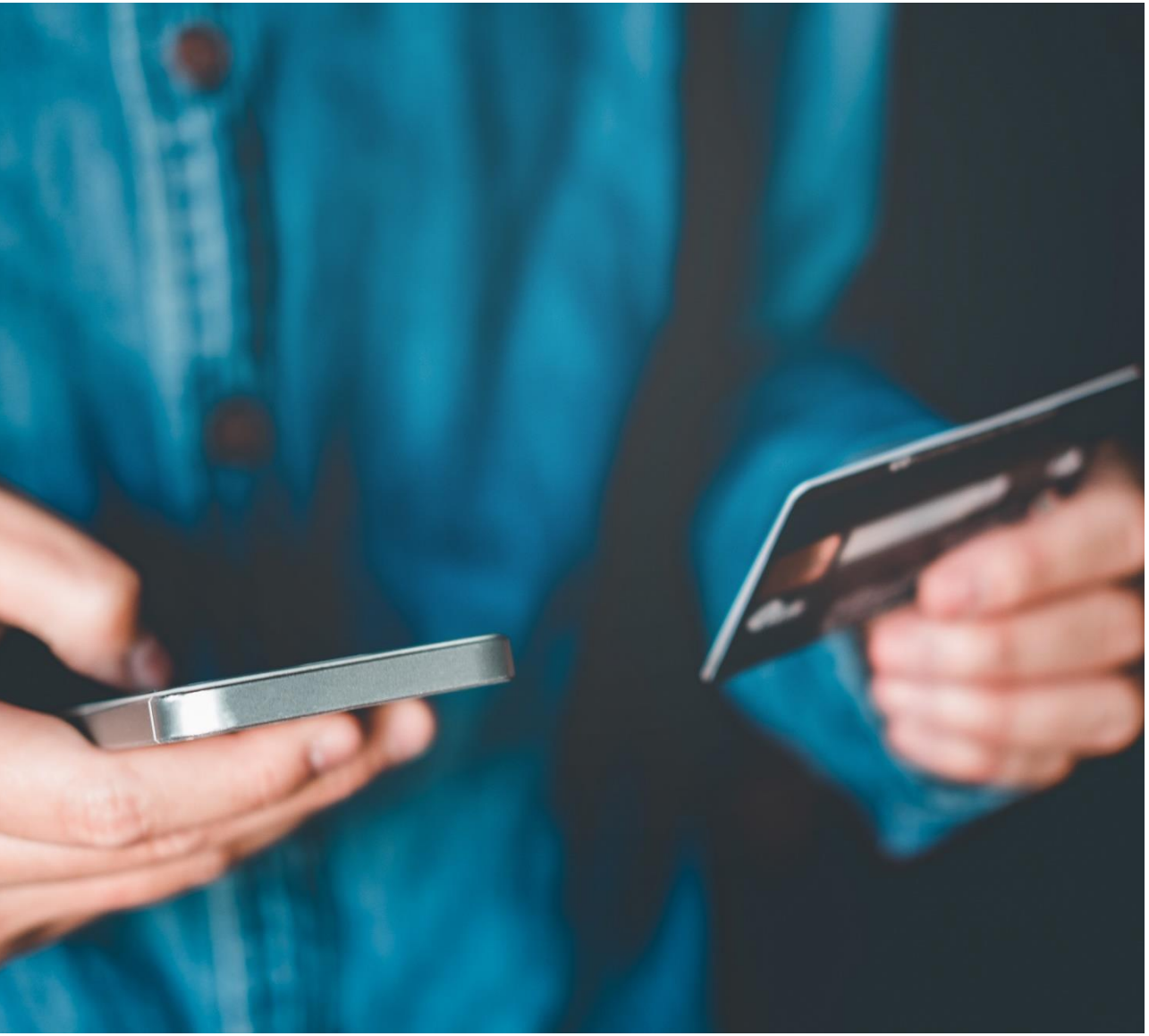
15 BANKS
over 95% of all clients of financial institutions in Poland

104 BILLION PLN
value of all transactions

BLIK'S TRANSACTIONAL RESULTS IN 2020

424 m transactions – a record-breaking activity of BLIK users in 2020





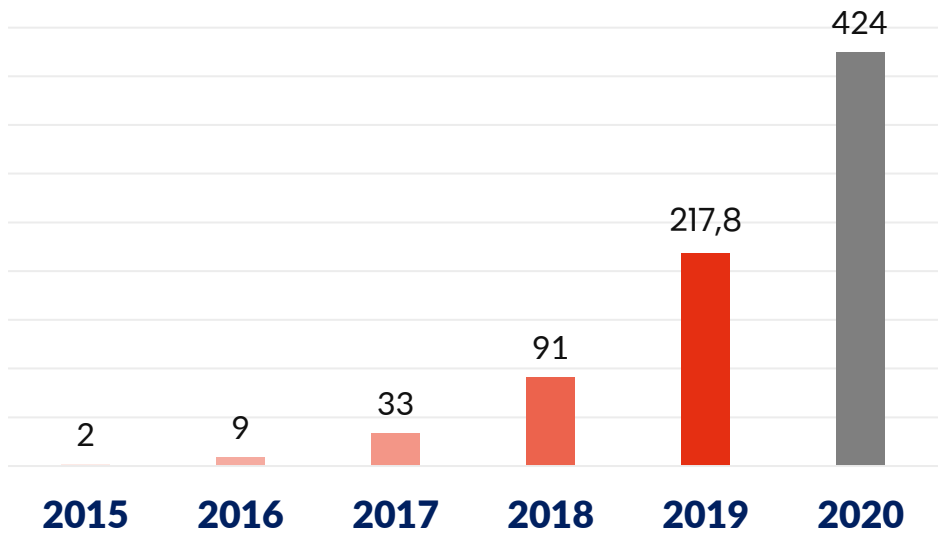
BLIK

unique Polish mobile payment system

BLIK

was created in 2015. Since then we observe an amazing growth of BLIK's usage. In 2020 we have reached over 400 m of transactions and 777 m in total since its creation.

We expect to reach 1 Bilion of transactions next quarter.



Cashless Congress is a meeting place for representatives of the world of science, business and public administration to exchange views on legal regulations, new trends and innovative solutions for the cashless payment Industry | Learn more

European Financial Congress held annually in Sopot consists of pragmatic debates and speeches from experts in the fields of business, politics and academia. These are held at specialist conferences, congresses, sector-related seminars and thematic steering committees and meetings, organised by the Gdansk Institute for Market Economics and the Gdansk School of Banking | Learn more

Electronic Economy Congress is a meeting bringing together business, administration and academia. During EE participants discuss how to build a modern business and an efficient state without exposing themselves to the risks of digitisation and globalisation. EEC raised issues such as cyber security, new technologies against exclusion, the importance of seniors in society, and strategic digital programmes of the state and business. During the Congress, the results of the Electronic Economy Congress Competition are announced. Honours are awarded to individuals, companies, local government units and public administration bodies in four categories | Learn more

Impact Finance is the voice of top representatives of the financial world and a meeting of leaders in the formula of online networking. The biggest names in banking, payments, technology and e-commerce, and tens of thousands of viewers online. Discussions on the most current topics, premiere reports, workshops, startup pitches | Learn more

Fintech Digital Congress - If you want to know what drives the industries and what the trends are in the development of technology in the financial and insurance sectors, the FinTech & InsurTech Digital Congress event is the key congress on the map of branch events. Digitalization, technological progress, anticipation of changing digital consumer demands, innovative business models, regulatory changes and market consolidation of services are fueling the dynamic development of the fintech industry, which is increasingly affecting the current and future arrangements of the financial services market. It's an elite forum for the exchange of thoughts and creating strategic partnerships, deriving from international experience. | Learn more

Lendtech Congress is intended for innovative lenders and organisations that create the digital lending ecosystem. The event is dedicated to entities that offer lending in a fast, innovative and secure way | Learn more

Paweł Widawski

CEO, Fintech Poland

In the new reality - defined by the effects of the pandemic and the deepest geopolitical changes of the last 30 years - Poland has more to offer in the FinTech sector than could have been expected a dozen or so months ago.

A strong and innovative banking sector, an excellently educated team of experts, a resilient FinTech ecosystem, strong presence of FAAMA companies (Facebook, Apple, Amazon, Microsoft, Alphabet), a well-developed sector of shared services centres developed by global financial institutions as well as more and more innovation-friendly financial supervision supported by the EU membership – all that constitutes a unique combination that determines the strength of Poland as an important FinTech hub.

FIN TECH POLAND

FinTech Poland is an independent organization whose goal is to support the development of the financial innovation sector in Poland by building a culture of dialogue between market participants and regulators, conducting market research and promoting the Polish fintech sector abroad.

We support the development of innovative, transparent, sustainable, innovative and open financial sector being one of the leading engines of the Polish economy. Fintech Poland is also a founding member European Digital Finance Association.

Our mission:

- to stimulate development of the financial innovation sector in Poland
- to promote Polish fintech sector abroad
- to represent Polish fintech to the various stakeholders in the national and international ecosystem: public authorities, regulators, investors, investors, financial institutions, foreign associations, , educational institutes.
- to advocate for more affordable, inclusive and secure financial services
- to research key areas of financial innovation in order to highlight new oportunities and risks (think tank)
- to educate customers and ecosystem
- to support a vision of new generation financial sector in Poland

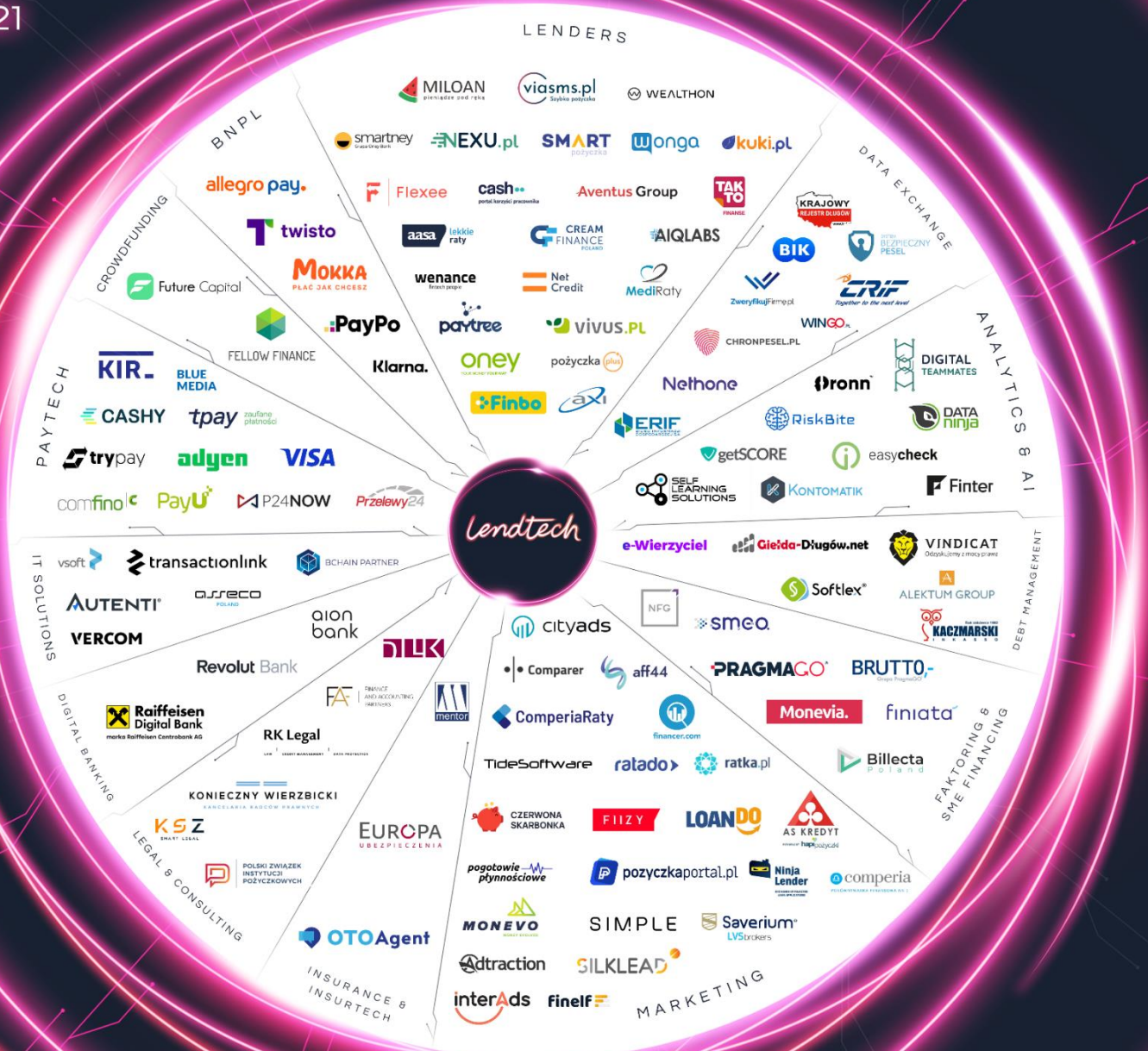
All the players wishing to support our aims are welcome for cooperation!

Members and Partners benefit from our network, business and legal expertise as well as deep understanding of fintech ecosystem. We work to create synergies and development opportunities for ecosystem members in Poland and abroad.

Want to learn more? | info at fintechpoland.com | Visit fintechpoland.com

POLISH LENDTECH MAP 2021

by Lendtech Foundation



www.lendtech.pl

Łukasz Piechowiak

CEO, LendTech Foundation

The Polish Lendtech Map is a unique list of entities that make up the lendtech ecosystem in Poland. There are as many as 106 companies on the Map prepared by the Lendtech Foundation in 2021.

The picture of the lendtech sector in Poland is very diverse. It is created not only by the lenders themselves, but also by providers of fintech, paytech, data exchange, IT, BNPL, AI and marketing services.

This shows the strength of the Lendtech industry in Poland as a developed ecosystem that creates not only thousands of jobs - a space for human talent development, but above all presents the industry that provides services directly and indirectly to millions of Poles. All this using the most modern and extremely sophisticated fintech technologies.

Lendtech

Lendtech – another stage of fintech revolution in Poland. A talent factory and a foundation of digital transformation

You may be still ignorant of what lendtech is, but it will soon turn into a business worth several billion PLN and you will be unlikely to find a Pole not using the so-called lendtech services. This is another stage of FinTech revolution which has been changing the financial sector for the better.

Poland is the 6th EU economy with a society extremely susceptible to innovations related to financial technologies (Fintech). In this field there are many Polish talents. And because of fintech solutions, in the time of pandemics, shopping was not only possible but it was also efficient and safe. The sector of financial technologies enters another development stage in Poland – lendtech solutions, viz. in the field of lending technology – and it will play a more and more important role. Currently, the value of the lendtech sector is estimated at more than 6 billion PLN, and it will increase.

On the Polish Lendtech Map 2021 prepared by the Lendtech Foundation, we have over 100 entities creating the Lendtech ecosystem in Poland. Only last year, digital lending generated EUR 1.5 billion in revenues, and although the market struggled with the economic lockdown and with the negative effects of the pandemic, it is one of the most promising areas for fintech development in Poland. Why? Because we are talking about the potential of up to 5 million customers actively using digital solutions. It is particularly visible in the context of synergy with the e-commerce industry, which is growing at a double-digit rate in Poland.

What is lendtech?

The term 'lendtech' comprises not only lenders and providers of Buy Now Pay Later (BNPL) services, but also of AI and anti-fraud technologies, data exchange as well as marketing and insurance services. Digital lending constitutes a wide range of specialized companies whose technologies and know-how belong to more valuable assets in our society and decide about the innovative character of Polish economy.

Innovative lenders cooperate more and more with the e-commerce branch by providing them with such services, like for example, BNPL services or a possibility of breaking down the installments in a simple and intuitive way by means of mobile applications. On the other hand, 18 million of users of mobile bank applications actually constitute solid digital foundations.

Digital lending attracts investors globally. Poland is good place to invest

Digital lending experiences a global growth and attracts investors – according to a report of CB Insights 'State of fintech' - only in the 2nd quarter of 2021 the VC [1] founds the in digital lending exceeded 6 billion USD - viz. it was higher than in the entire 2020. Unfortunatelly, as of yet, investors avoid Poland. We are pretty sure that it is only matter of time.

However, Lendtech in Poland will develop together with e-commerce which now has a 9% share in retail trade. This share is likely to double in subsequent years. And this means that lendtechs will play a more important role since they will provided Poles with safe and convenient financing.

Lendtech Foundation is an organization whose mission is exactly to support this process.

Want to learn more? | Visit lendtech.pl

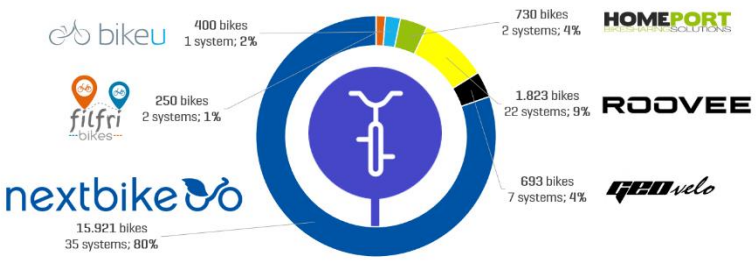
10.9. Smart and electro mobility

IN COOPERATION WITH

1

Bike sharing in Poland– June 2021

(19.817 bikes in 69 systems*)

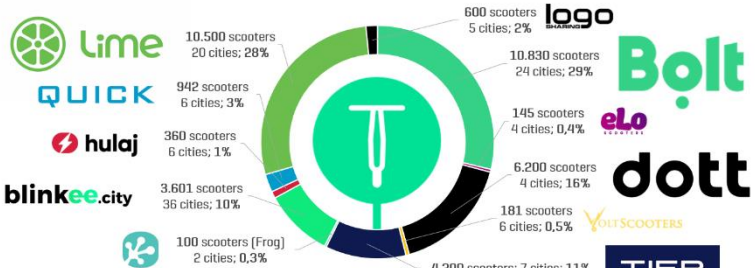


MOBILNE MIASTO SHARED MOBILITY *data as for end of June 2021; icon: Vooom – one app to ride the City

2

Scooter sharing in Poland – June 2021

(37.659 e-scooters in 60 cities*)



MOBILNE MIASTO SHARED MOBILITY *data as for end of June 2021; icon: Vooom – one app to ride the City

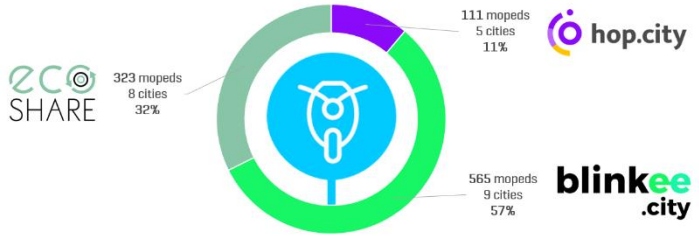
Market segments, size and major players

1. **Bike sharing** | 20k vehicles | 69 systems | key players: Nextbike
2. **Scooter sharing** | 38k vehicles | 60 cities | key players: Bolt, Lime, Dott, Tier
3. **Moped sharing** | 1k vehicles | 19 cities | key player: Blinkee
4. **Car sharing** | 3k+ vehicles | 14+ zones | key players: Traficar, Panek
5. **Ride-hailing** | 30k+ drivers, 12 zones, key players: Bolt, Free Now, Uber, iTaxi
6. **MaaS platforms** | 12 cities | key player: Vooom – one app to ride the City

3

Moped sharing in Poland – June 2021

(1.000 e-mopeds in 19 cities*)

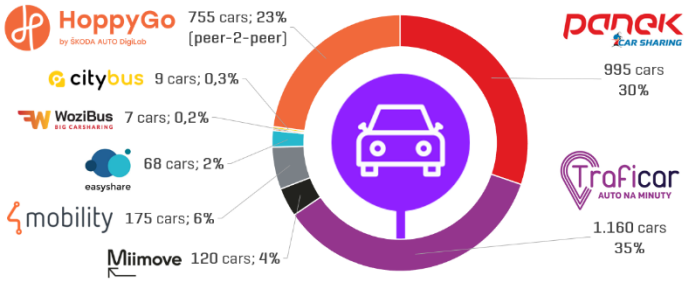


MOBILNE MIASTO SHARED MOBILITY *data as for end of June 2021; icon: Vooom – one app to ride the City

4

Car sharing in Poland – September 2021

(3.290 cars in 14 cities/zones >200k inhabitants*)



MOBILNE MIASTO SHARED MOBILITY *data as for 13.09.2021; methodology: vehicles available + 20%; icon: Vooom

Key characteristics

- **Bike sharing |** all systems are 100% subsidized by municipalities and based on public tenders (single operator market in each city), but requiring reassessment of business model and incorporating also user-fees.
- **Scooter, moped and car sharing |** all systems are 100% business initiatives (multiple operator market in each city) and seeking to be recognized and adopted in municipal sustainable urban mobility plans.

Trends

- Integration and aggregation of multiple mobility services into single apps and MaaS (Mobility-as-a-Service) platforms. The aim is to bring public transit schedule/ticketing, shared mobility offering, multimodal journey planning and payments into one digital solution.

Regulatory background

- Regulation for micromobility adopted in May 2021 (defining kick scooters and PLEV: personal light electric vehicles).
- Regulatory framework for taxi services: well-established but in need of change to better reflect the development of digital services and to lead to greater efficiency and availability of mobility on demand, e.g. through a single national digital taxi license.
- Regulation on shared mobility as a separate mode of transport: expected to come as a results of the works on the New Mobility Strategy and allowing cities to introduce shared and new mobility into their daily operations.
- Regulation on open mobility data: required in order to bundle both public and private mobility offerings on MaaS-type platforms and offer these in mass-scale to citizens.

First comprehensive report on the Polish MaaS market released in 2018

In Polish

Download

MaaS market after second wave of COVID-19 released late 2020

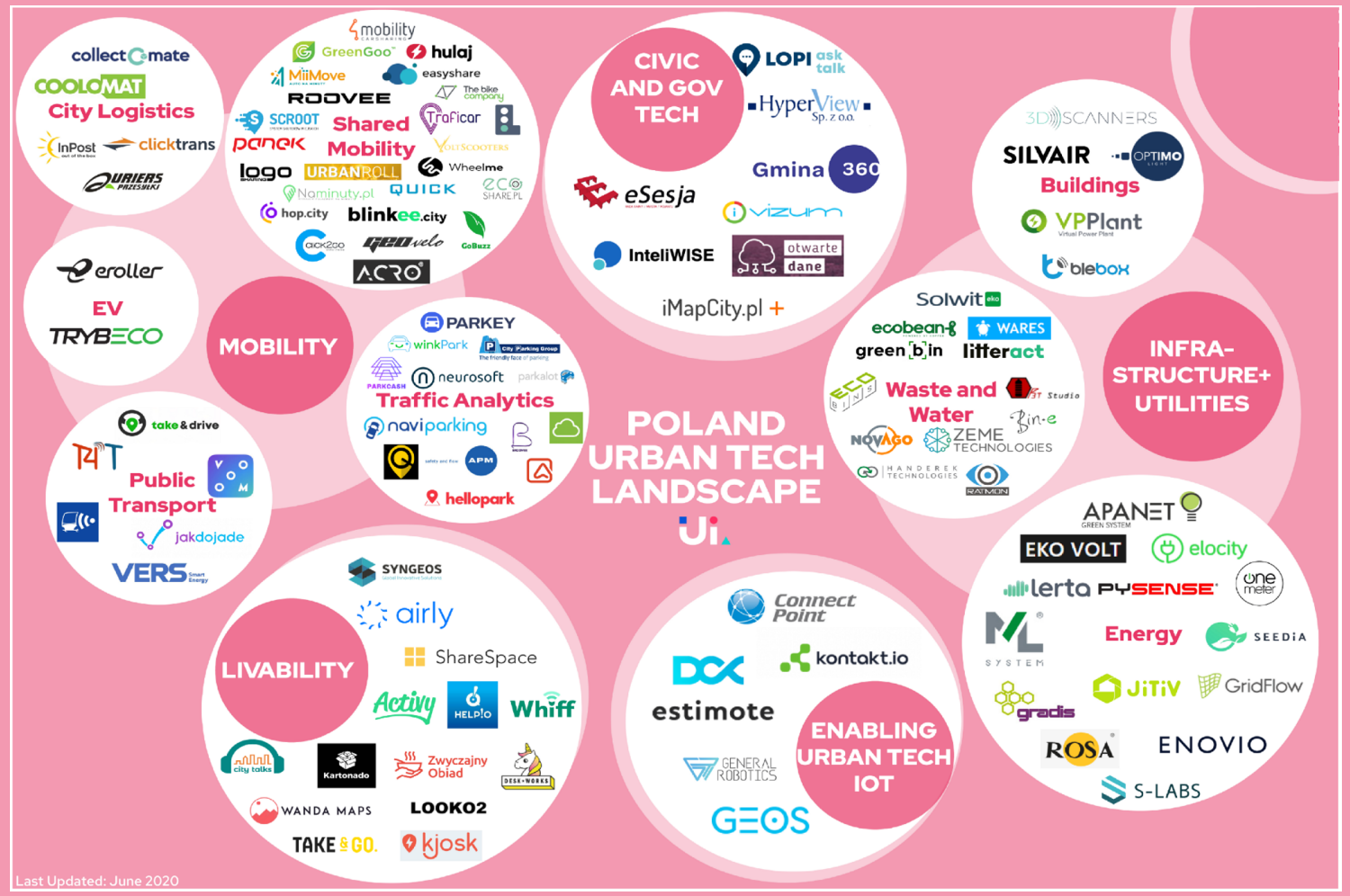
In Polish

Download

Poland Micromobility Report 2020 | Stress-test passed | A report defining a new category of urban mobility (micromobility) and assessing how shared bikes, scooters and mopeds have survived the pandemic in Poland

In Polish

Download



Source: Urban Impact Agency | Learn More

MOBILITY
leading urban innovations

City Logistics

- smart lockers
- load sharing
- low-carbon logistics

EV

- electric vehicle manufacturing
- scooters
- bikes

Shared Mobility

- P2P rental systems (scooters, cars, bikes, e-scooter)
- ride sharing
- shared mobility aggregators

Traffic Analytics

- on-street parking
- optimisation of route planning
- traffic security
- shared parking

Public Transport

- electrification of public transport
- digital ticketing
- MaaS application
- multimodal transport

Adam Jędrzejewski

Founder & CEO of the Mobile City Association

Poland is a very promising market for new mobility ventures such as self-service shared mobility services, mobility on demand, Mobility-as-a-Service (MaaS) and multimodal mobility hubs. First of all, because the adoption of digital services accessible through mobile apps is high (similarly to mobile banking). Secondly, because new urban mobility offerings can target nearly 15m adult customers in major Polish cities, 6m of which are registered within a number of shared mobility services proving that there are already millions of users who know that they can commute seamlessly without using its private car. Last but not least, Poland is expected to adopt numerous municipal sustainable mobility plans limiting the role of a private car in a city and thus boosting the potential for new, shared and digital mobility concepts.

MOBILNE MIASTO
NEW URBAN MOBILITY

The Mobile City Association (Mobilne Miasto) is a well-established professional industry organization fostering the development of new and shared mobility offerings. Its supporting members are providing approx. 60k shared vehicles in Polish cities making a real positive impact on mobility behaviors, mobility policies and dissemination of new mobility services

Want to learn more? | info at mobilne-miasto.org | Visit mobilne-miasto.org/en

The fleet of passenger electric vehicles at the end of August 2021

- Total | 29,820
  - PHEV | 15,564
  - BEV | 14,256

Registered passenger electric vehicles | I-VIII 2021

- Total 11,084 | +130% YOY
  - BEV | 4,387
  - PHEV | 6,697

Other figures

- Electric vans and trucks | 1,125
- Electric buses | 578
- Electric motorcycles and mopeds | 11,425
- Electric micro and other vehicles | 411
- Hydrogen passenger cars | 59
- Hybrid passenger cars and vans | 283,863

Charging Stations

- Total number of charging stations in Poland at the end of August 2021 | 1,631
  - AC charging stations | 1,120
  - DC charging stations | 511

Number of publicly accessible charging points | 3,178

Structure of publicly accessible charging points

- Type 1 and 2 | 67%
- CHAdeMO | 14%
- CCS Combo 2 | 15%
- Tesla | 4%

EV grants | "My EV" program				
INDIVIDUALS	**MAXIMUM VEHICLE PRICE**	**AVERAGE ANNUAL MILEAGE**	**INCENTIVE AMOUNT**	
Vehicle category: **M1**	**225.000 PLN**	No limit	**18.750 PLN**	
Vehicle category: **M1** Individuals with a Large Family Card	No limit	No limit	**27.000 PLN**	
ENTERPRENEURS				
Vehicle category: **M1**	**225.000 PLN**	No limit	**18.750 PLN**	
		> 15.000 km	**27.000 PLN**	
Vehicle category: **N1, M2, M3**	No limit	No limit	**50.000 PLN**	Up to 20% of costs
		> 20.000 km	**70.000 PLPN**	Up to 30% of costs
Vehicle category: **L1e-L7e**	No limit	No limit	**4.000 PLN**	Up to 30% of costs

Source: The National Fund for Environmental Protection and Water Management

Act on Electromobility and Alternative Fuels

Entered into force on 22 February 2018. It aims to stimulate the development of e-mobility and promote the use of alternative fuels in the transport sector in Poland.

"My EV" e-mobility financial support program

Launched by the National Fund for Environmental Protection and Water Management on 14 July 2021. Currently, there is a call for applications for individuals who do not run business activity and who purchase zero-emission passenger cars. By the end of the year, a call for applications will be launched for entrepreneurs, local government units and other institutional entities purchasing zero-emission passenger and delivery vehicles.

Manufacturers of e-buses in Poland

- Solaris Bus & Coach
- Volvo Bus Polska
- MAN Truck & Bus
- Autosan
- Scania

Manufacturers of lithium-ion batteries and battery components in Poland

- BMZ
- Capchem
- Guotai Huarong
- Impact Clean Power Technology
- Johnson Matthey
- LG Energy Solutions
- Northvolt
- LS Cable & Systems
- Mercedes-Benz
- PCC Rokita & Shida Shenghua
- SK Innovation
- Umicore

Manufacturers of charging stations in Poland

- ABB
- Ekoenergetyka-Polska
- Enelion
- Garo Polska
- Kolejowe Zakłady Łączności
- PRE Edward Biel

Poland Drives e-Mobility

The publication describes the Polish potential and plans for the development of e-mobility. Information on law, incentives and financial instruments supporting the development of zero- and low-emission transport in Poland

Released in 2020 | Free | English

Click here to download

Polish EV Outlook 2021

A cyclical analysis of the e-mobility market in Poland. A leading publication and data source for the industry. The study presents the condition of the domestic e-mobility market and variant scenarios for its development. Access to the Report is charged.

Released in 2021 | Paywall | English

Click here to download

Maciej Mazur

CEO, Polish Alternative Fuels Association
Vice President, AVERE

The Polish market is attractive to foreign investors due to factors such as its strategic location, user-friendly legislative and administrative environment and access to qualified employees. All this means that in recent years Poland has strengthened its position in the global e-mobility value chain, especially in three areas such as production of lithium-ion cells and related components, electric buses as well as charging stations.

pspa | We drive e-mobility!

The Polish Alternative Fuels Association (PSPA) is the largest industry organization that shapes the market for e-mobility and hydrogen technologies in Poland and in the CEE region, bringing together over 140 entities from the entire e-mobility chain.

We integrate leading brands from the entire e-mobility value chain. We build a community of vehicle and infrastructure producers, operators and providers of charging services, fuel and energy concerns and all other entities and institutions that are active in the field of sustainable transport.

We associate over 140 companies, which makes us the third largest industry organization in Europe in terms of the number of associated legal entities. Together, we work to create an appropriate economic and legal environment that supports the dynamic development of zero- and low-emission technologies in transport.

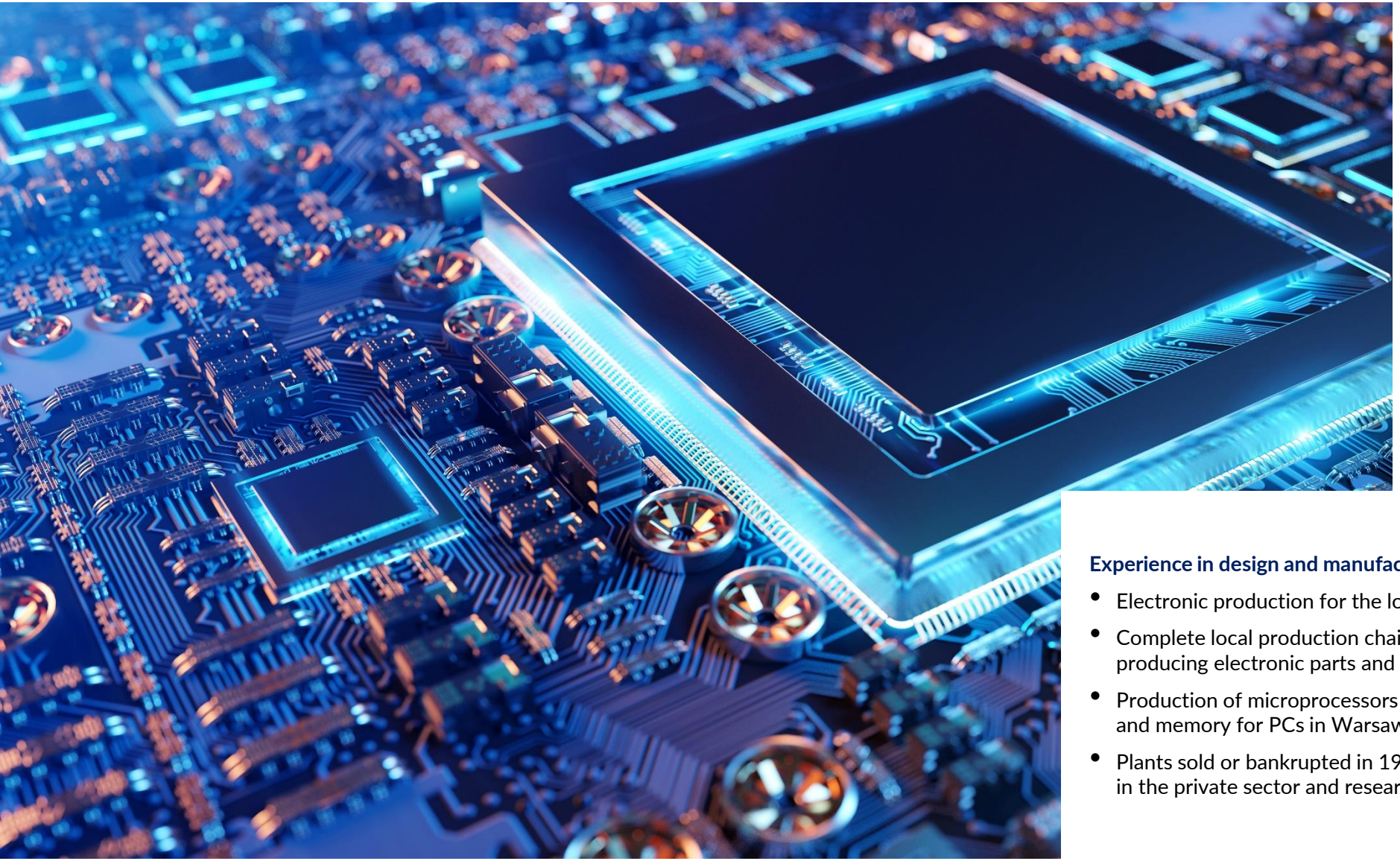
We are the biggest team of e-mobility experts and practitioners in Poland. With a team of consultants and trainers with specialist sector experience and knowledge gained in the industry, we undertake training, consultancy and expert projects. We cooperate with the industry, administration and the society.

We provide knowledge and information, statistics and analyses that are crucial for business development.

Want to learn more? | biuro at pspa.com.pl | Visit pspa.com.pl/?lang=en

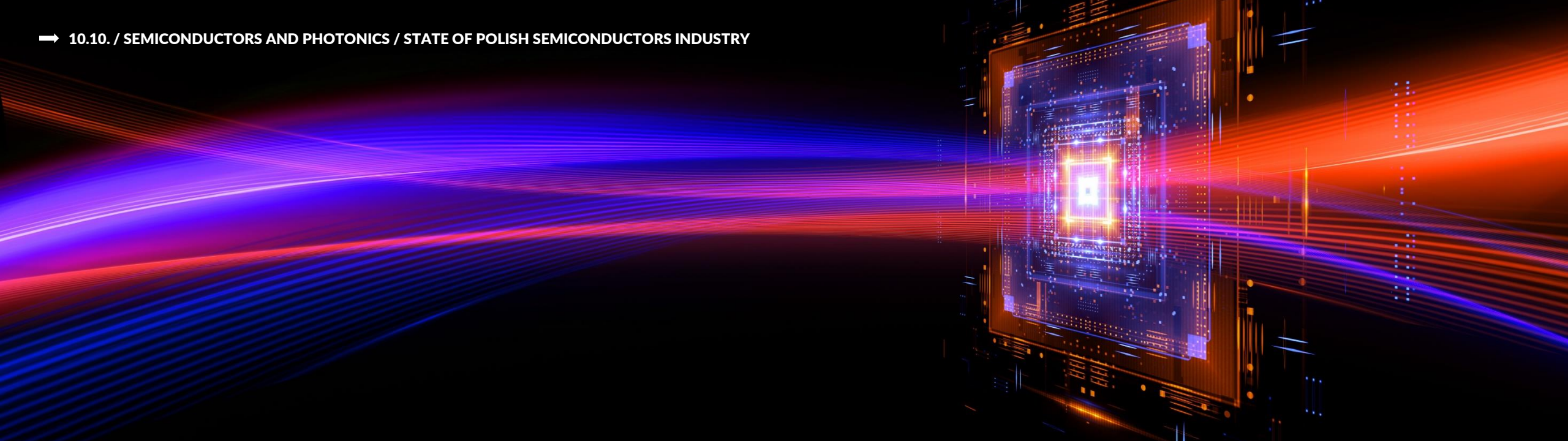
10.10. Semiconductors & Photonics

IN COOPERATION WITH



Experience in design and manufacture of semiconductors in Poland

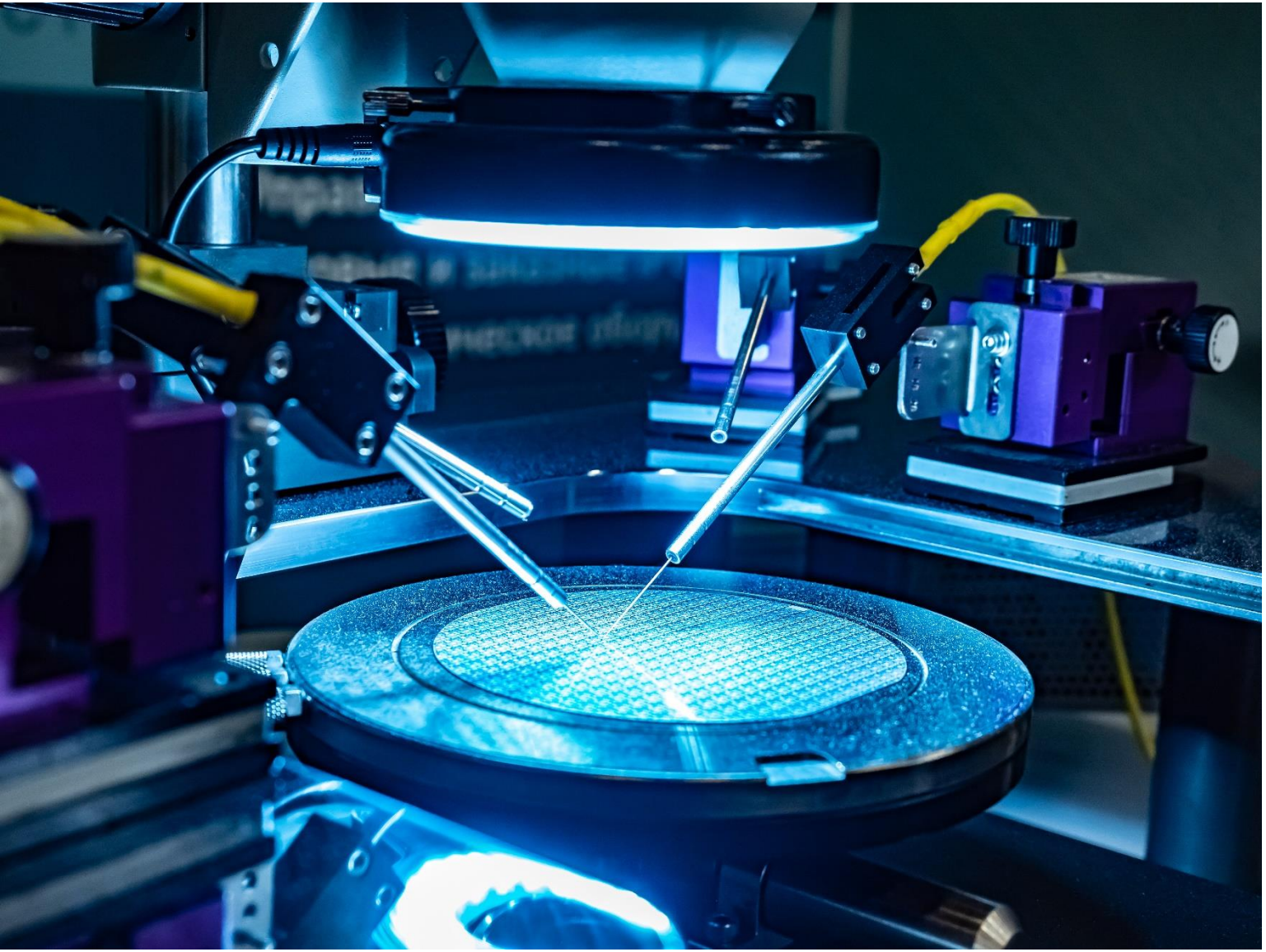
- Electronic production for the local and Soviet bloc markets
- Complete local production chain with over 20 state-owned plants producing electronic parts and components
- Production of microprocessors (Intel 8080 clone and own designs) and memory for PCs in Warsaw
- Plants sold or bankrupted in 1990s. Their former staff is still active in the private sector and research institutes



Local ecosystem players

- Three academic centres
  - **Warsaw University of Technology**, Warsaw | microchip design, manufacturing and applications, photonic-integrated-circuits(PICs)
  - **Gdańsk University of Technology**, Gdańsk | microchip design, production and specification of materials
  - **AGH University of Science and Technology**, Cracow | microchip design
- **Leading industry R&D centre** | Learn more
  - Łukasiewicz Institute of Microelectronics and Photonics (IMIF) in Warsaw, member of the national R&D Łukasiewicz Research Network

    Łukasiewicz
    Institute of Microelectronics and Photonics
  - Area of research: materials, structures and devices, design and manufacturing technologies
  - Design & manufacturing: semiconductor materials, structures and devices, semiconductors and microchips
- Microchip design industry (500+ employees)
- Polish Technological Platform on Photonics (PPTF) | Learn more
- Limited semiconductor production
- Photonics Society of Poland | Learn more
- Ongoing investment in microchip production, large greenfield investment planned



- **OmniChip, Warsaw** | Complex IC design services
  Learn more
- **ChipCraft, Warsaw, Lublin** | Application-Specific Integrated Circuit design, wearable technologies
  Learn more
- **Silicon Creations Poland, Cracow** | IC design services
  Learn more
- **Mentor Graphics Polska, Katowice** | IC design software
  Learn more
- **Cadence Design Systems Poland, Katowice, Warsaw** | IC design software | Learn more
- **Synopsys Poland, Gdansk** | IC design software and services | Learn more
- **Łukasiewicz – IMIF, Warsaw** | photonic materials, functional materials, integrated circuits, GaNdevices and structures, LTTC and printed electronics; large greenfield investment planned | Learn more
- **VIGO Systems, Warsaw** | III-V epitaxial wafers, IR detectors; ongoing develoment: photonic-integrated-circuits (PICs) | Learn more
- **TopGan, Warsaw** | GaNlaser diodes, GaNepi wafers
  Learn more
- **+ undisclosed** IC-design activities by Amazon (Gdansk), Intel (Gdansk) and Samsung (Warsaw)

PPTF

About PPTF

- Cluster of industrial and R&D leaders in Polish photonics and microelectronics
- Developing local and international industrial cooperation
- Industry representation recognised in Poland and EU
- Strong cooperation with European business and R&D

Product and services

- Industrial gas analyzers (Airoptic)
- Graphene products (Łukasiewicz-IMIF)
- Laser metrology devices (Lasertex)
- OLED and PV materials (Noctiluca)
- Quantum dots and inks (QNA Technology)
- Laser modules manufacturing (Semicon)
- 3D scanners (Smarttech)
- Optical elements & coatings (Solaris Optics)
- Laser diodes & nitride-based products (TopGaN)
- IR detectors & modules (VIGO System)
- Digital holographic microscope and tomograph (Warsaw University of Technology)
- Electronics Printing System and Nanoinks (XTPL)

Research and Development

- Tunable laser-based gas analyzers (Airoptic)
- Active optical fibers with tuned optical properties (Łukasiewicz-IMIF)
- Laser measurement systems (Lasertex)
- Ink-jet printed & vapour-deposited OLED (Noctiluca)
- Scalable quantum computers (ORCA Computing)
- 3D scanners development (Smarttech)
- Super-teleobjective for Earth-observation;
- Laser welding of optical elements (Solaris Optics)
- Mid-IR Photonic Integrated Circuits (VIGO System)
- High-end electrooptical transducers;
- Controlled transparency windows and bistable displays (Military University of Technology – WAT)
- Holography, metrology and specialty optical fibers (Warsaw University of Technology)

Maciej J. Nowakowski

Director of Operations, Polish Technological Platform on Photonics

The Polish semiconductor and photonics market has a chance to develop significantly. The main reason is the desire to develop the European market and shorten the get chain. In recent years we have seen how important supply issues are for companies. That is why we focus on developing the market in Poland as a hub for the whole CEE region.

The Polish Photonics Technology Platform (PPTF for short) was established on 27 February 2013. The creation of the platform was a joint venture of companies, associations, universities and research institutes operating in Poland in the photonics area, which was in line with the European Union's approach towards the most innovative areas of the economy in Europe.

Mission

PPTF is to increase the innovativeness of the Polish photonics industry by coordinating the activities of Polish entrepreneurs, scientific units, government and local administration, as well as non-governmental organizations in the development of new optoelectronic technologies and products, personnel development and wider use of photonic technologies in Poland.

Vision

By 2030, Polish photonics will become a significant and recognized European player, providing key technologies and innovative products for domestic industry and international markets, thanks to the dynamic development of optoelectronics and photonics in Poland.

Main slogan

Photonic technologies as an impulse for the development of modern industry in Poland.

Want to learn more? | info at pptf.pl | Learn more

10.11. ICT

IN COOPERATION WITH

- **ICT market value** | **USD 20,2 billion** in 2021, and increase of 5% compared to 2020, from 19,3 bln USD.
- **Growth rates |** approx. **5%** of ICT sector
- Number of **telecommunication providers** | **4 090**
- **IT market value** | more than USD **12.5 billion** in 2021
    - IT Hardware | 51% market share
    - IT services | 32% market share
    - IT Software | 17% market share
- **3,3%** share of the **ICT sector in GDP**
- **Largest pool of ICT specialist in CEE** region with **world-class reputation**
- More than **553,900 people employed in the ICT sector**, accounting for **3.4% of the total employment in Poland**
- More than **30% of total ICT employment** in the **Business Shared Services** sector
- The **most geographically diverse country in CEE** | **Only 29% of employees work in Warsaw** - while in other capitals this percentage is much higher. For Latvia it is 93%, and for Ukraine 43%
- In Poland there are as many as **7 large software centres** (Warsaw, Kraków, Wrocław, Katowice, Poznań, Gdańsk i Łódź) employing more than 10 thousand workers.
- Poland was ranked as the most competitive IT location of all 23 countries of CEE region

Source: PMR, IDC, Itwiz Best 100 2020, GUS, Eurostat, Emerging Europe

IT services | Comment on market size

The market share of basic services, including installation and technical support, is declining. On the other hand, the demand for design services and outsourcing is growing due to high demand for more complex services. For the last several, the IT services market has been slowly and steadily increasing its share in total IT expenditures, already reaching 1/3 of the forecasted value of the IT market in Poland. It may also boast very even annual growth rates of approx. 4.5%.

IT Software | Comment on market size

The value of the software market is almost 50% lower than the value of the services market. This results from the fact that organisations in Poland are still inclined to invest in the creation of custom-made software that takes into account specific processes in a company. Organisations in Poland are still keen on solutions written for their needs. Many companies invest in custom written applications used in specific areas of operation, e.g. e-commerce, customer service, customer communication management. In addition, the market for customised applications market of custom written mobile applications and software as a service is growing rapidly.

Source: Itwiz Best 100 2020

- **Highly fragmented market** | A specific phenomenon for the Polish IT market is its strong fragmentation. On the one hand, it is a characteristic feature of this industry, which is highly innovative and rapidly changing. An exception is the IT distribution market, where ABC Data was acquired by ALSO. On the other hand, in the case of Poland, this is compounded by the constantly low degree of consolidation of local companies and their relatively short history.
- The state of the entire IT industry is largely determined by the **top 50 companies**. Their combined revenues usually amount to approx. 3/4 of the whole market. One of the leaders of this IT distributor AB, generated a turnover of PLN 9 billion, which was a success on a European scale.

Source: It Wiz Best 100 2020, PAIH, Digital Poland Foundation own research

- **854 top custom software developers according to ranking by Clutch.co as of October 2021** (vs 54 from Slovakia, 91 from Czech Republic, 113 from Estonia, 170 from Bulgaria, 325 from Romania)
- **Main export markets for Polish software houses**: USA, Germany, UK, Sweden and Switzerland
- **Increased investment budgets for R&D and innovations**, especially by global players present in Poland thanks to IPBOX

Fixed-line access

- **Penetration** | **The lowest in EU** | 20,8% PL vs 34,3% EU (per 100 inhabitants)
- **8.2 million users**
- **PLN 4.5 billion revenues**
- Average **monthly cost of an fixed-line internet access**
  - **Third cheapest in Europe** | EUR 10,26 in Poland vs EUR 27,18 in EU
- **Structure of revenues** in terms of technologies used
  - FTTH | 26,7%
  - xDSL | 25,6%
  - CATV | 22,9%
  - WLAN | 8,8%
  - LAN | 7,0%
  - Other | 9%
- **Market share of companies**
  - Orange | 24,3%
  - UPC | 15,9%
  - Vectra | 13%
  - Netia | 7,3%
  - Inea | 3,1%
  - Others | 36,4%

Source: UKE

Mobile access

- **Penetration** | **The highest in the EU** | 190,3% PL vs 107% EU (per 100 inhabitants)
- **9,0 million users**
- **PLN 2,0 billion revenues**
- **Share of 4G in mobile access** in EU countries
  - **Second highest in the EU** | 92,3% PL vs 79,6% EU
- Average **monthly cost of a mobile access**
  - **The cheapest in the EU** | EUR 5,5 in Poland vs EUR 18,4 in EU
- **Market share of companies in terms of users**
  - Orange | 34,0%
  - Polsat Plus Group | 29,1%
  - Illiad (P4) | 18,0%
  - T-Mobile | 17,1%
  - **Others, including MVNO| only 1,8%**

Fixed-line access

- **Penetration** | 8,5% in PL vs 38,3% in Spain
- **3.1 million users**
- **PLN 1.4 billion revenues**
- Average **monthly cost of a fixed-line voice access**
  - **Fifth cheapest in Europe** | EUR 16,2 in Poland vs EUR 34,9 in EU
- **Market share of companies in terms of users**
  - Orange | 46,9%
  - UPC | 20,8%
  - Netia | 8,3%
  - Vectra | 7,3%
  - Illiad (P4) | 4,5%
  - T-Mobile | 3,5%
  - Others | 8,7%

Mobile access

- **Penetration** | **4th place in the EU** | 147,2% PL vs 130,4% EU (per 100 inhabitants)
- **54,1 million SIM cards**, including 4,8 mln IoT SIM cards
- **73% post-paid | 27% pre-paid (top-ups) customers**
- **PLN 12,5 billion revenues**
- Average **monthly cost of a mobile access**
  - **The cheapest in the EU** | EUR 5,5 in Poland vs EUR 18,4 in EU
- **Market share of companies in terms of users**
  - Illiad (P4) | 29,0%
  - Orange | 27,0%
  - Polsat Plus Group | 21,5%
  - T-Mobile | 18,7%
  - Others, including MVNO| 3,8%

Source: UKE

- Length of **fibre-optic networks** | **404,000** kilometres
- Number of **fibre-optic nodes** | **258,000**
- Percentage of households that can use a fixed-line internet access service of **at least 30 Mbps**
  - **Poland | 76%**
  - EU average | 86%
- Percentage of households that can use a fixed-line internet access service of **at least 100 Mb/s**
  - **Poland | 28,3%**
  - EU average | 25,9%
- Share of households in the coverage of networks providing access to the Internet with a downlink speed of at least 100 Mbps, **upgradable up to speeds measured in gigabits** | **65,9%**
- Share of individual categories of throughputs of the provided fixed-line Internet access services in the total number of such services
  - **Above 100 Mbps | 55%**
  - 30Mbps <> 100 Mbps | 19%
  - 10Mbps <> 30 Mbps | 11%
  - 2Mbps <> 10 Mbps | 15%
  - Below 2 Mbps | 1%
- **Mobile | 4G (LTE) networks coverage**
  - more than **97%**
- **Mobile | 5G (NR) networks coverage**
  - **Less than 4%**

Source: UKE

digitalsummit
digitalpoland

Open platform for cooperation, exchange of views between CEOs, politicians, policy-makers, leading scientist and opinion leaders on the state of digitalisation in Poland.

The event is accompanied by a debate of politicians of leading political parties on digitalisation and the state of development of new technologies in Poland

The debates and meetings are accompanied by a theme of a guide - where Poland stands in international rankings of new technologies, digitalisation or entrepreneurship, and what needs to be done for Poland to develop even faster for the benefit of the whole society and region. Important think tank reports are also presented during the debates.

The event broadcast by the biggest TV platforms in Poland

Andrzej Dulka

President, PIIT chamber

The importance of ICT in the modern economy cannot be overestimated. ICT solutions already accompany practically all types of economic activity and must grow along with it, or even faster. The Polish ICT market in 2021 will be worth more than $20 billion, which means an increase of as much as 5% compared to 2020. Analyses conducted in our PIIT chamber indicate that digital innovation in the Polish economy needs strong institutional support. In our opinion, the regulatory environment should provide much stronger support for the development of technological innovation in Poland. The Chamber therefore recommends improving cooperation between the administration and business, especially in the area of creating regulations. In our report "*The IT and telecommunications market in Poland 2020*", we propose solutions the implementation of which should bring the desired results, primarily by increasing innovation in the digital area.

PIIT

PIIT | A platform of companies working for digital transformation of the economy and modernisation of the state. We co-create the foundations of digital development in Poland

Want to learn more? | Visit piit.org.pl

Bartosz Majewski

President, SoDA assocation
CEO & Founder, Codibly

At the beginning of the pandemic, no one really knew what to expect, which caused anxiety in the industry. Many customers froze budgets or modified orders. However, they quickly had to get them back on track as the need to digitalise various processes emerged - primarily online sales, but also other services. As a result, according to our report on the impact of the pandemic on the IT industry, more than 75 percent of the companies surveyed are performing no worse or even better than before the pandemic. I am also pleased that Microsoft and Google are opening their cloud data centres in Poland, which is a response to the rapidly growing demand for cloud deployments physically in the CEE region.

SoDA

SoDA | Our main mission is to integrate and internationally promote the industry and work for its development. Since our inception in 2018, we have been creating a community that develops networking for owners, boards and management of IT companies. Currently, we already connect more than 130 companies that meet at meetings, workshops and conferences organized by us.

Want to learn more? | Visit sodapl.com

Market characteristics

- The **biggest data centre market in the CEE region**
- Almost **99,000 m2** of colocation space available (2020) and expected to **reach 114,000 m2 by 2023**
- The total capacity available to customers in the market for commercial data centre services in Poland in 2020 will be close to **89 MW**. This value will double within six years to **181,4 MW in 2025**
- Colocation space utilisation 68%
- The market is **worth over PLN 2 billion** as of 2020
- The data centre market is highly fragmented. The vast majority of data processing centres in Poland are still small objects, with an area below 200 m². If we are talking about the largest facilities, in the case of net area in January 2021, there was one commercial facility in Poland (ATMAN Data Centre) with a rack area exceeding 4,000 m² and one in the 2,500-4,000 m² range (T-Mobile), although Beyond.pl was close to entering this range (the net area of the second CPD was 2,400 m²)
- Consolidation of the market has already began (3S taken over by Play, Linxdatacenter by EdgeConneX)

Source: PMR, Audytel, It Wiz

Warsaw as a leader

- PMR's latest data shows that **Warsaw accounts for 57% of the total commercial server space in Poland**, meaning that this share has increased by around 3 p.p. over the year. Nearly 12% of net space is located in Kraków and 10% in Poznań.
- The analysis of the **top 40 locations confirms the trend of the dominance of Warsaw's Data Processing Centres locations.** Out of 40, there were a total of 24 on the top list at the beginning of 2021 located in Warsaw - two more than a year earlier. The investments planned in the near future allow for the assumption that Warsaw's share will continue to grow. Warsaw generates by far the largest demand for datacentre services, including collocation. However, it is also the most competitive and demanding market. The realisation of further investments on the Warsaw market will soon mean the addition of 12,000 m2 of new IT space for customers.

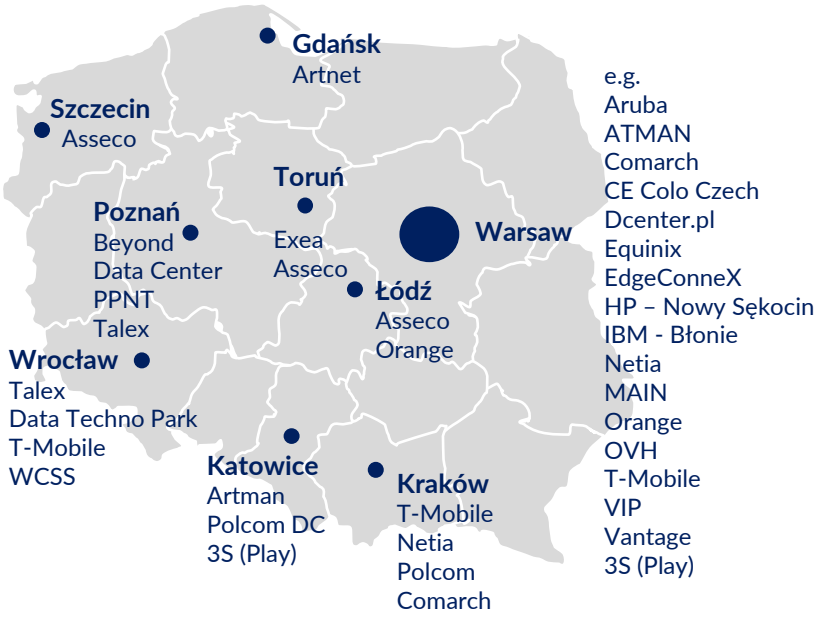
Key DC companies

- Over 100 data centre operators present
- 45% of total colocation space belongs to top 10 players

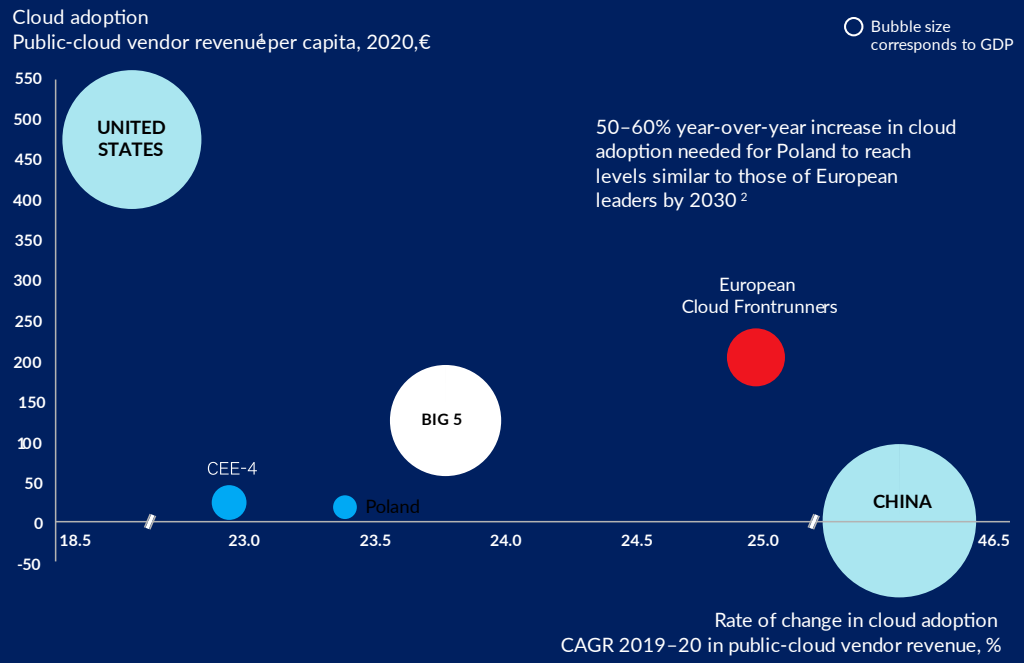
New investments in Poland

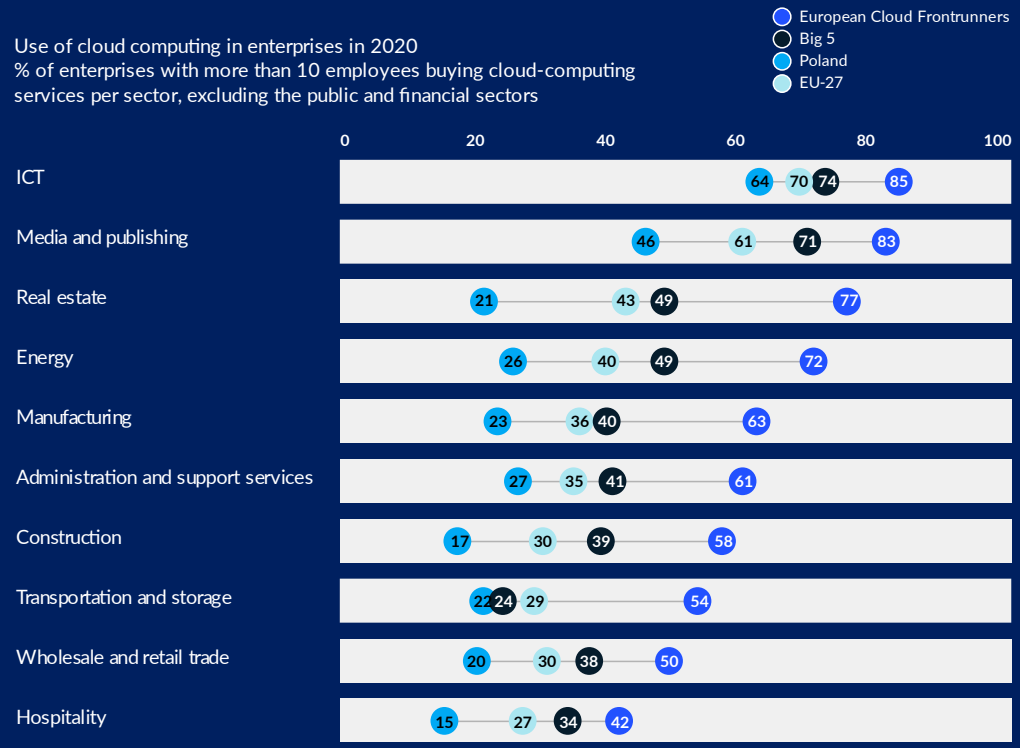
- American Vantage Data Centres (VDC) has announced that it has received permits for the development of the first phase of its complex in Warsaw.
- The large hyperscale investment is being developed in Warsaw by EdgeConneX.
- Expansion plans in Poland, after acquiring a plot of land with a building permit and power allocation, were communicated by the French company DATA4.
- ATM, Asseco Data Systems, Beyond, Equinix, Exatel, Netia, Orange, OVH, Polcom, Polkomtel, Play (3S), T-Mobile
- Equinix is also preparing its own hyperscale project in Warsaw. In Q2 2021, the provider officially announced a two-year programme to build 32 hyperscale facilities worldwide with available capacity of 600 MW.
- Potential investors showing interest in the Polish market include, in addition to those mentioned above, Interxion, KDDI, e-shelter and Digital Realty (DR).
- Building the Google Cloud and Microsoft cloud regions.

Data centres in Poland



Source: PMR, PAIH, Polish Data Center Association





- **Cloud market value** | **537 mln EUR** in 2020
  - The structure of the Polish market does not differ from the structure of public cloud markets in other European countries. Most often, companies from ICT, media and publishing invest in public cloud solutions. Regulatory constraints are also less stringent than in other industries.

- Poland has a **slightly lower level of cloud adoption** than the Czech Republic and Hungary, possibly for multiple reasons, including the overall digitisation level of the CEE-4 countries
- Cloud CAGR | 23,5%, slightly higher than in CEE region

Source: IDC, McKinsey

Michał Potoczek

CEO, Operator Chmury Krajowej

Companies that want to accelerate their growth through technology are facing new challenges today. The cloud is a set of components that allow you to act faster and be more competitive. The challenge is to be able to integrate this technology into products and processes so as to achieve maximum business impact. National Cloud Operator supports companies and institutions on this path. We facilitate the transformation process by helping to effectively build business value using cloud solutions. Our team of experienced cloud experts supports organizations at every stage of the transformation, from building a plan to its effective implementation.

Paweł Jakubik

Cloud based Digital Transformation Lead, Microsoft in Poland

The catalyst for the development of the Polish Digital Valley is undoubtedly the cloud. This is where the greatest digital potential is and here we need to build the strongest possible competences, which are still missing not only on the Polish but also on the European market. As part of the announced 1B USD Microsoft investment to Poland as a country, we trained 150,000 professionals in just twelve months and made a commitment to double that number for the next year. It must be remembered that digital transformation consists not only in introducing individual improvements or technologies into the structure of a company, but it is a process deeply inscribed in its organization and culture, regardless of the nature of the business and industry, and people and their competences play a key role here. " - emphasizes Paweł Jakubik, Director of Digital Transformation and Board Member in Microsoft PL

chmura krajowa

- **Operator Chmury Krajowej** (National Cloud Operator) | Supported by PFR and PKO BP, It's the most specialised provider of cloud computing solutions on the Polish market. Chmura Krajowa operates in the multicloud model offering both services provided from own platform as well as the solutions delivered by global public cloud providers. | Learn more
- National Cloud Operator signed a **strategic partnership with Google and Microsoft** for faster cloud adoption by SMEs and large companies across all industries

Google Cloud

- **Google Cloud Data hub, worth USD 2 billions** launched in Warsaw in April 2021 Learn more
- biggest investment in infrastructure of this type in Poland
- 25th location worldwide, first in CEE region
- Google has trained over 15,000 cloud computing professionals in Poland in 2020

Microsoft

- **Microsoft to invest USD 1 billion in a cloud region**, including datacenter and services in Poland | Learn more
- The new data centre region joins Microsoft's global infrastructure of cloud regions, which includes 59 regions with Microsoft Azure service availability in more than 140 countries.
- The investment will also provide strong support for the continued success of Polish developers, creating opportunities for some **150,000 employees**, partners and students to develop key skills
- Easier access to Microsoft Azure, Microsoft 365, Dynamics 365 and Power Platform

11. Recommendations

Dr Mark Loughran

General Manager, **Microsoft** in Poland

Our ongoing commitment to supporting the development of Poland's Digital Valley builds on Microsoft's nearly 30-year history of successfully partnering with Polish organizations and companies of all sizes and a network of more than 6,000 local partners from its Warsaw Office in Poland. In 2020, we announced a $1 billion digital transformation plan for Poland that combines investments in long-term talent upskilling, strong local partnerships, and driving digitisation and innovation for businesses, government and citizens. The cornerstone of this multi-faceted plan is the opening of a new Microsoft data centre region in Poland's capital city area. In 16 months alone, we completed our 5-year plan and upskilled more than 150,000 professionals in training for IT professionals at various levels. We continue our strong support for the success of the Polish developer talent pool and beyond, creating skills and learning opportunities for another 150,000 employees, partners and students in the coming year. We believe that the high level of competence, talented people and experience of Polish IT companies unleash the spirit of innovation. With great IT talent, entrepreneurial spirit and a rapidly changing business sector, from small to large, Poland has great potential to become the digital heart of Europe.

Aleksander Kutela

Vice President, **Ringier Axel Springer Media**

Ringier Axel Springer has decided to build one of its key global AI and data science centres in Poland. This choice was dictated primarily by the availability of talented engineering specialists. Digital tools are being developed in Poland for our journalists to publish the latest news from the world. Thanks to talented programmers and cloud engineers, we have successfully migrated our services to the cloud from data centre.

I am glad that APX, a Berlin-based company investing in early stage startups, is strengthening its presence in the Central and Eastern European (CEE) region, with a particular focus on Poland. Here, APX will search for startups with the potential to become a so-called unicorn and finance their development and growth. APX is an investor supported by, among others, the media conglomerate Axel Springer and Porsche. The cooperation between Ringier Axel Springer Media and APX was officially launched in 2021 in Warsaw.

Anna Urbańska

CEO, **Standard Chartered Bank**, Global Business Services in Poland

The top quality talent available in the local labour market was a key factor we looked at when considering various locations in Poland and the wider CEE region for our first global business services centre in the Western Hemisphere. We chose Poland's capital because of the significant and growing pool of technology professionals experienced in a variety of disciplines, including those that were of particular interest to Standard Chartered, namely cyber security (from engineering, risk management and project management to training and awareness) and programming in functional programming languages (e.g. Haskell). There are a number of global players from the technology, financial and other sectors in this market, which is testament to the technical and business skills of the local talent pool (e.g. operating effectively in international environments and complex business structures, critical thinking, problem solving, and language skills).

Łukasz Margański

Managing Director, Head in CEE region, **BCG** Platinion

In 2019, we decided to place BCG Platinion's Central and Eastern Europe (CEE) hub in Poland. In that time, we have built a strong team of passionate, technologically experienced professionals who help our clients in the region solve their most complex technology challenges and guide them through major digital transformation programmes. We've learned that the technology talent we've found in Warsaw is truly exceptional - ambitious, growth-oriented, well-educated people with a solid work ethic and good experience in local and global projects. Although competition for technology talent is intensifying, we still see Warsaw as a place with great potential for further development. A city that we value for its vibrant energy, openness to innovation and strategic position in the CEE region.

Aniela Hejnowska

General Manager, **IQVIA** in Poland

Poland, known as the Silicon Valley of the East, is a goldmine of innovative medical solutions and a good location for technological development centres of many global giants. That is why IQVIA decided to have a presence in Poland and employs here over 1100 people with technology, medical and biotechnology backgrounds, who with their knowledge and experience support over 100 markets where IQVIA operates. IQVIA is a combination of big data and technologies e.g., AI, ML and others in the service of the greater good. We provide innovative solutions to all participants in the healthcare market and are a reliable partner in key decision-making processes. Based on our datasets and forecasts, the UK government made decisions about lockdowns during the COVID-19 outbreak. The Estonian government, based on our recommendations, repaired faulty ventilators, protecting the population from another wave of contagion without spending the budget to buy new ones. IQVIA is also actively involved in key Polish initiatives, including the "Warsaw Health Innovation Hub" and "AI in healthcare coalition".

Andrzej Pacek

CEO, **NatWest Group** in Poland (former Royal Bank of Scotland Group)

We chose Warsaw to create our financial analytics team because of the strong capabilities in both Data Science and Data Engineering in the local market, which allow us to rapidly develop our process transformation and artificial intelligence capabilities. By combining these skills with existing commercial and analytical capabilities finance of the future.

Paul Brazier

Managing Director, Head of EMEA Corporate & Site Services,
Warsaw Location Leader at **J.P. Morgan**

J.P. Morgan operates in over 100 countries. Our tech and operating centres are open 24/7 and are readily available. Poland has at its disposal highly qualified workers that are interested in new technologies and economic infrastructure - qualities that are just perfect for our company. In 2017 we decided to hire over 3.000 people at our Polish corporate centre over the next three years.

Guo Shuaisheng

President, **Huawei** Warsaw Research Center

In our Warsaw R&D centre we focus on the development of cutting-edge technologies, such as artificial intelligence, and benefit from the huge intellectual potential of Polish specialists. However, at Huawei we believe that thanks to broad cooperation we can even more efficiently create innovations having a real positive impact on our society. Therefore, we are consistently building an ecosystem of cooperation for innovation with universities and startups around our R&D. Universities have access to our global know-how, and the brightest students have a chance at employment. As part of initiatives such as the Huawei Startup Challenge, our R&D also provides mentoring support for innovative entrepreneurs. Our activities in Poland bring concrete results, hence I recommend conducting R&D activities in Poland.

Wojciech Cichoń

Vice President, Head of European Business Services Delivery Centers, **Capgemini**

In recent years Poland has proven its position as one of the most attractive global locations for business investments. As one of the first representatives of the business services sector in the country, we have had the chance to observe the following stages of Poland's economic boom. Today, developing our centers in Katowice, Kraków, Wrocław, Warszawa, Opole and Poznań, we are one of the biggest foreign investors in the country. Central location of Poland on the continent, well-educated manpower, a number of young talents and experience in comprehensive investor support - this is just a short list of what Poland has to offer and what attracts world-renown brands. What is more, we observe a growing number of complex projects being processed in Poland, positively affecting local economy.

Tomasz Wyszyński

VP Marketing Analytics & AI, **Schneider Electric**

The Warsaw office is one of the most important hubs in our AI and digital space. The choice to develop it here is linked to a fantastic talent funnel, but also to the fact that this talent has proven to deliver huge value. Some of the most innovative products used by our sales and marketing teams around the world have been developed by Warsaw teams. We operate in the areas of web & apps development, big data & AI and we are looking forward to expanding our operations in Warsaw.

Andreas Maierhofer

CEO, **T-Mobile** in Poland

In the era of dynamic digitalisation, investments in artificial intelligence are the basis for development in such sectors as cyber security or advanced customer needs analysis. Poland, and especially Warsaw, has every predisposition to become a serious player in this field, mainly thanks to its excellent academic background and the availability of highly qualified IT and data science specialists, but also thanks to the openness of Polish companies to new business tools and new areas of activity.

Ewa Łabno-Falęcka, Ph.D.

Head of Corporate Communication and External Affairs, **Mercedes-Benz** in Poland

Within the Mercedes' global growth strategy, last year the company decided to invest in the CEE region, that is still considered as an attractive safe haven comparing to other parts of the world.

For an investment decision to be made, we analysed seven countries and dozens of locations. The final list of places consisted of two countries, including Poland. Poland won, due to the combination of the following factors: location, size, shape and logistic advantages of the plot in Jawor, as well as the local human quality. Last but not least - the professionalism of our reliable Polish partners: the government and its agencies such as PAIH, as well as local government bodies and Wałbrzych Special Economic Zone

Igor Zacharjasz

Innovation Studio Director, CEE region, **VISA**

Visa is a brand serving everyone who wants to participate in the global economy. We operate the largest and most dynamic network of technology, partnerships and people. Visa modernizes the way people move money by building partnerships to develop new payment flows for consumers and businesses and new value-added services.

Visa Innovation Studio Warsaw is part of Visa's global network of innovation centres where Visa customers and partners can learn about human-centred design principles, explore new technologies that advance commerce, solve the toughest business problems and discover new commercial opportunities while interacting with Visa experts in Poland. It is a platform for cross-functional teams to work together on market standards that are shared with all stakeholders. The Studio's experts have so far worked on many projects supporting the digital economy in Poland, such as the popularisation of card payments among micro-entrepreneurs, e-paragon, next-generation payments for smart cities and e-commerce, and online recurring payments.

Christophe Kabut

Managing Director, **Orange** Innovation Poland

Orange Innovation Poland is one of the largest R&D competence centres among the Orange Innovation countries community, focused on cutting-edge technologies and bringing together best-in-class specialists in artificial intelligence and cloud technologies.

We support the digital transformation of Orange countries in Europe and Africa in the Middle East in Edge Computing, IoT, home services, network automation and orchestration and mobilise our research capabilities to sustain responsible innovation.

Bartosz Biskupski

General Manager, Head of AI, **TCL** Research Europe

TCL chose Warsaw for its European research headquarters, recognising that Polish researchers have a unique combination of excellent algorithmic and mathematical skills. These skills are key to the AI projects being developed by TCL.

Jeroen van der Toolen

Managing Director Central & Eastern Europe, **Ghelamco**

Poland is a great country. Our company comes from Belgium and has been investing here for 30 years. We have managed to realise many amazing projects. In recent years, we have built a completely new business district in Warsaw around Rondo Daszyńskie. You don't find such fantastic opportunities in other countries. I therefore encourage you to invest in Poland.

Birgitta Finnander

Former Head of R&D Center in Poland, **Ericsson** in Poland

Poland, as Ericsson's second largest Radio R&D centre, plays an important role in developing 5G globally. Ericsson invests in Polish R&D because of high software skill level, experience with telco technology and the central location in Europe. Another reason is the possibility to scale up the workforce with highly competent graduates.

Barbara Belpaire

General Manager, **TomTom** in Poland

We have been systematically expanding our teams of AI specialists in Poland for many years. We collaborate with universities and industry leaders, which allows us, among other things, to conduct joint research, co-create content and pilot new solutions. We employ a very diverse team and have academia on board to stimulate discussion & innovation through a diversity of thoughts. Last but not least, we show interns, who might become future AI professionals, and external specialists, how fascinating, rewarding and essential their adventure with artificial intelligence can be to develop scalable products & solutions for better mobility and to drive innovation in this novel domain.

Adam Roś

Vice President, **Samsung** R&D Institute in Poland

The Polish R&D centre is one of Samsung's key research centres and the largest in Europe. For many years it has been developing advanced AI technology to power our consumer electronics and telecommunications solutions.

Piotr Lewalski

Site leader, **Nvidia** in Poland

NVIDIA decided to open a site in Warsaw to take advantage, but also to grow the local talent pool. The local teams optimize Deep Learning platforms across the software stack, from low-level changes in CUDA, through data pipeline improvements, up to changes in neural network implementations and topologies, leading to more accurate and faster results.

Mariusz Mielczarek

Head of Public Policy CEE, **Amazon** in Poland

Amazon's investment in Poland started with the acquisition of Ivona, a text-to-speech software company. Since then, the city of Gdańsk has become one of the major development centres behind Alexa. Afterwards, further R&D investment came, focused among others on the development of AI technology.

Victor Canseco

General Manager Data Platforms Group, **Intel** in Poland

Poland is one of the most important hubs in Intel AI space. The high-quality ICT education, offered at Polish universities, and the excellent track record of local software engineers makes this possible.

Jackie Zhang

CEO, **Huawei** in Poland

In recent years, we have allocated over 42 million PLN to develop our R&D ecosystem in Poland because we believe in the enormous intellectual potential of Polish IT and new technology professionals. Together we can create extraordinary innovations in 5G, AI, cloud, contributing to the development of both our company and the Polish society. Huawei has been present in Poland for more than 17 years, and all this time we have been acting according to the principle: in Poland, for Poland. In pursuing our R&D goals, we do our best to provide Polish universities, such as Kozminski University or Warsaw Technical University, with the best technologies on the market, and we support them with our global know-how.

Alex Holmes

Chairman & CEO, **MoneyGram** International

MoneyGram considered a wide variety of factors in choosing Poland and Warsaw, and we conducted a comprehensive global search that included several Eastern European countries. Poland's fundamental strengths made it the obvious choice for MoneyGram. It offers a talented, educated workforce, a vibrant economy and financial services sector, and a business-friendly, environment. The Polish government and Polish Information and Foreign Investment Agency were instrumental in supporting MoneyGram's selection process, and we are grateful for the warm welcome to Poland. We are excited to be part of this community.

12. Tax & Law

IN COOPERATION WITH

Baker McKenzie.

Government documents supporting the development of ICT and high-tech industries

Strategy for Responsible Development of Poland for the period of up to 2020 including the perspective up to 2030

- ICT incl. fintech, machine & building automation, cybersecurity, computer games or bioinformatics as a strategic sector for Poland
- National Smart Specialisations with preferences in obtaining R&D and innovation funds

5G Strategy for Poland

- Development of 5G networks based on EU Gigabit Society Benchmarks
  - ✓ 700 MHz frequencies to be auctioned in mid 2022 and to cover transport paths by 2025
  - ✓ 3.4-3.8 GHz frequencies to be auctioned before mid 2022. Proposed for commercial use in major urban centres, main transport routes and factories
  - ✓ 26 GHz frequencies for highly populated spots such as railway stations, airports, shopping centres, business centres and factories

National Broadband Plan | KPI for 2025

- Universal internet access of at least 100 Mbps, modifiable to speeds measured in Gbps
- Internet access of at least 1 Gbps for all places that are the main drivers of socio-economic development. This includes schools, transport hubs and major public service locations. This includes internet-intensive businesses
- Fully developed 5G connectivity on all major transport routes and in major urban centres. The aim is to have fully developed 5G connectivity in at least one major city later this year

Cybersecurity Strategy of the Republic of Poland for 2019 – 2024

- Development of the national cybersecurity system
- Increasing the level of resilience of information systems of the public administration and private sector

Policy for AI Development in Poland

- Government development strategy for AI implementation in the Polish economy and public administration
- 125 short term and 70 medium term tasks planned under AI implementation in the society and business

Legal & Tax environment

- The EU has one of the most open investment regimes in the world (based on OECD FDI Regulatory Restrictiveness Index (FDI Index) measures statutory restrictions on foreign direct investment). That includes Poland, the EU Member State.
- Foreign direct investment (FDI) can take two different forms: **Greenfield** or mergers and acquisitions (**M&A**s).
- In Poland, the most popular corporate vehicle used for greenfield investments is a limited liability company (sp. z o.o.). The other popular corporate FDI-vehicles include: a branch (oddział), a simple joint-stock company (P.S.A.) and a joint-stock company (S.A.). See schedule 1 for a comparison chart.

Foreign Investment Screening

- There are several regimes directed at screening foreign direct investments in Poland. Some apply regardless of an investor's country of origin. Transactions by undertakings with their registered offices or citizenship outside of member states, defined as EU/European Economic Area (EEA) or OECD countries, pertaining to certain types of companies or companies operating in specific sectors and meeting required thresholds, are subject to a separate screening mechanism. These restrictions on freedom of investments are intended to apply until 24 July 2022.
- In addition, there are restrictions on the purchase of real estate and shares in companies holding real estate in Poland for foreigners from outside of the EEA and Switzerland. There are additional restrictions for certain regulated sectors, such as aviation, radio and television broadcasting, defense, etc. There also are certain foreign exchange law restrictions.
- Additionally, there are a number of significant restrictions for both national and foreign investors. These include, in particular (i) restrictions on transferring agricultural real estate and shares in companies holding agricultural real estate, and (ii) merger control.

Weronika Achramowicz

Partner, Baker McKenzie in Poland

M&A in the technology sector has undeniably become one of the new post-Covid transaction norms. IT companies continue to seek out IT targets to expand their market reach, while 'traditional' companies are beginning to hunt for technology targets for a variety of reasons - to increase their edge in the e-commerce market, to secure access to key IT service providers, to transform traditional business models into tech businesses. Poland remains one of the favourite destinations for the IT industry. It is strong in its own right, well recognised by global players looking for suitable targets in this part of Europe, and is a very attractive gateway opening the way to EU markets for non-EU investors.

ITEM	SIMPLE JOINT-STOCK COMPANY	JOINT STOCK COMPANY
	CORPORATE	
Legal status	Independent entity being a legal person. A SJSC obtains a full legal personality as of the day of its registration in the National Court Register. However, in the period between the incorporation (i.e. execution of the Articles of Association) and registration, it is regarded as a company "in organization", with the ability to enter into transactions (acquire rights in its own name and incur obligations) and to sue and be sued.	Independent entity being a legal person. A JSC obtains a full legal personality as of the day of its registration in the National Court Register. However, in the period between the incorporation (i.e. execution of the Articles of Association of a joint stock company referred to as the Statute or the company's Charter) and registration, it is regarded as a company "in organization", with the ability to enter into transactions (acquire rights in its own name and incur obligations) and to sue and be sued.
Shareholder(s)	A SJSC may be established either as a sole-shareholder company or a multi-shareholder company. A SJSC may not be formed solely by another single-shareholder limited liability company.	A JSC may be established either as a sole-shareholder company or a multi-shareholder company. A JSC may not be formed solely by another single-shareholder limited liability company.
Governing bodies	Management Board Board of Directors The Board of Directors is a mandatory body of a Polish SJSC, which alternatively may be replaced with the Management Board. It is composed of one or more directors, appointed from among the company's shareholders or from other persons by the shareholders, unless the Articles of Association provide otherwise. Directors may be divided into two categories: Executive directors and Non-executive directors, who exercise permanent supervision over the SJSCs activities In principle, both Polish citizens and foreigners may serve as the Directors of a Polish SJSC. They do not need to be Polish residents; however, depending on the scope of activities, sector specific restrictions may apply. Supervisory Board (optional) Shareholders' Meeting	Management Board Supervisory Board/Auditing Committee Shareholders' Meeting
Minimum legal representative requirements and powers	The powers of the Management Board or alternatively of the Board of Directors are regulated by the Commercial Companies Code and cover the management of the affairs of the company and its representation. The right of a Member or alternatively a Director of the Board of Directors to represent the company may not be restricted with a legal effect vis-à-vis third parties.	The powers of the Management Board are regulated by the Commercial Companies Code and cover the management of the affairs of the company and its representation. The right of a member of the Management Board to represent the company may not be restricted with a legal effect vis-à-vis third parties.

ITEM	SIMPLE JOINT-STOCK COMPANY	JOINT STOCK COMPANY
Minimum "investment"	The minimum value of the share capital in an SJSC is PLN 1.00 (approximately USD 0.26). Shares does not have a nominal value. The entire share capital does not have be paid up in full before the registration of the SJSC in the National Court Register, however before the registration the minimum value of the share capital i.e. PLN 1.00 must be paid. Moreover contributions must be made in full within three years of the SJSC's entry in the National Court Register	The minimum value of the share capital in an JSC is PLN 100,000 (approximately USD 26,300). Shares may be issued at a par value of PLN 1/100 at the minimum. The share capital may be paid up in cash or by way of a contribution in kind, or a mixture of the two. Shares issued in return for an in-kind contribution should be paid up in full no later than one year after the registration of the company. In the case of shares issued in return for cash, at least 25% of the capital should be paid up before the registration. Bearer shares may not be issued until they are fully paid up.
Scope of business activity	Decided by the shareholder(s) in the Articles of Association.	Decided by the shareholder(s) in the Articles of Association.
Legal liability	A SJSC is liable towards third parties for its actions. Shareholder(s) are not liable for the obligations of an SJSC. An exception to this rule is the liability of a shareholder(s) for the obligations of a SJSC "in organization". In certain cases, the Members or alternatively the Directors of a SJSC may also become liable for its obligations.	A JSC is liable towards third parties for its actions. Shareholder(s) are not liable for the obligations of a JSC. An exception to this rule is the liability of a shareholder(s) for the obligations of a JSC "in organization". In certain cases, the Members of an JSC may also become liable for its obligations.
Dividends	According to the Commercial Companies Code, a shareholder is entitled to a share in the profits and to a distribution from the share capital specified in the annual financial statement and allocated under a resolution of the Ordinary Shareholders' Meeting for distribution. The shareholders may decide to keep the profits in the company if they do not want to be paid dividends. In order to pay dividends, the SJSC must have net profits (which do not have to be used for covering the balance sheet losses) and the Ordinary Shareholders' Meeting must adopt a resolution to distribute the profits among the shareholders. All simple joint-stock companies are entitled to distribute interim dividends out of current year's profit if so provided in the Articles of Association. The Commercial Companies Code provides for the specific rules regarding the profits designated for the distribution of dividends and advances on dividends".	According to the Commercial Companies Code, a shareholder is entitled to a share in the profits and to a distribution from the share capital specified in the annual financial statement and allocated under a resolution of the Ordinary Shareholders' Meeting for distribution. The shareholders may decide to keep the profits in the company if they do not want to be paid dividends. In order to pay dividends, the JSC must have net profits (which do not have to be used for covering the balance sheet losses) and the Ordinary Shareholders' Meeting must adopt a resolution to distribute the profits among the shareholders. All joint-stock companies are entitled to distribute interim dividends out of current year's profit if so provided in the Articles of Association. The Commercial Companies Code provides for the specific rules regarding the profits designated for the distribution of dividends and advances on dividends".
Time to fully set up	App. 1 to 2 months.	App. 1 to 2 months.

ITEM	SIMPLE JOINT-STOCK COMPANY	JOINT STOCK COMPANY
MAIN REGISTRATION AND REPORTING REQUIREMENTS		
Court registration	Yes	Yes
Registration in the Statistical Office	Yes	Yes
Registration in the Central Register of Beneficial Owners	Yes	Yes
General tax registration	Generally, a SJSC should obtain a tax identification number upon registration in the commercial registry. Within 21 days from the date of registration of the SJSC in the National Court Register, the updated tax information should be filed with the tax office. A SJSC may obtain the tax identification number also before its registration in the commercial registry, if necessary. However, the tax registration process may then be slightly longer. Due to the fact that many elements of the tax registration process are based on the practice of tax authorities, it is possible that - as indicated below - a specific approach will develop towards SJSC, also in terms of tax registration (at least to some extent).	Generally, an JSC obtains a tax identification number upon registration in the commercial registry. Within 21 days from the date of registration of the JSC in the National Court Register, the updated tax information should be filed with the tax office. A JSC may obtain the tax identification number also before its registration in the commercial registry, if necessary. However, the tax registration process may then be slightly longer.
VAT registration	VAT registration should be required before the first VAT-able (taxable) activity is performed; VAT registration should not be required (i) where only VAT-exempt activities will be performed or (ii) where VAT-able activities will be performed, but their value will not exceed PLN 200,000 annually net of VAT (subject to certain limitations).	VAT registration is required before the first VAT-able (taxable) activity is performed; VAT registration is not required (i) where only VAT-exempt activities will be performed or (ii) where VAT-able activities will be performed, but their value will not exceed PLN 200,000 annually net of VAT (subject to certain limitations).
Corporation Tax registration	The General tax identification number should be used for CIT purposes.	The General tax identification number is used for CIT purposes.
Accounting and documentation	A SJSC is obliged to keep accounting books and VAT records. Therefore, there will be a need to employ professional accountants or to appoint an external accounting firm.	An JSC is obliged to keep accounting books and VAT records. Therefore, there will be a need to employ professional accountants or to appoint an external accounting firm.

ITEM	SIMPLE JOINT-STOCK COMPANY	JOINT STOCK COMPANY
Payroll registration	A SJSC should act as a remitter / withholding agent of tax advances for personal income tax and social security contributions of individuals engaged based on employment agreements / civil law agreements. There should be no need for additional tax registration of a SJSC for payroll purposes. The SJSC then should also file monthly returns and pays withheld social security contributions. The SJSC should have to register itself as a remitter of social security contributions and register for the social security contributions of each employed individual and (7-day deadline).	A JSC acts as a remitter / withholding agent of tax advances for personal income tax and social security contributions of individuals engaged based on employment agreements / civil law agreements. There is no need for additional tax registration of a JSC for payroll purposes. The JSC then also files monthly returns and pays withheld social security contributions. The JSC must register itself as a remitter of social security contributions and register for the social security contributions of each employed individual (7-day deadline).
Corporate filings	The SJSC is obliged to file with the National Court Register its annual financial statement, a copy of the resolution of the General Shareholders Meeting regarding the approval of the annual financial statement and the net profit distribution / covering of losses, a report on the company's activity and the auditor's report (if applicable), within 15 days of the date of approval of the financial statement. A SJSC is required to notify the National Court Register of all changes with respect to the information disclosed in the National Court Register.	The company is obliged to file with the National Court Register its annual financial statement, a copy of the resolution of the Ordinary General Meeting regarding the approval of the annual financial statement and the net profit distribution / covering of losses, a report on the company's activity and the auditor's report, within 15 days of the date of approval of the financial statement. An JSC is required to notify the National Court Register of all changes with respect to the information disclosed in the National Court Register.
Tax returns and Tax filings	The comments referring to a JSC should also apply to a SJSC.	As a rule, general CIT tax returns should be filed annually and tax advances paid monthly. As an exception there exists the possibility to opt for quarterly CIT tax advances (i) in the first tax year of the taxpayer or (ii) by "small taxpayers" whose annual turnover (including the amount of VAT due) did not exceed in the previous tax year an amount corresponding to the equivalent of EUR 2,000,000, expressed in PLN. Monthly VAT returns should be filed and monthly VAT payment should be made (exceptions possible - optional quarterly VAT returns in case of taxpayers not exceeding an annual turnover of EUR 1,200,000, but it is allowed only after the lapse of 12 months from the VAT registration).
Local bank account	Payments arising from business activity conducted should be made or received through a bank account, whenever: 1) the other party to the transaction is an entrepreneur; and 2) the one-time value of the transaction, regardless of the number of payments arising therefrom, exceeds the equivalent of PLN 15,000 (approximately USD 4,000). A local bank account (opened in a bank seated in Poland or in a local cooperative savings and credit union) is required to be able to receive VAT refunds and to apply a split-payment method. A local bank account, registered with the tax authorities, is also required for the purposes of receiving payments from other Polish VAT payers without the need for them to notify each payment to the tax authorities.	The comments referring to a Simple Joint-stock Company apply also to a JSC.

ITEM	SIMPLE JOINT-STOCK COMPANY	JOINT STOCK COMPANY
TAX		
Summary	Generally, there should not be significant differences between SJCS and JSC from the perspective of tax obligations. However, please note, that in general SJCS may be considered as a novelty for Polish tax authorities and - upon its adoption - the tax legislation and practice may be quickly adjusted. Thus - with respect to all tax matters - it is important to monitor any potential developments related to SJCS to be possibly expected in the coming months to have a full and updated picture prior to making any business decisions.	
Transfer tax	Based on the currently prevailing standpoint, incorporation of a SJCS as well as adoption of a resolution to issue new shares should not be subject to transfer tax.	0.5% transfer tax is due on the value of the share capital of a JSC.
Corporate income tax	The comments referring to a JSC should, generally, apply also to a SJSC.	Subject to corporate income tax in Poland. The standard corporate income tax rate is currently 19%. The lower tax rate of 9% is allowed only for (i) "small taxpayers" with an annual turnover not exceeding EUR 2,000,000, and (ii) new taxpayers, with exceptions, but only in the first year of business activity). Income from capital is excluded from the lower tax rate.
Thin capitalization	The comments referring to a JSC should, generally, apply also to a SJSC.	Interest deductibility restrictions are applicable not only to financing from related entities, but also to financing unrelated parties. The annual limit of deductibility of the amount of interest and other debt financing costs is calculated in reference to 30% of EBITDA for a tax year, as defined in tax law. The limitation applies to the excess of debt financing costs over the taxable interest income (including capitalized interest and other revenues economically equivalent to interest) in a tax year. However, the limit is applicable only to the excess of debt financing costs over interest income exceeding the threshold of PLN 3,000,000. Non-deducted costs may be deducted within the next five tax years, in accordance with the general rules.
Withholding tax	The comments referring to a JSC should, generally, apply also to a SJSC.	There is 20% withholding tax on interest and royalties. Payments of interest and royalties to a direct 25% or more shareholder / daughter company from the EU / EEA may be, under certain conditions, exempt from taxation. As a rule, withholding tax applies to dividends (19%) distributed from a JSC. Payments of dividends to a direct 10% or more shareholder may be, under certain conditions, exempt from taxation. A new withholding tax regime may apply beginning from 1 July 2021 with respect to payments exceeding PLN 2,000,000 per annum. Unless certain requirements are met, a JSC will be obliged to withhold the tax on such payments and it will be possible to apply for a refund in special WHT refund proceedings.
Tax liability	The comments referring to a JSC should, generally, also to a SJSC.	A JSC is liable for its tax obligations. Shareholders, as a rule, are not liable for the obligations of a JSC.

ITEM	BRANCH	LIMITED LIABILITY COMPANY
	CORPORATE	
Legal status	Organizational unit of the "parent company" with no legal personality. Any contract concluded with a third party is in fact concluded by its "parent company", represented by its representative in the branch. A branch may start its activity only after registration in the National Court Register.	Independent entity being a legal person. LLC becomes a legal person as of the day of its registration in the National Court Register. However, in the period between the incorporation (i.e. execution of the articles of association) and registration, it is regarded as a "company in formation" with the ability to enter into transactions
Shareholder(s)	N/A	LLC may be established either as a sole-shareholder company or a multi-shareholder company (with one restriction: LLC may not be formed solely by another single-shareholder limited liability company).
Governing bodies	No separate governing bodies. Person(s) representing the branch in Poland must be appointed. Persons representing the "parent company" are also authorized to sign on behalf of the branch, unless regulations applicable to the "parent company" state otherwise.	Management Board Supervisory Board (optional) Shareholders' Meeting
Minimum legal representative requirements and powers	The "parent company" should appoint at least one individual who will represent the "parent company" while acting through the branch. The law does not specify the minimum scope of powers of the branch representative - the "parent company" should define such scope of powers in a power of attorney granted to the branch representative.	LLC must have a management board which may be composed of one or several individuals. The powers of the management board are regulated by the Commercial Companies Code and cover the management of the affairs of the company and its representation. The rights of a member of the management board to manage the affairs of the company and to represent it cover all court proceedings and out of court dealings of the company.
Minimum "investment"	There is no requirement to make a minimum investment in the branch. However, the "parent company" should ensure that the branch has enough funds to start its business activity in Poland. The value of the "investment" should be established on case-by-case basis.	The minimum value of the share capital in LLC is PLN 5,000 (approximately USD 1,400) and the minimum value of one share is PLN 50 (approximately USD 14). The entire share capital should be paid up in full before the registration of the company in the National Court Register. Otherwise, the comments referring to a branch apply also to LLC.
Scope of business activity	Business activity cannot go beyond the scope of business activity carried out by the "parent company".	Decided by the shareholder(s) in the Articles of Association.
Legal liability	The "parent company" is liable towards third parties for the branch's actions.	A limited liability company is liable towards third parties for its actions. Shareholder(s) are not liable for the obligations of the limited liability company.
Dividends	There is no legal requirement for the branch to pay dividends. Since the branch is in fact an organizational unit of the "parent company", the profits earned by the branch are the profits of the "parent company".	According to the Commercial Companies Code, a shareholder is entitled to a share in the profits specified in the annual financial statement and allocated under a resolution of the general meeting for distribution. The shareholders may however decide to keep the profits in the company if they do not want to be paid dividends. In order to pay dividends the company must have net profits (which do not have to be used for covering the balance sheet losses) and the ordinary shareholders' meeting must adopt a resolution to distribute the profits among the shareholders. The Commercial Companies Code provides for specific rules regarding the profits designated for the distribution of dividends and advances on dividends.
Time to fully set up	App. 1 to 2 months.	App. 1 to 2 months. (note: entity is operational immediately upon execution of the articles of association, i.e. typically within 1-3 weeks of commencement of the project).

ITEM	BRANCH	LIMITED LIABILITY COMPANY
MAIN REGISTRATION AND REPORTING REQUIREMENTS		
Court registration	Yes	Yes
Registration in the Statistical Office	Yes	Yes
Registration in the Central Register of Beneficial Owners	No	Yes
General tax registration	The branch is not a separate taxpayer. The "parent company" is a taxpayer. Obtaining a tax identification number (NIP) for the "parent company" is necessary e.g. for the purposes of VAT, CIT, payroll tax. It should be obtained before the first VAT-able activity is performed, within 7 days from the date of entry of the branch into the Polish commercial registry, within 7 days from employment of the first employee, whichever is first. The branch itself may be a separate tax and social security remitter. In such case the branch should also obtain a tax identification number (NIP), separate from the “parent company”.	Generally, LLC obtains a tax identification number upon registration in the commercial registry. Within 21 days from the date of registration of the LLC in the commercial registry, the updated tax information should be filed with the tax office. LLC may obtain the tax identification number also before its registration in the commercial registry, if necessary.
VAT registration	The branch is not a separate VAT payer. The "parent company" is a VAT payer. VAT registration of the "parent company" is required before the first VAT-able (taxable) activity is performed; VAT registration is not required where only VAT-exempt activities will be performed.	VAT registration is required before the first VAT-able (taxable) activity is performed; VAT registration is not required where only VAT-exempt activities will be performed or (ii) where VAT-able activities will be performed, but their value will not exceed PLN 200,000 annually net of VAT.
Corporation Tax registration	There is no formal registration for CIT for a "parent company" being a separate taxpayer. General tax identification number of the “parent company” is used for CIT purposes.	The comments referring to a branch apply also to LLC.
Accounting and documentation	A branch is obliged to keep accounting books and VAT records. Therefore, there will be a need to employ professional accountants or to appoint an external accounting firm.	LLC is obliged to keep accounting books and VAT records. Therefore, there will be a need to employ professional accountants or to appoint an external accounting firm.

ITEM	BRANCH	LIMITED LIABILITY COMPANY
Payroll registration	If a branch is an employer, it is to be obliged to act as a tax remitter withholding tax advances for the personal income tax of individuals engaged based on employment agreements / civil law agreements. The prior separate tax registration of the branch for payroll purposes is required. A branch also acts as a remitter/withholding agent of social security contributions. The branch then files monthly returns and pays withheld social security contributions. The branch must register itself as a remitter of social security contributions and register for the social security contributions of each individual with respect to whom the branch acts as a remitter (7-day deadline).	LLC acts as a remitter/withholding agent of tax advances for personal income tax and social security contributions of individuals engaged based on employment agreements / civil law agreements. No need for additional tax registration of LLC for payroll purposes. LLC then also files monthly returns and pays withheld social security contributions. LLC must register itself as a remitter of social security contributions and register for the social security contributions of each individual with respect to whom the branch acts as a remitter (7-day deadline).
Corporate filings	The branch is obliged to file with the National Court Register its annual financial statement and a copy of the statement regarding approval of the financial statement within 15 days of the date of approval of the financial statement. The branch is required to notify the National Court Register of all changes with respect to the information disclosed in the National Court Register.	The company is obliged to file with the National Court Register its annual financial statement, a copy of the annual shareholders' meeting resolution regarding the approval of the annual financial statement and the net profit distribution/covering of losses, and a report on the company's activity within 15 days of the date of approval of the financial statement. LLC is required to notify the National Court Register of all changes with respect to the information disclosed in the National Court Register.
Tax returns and Tax filings	As a rule, general CIT tax returns should be filed annually and tax advances paid monthly (as an exception there exists the possibility to opt for quarterly CIT tax advances (i) in the first tax year of the taxpayer or (ii) by "small taxpayers" whose annual turnover (including the amount of VAT due) did not exceed in the previous tax year an amount corresponding to the equivalent of EUR 2,000,000, expressed in PLN). However, as regards quarterly CIT advances, the practice of the tax authorities towards the parent companies running a business through its branch in Poland is not clear and uniform. Monthly VAT returns should be filed and monthly VAT payment should be made (exceptions possible - optional quarterly VAT returns in case of taxpayers not exceeding an annual turnover of EUR 1,200,000, but it is allowed only after the lapse of 12 months from the VAT registration).	The comments referring to a branch apply also to LLC.
Local bank account	Payments arising from business activity conducted should be made or received through a bank account, whenever: 1) the other party to the transaction is an entrepreneur, and 2) the one-time value of the transaction, regardless of the number of payments arising therefrom, exceeds the equivalent of PLN 15,000 (approximately USD 4,200). Local bank account (opened in a bank seated in Poland or in a local cooperative savings and credit union) is required to be able to receive VAT refund.	The comments referring to a branch apply also to LLC.

ITEM	BRANCH	LIMITED LIABILITY COMPANY
TAX		
Summary	There are no significant tax differences between a branch and LLC. In practice, in some cases it may be easier to carry out tax matters of LLC as compared to a branch. For instance, in practice it may prove to be more difficult to properly evidence and record for tax purposes transactions between a branch and a parent in a way that accurately reflects the arms length basis.	
Transfer tax	No transfer tax on the establishment of a branch. No transfer tax on "loans from a shareholder".	0.5% transfer tax is due on the value of the share capital of LLC (may be mitigated to some extent). Loans from a shareholder are exempt from 0.5% transfer tax.
Corporate income tax	Subject to corporate income tax in Poland. The standard corporate income tax rate is currently 19%. Lower tax rate of 9% allowed only for (i) "small taxpayers" with an annual turnover not exceeding EUR 2,000,000, and (ii) new taxpayers, with exceptions, but only in the first year of business activity). Income from capital is excluded from the lower tax rate. However, as regards the lower tax rate, the practice of the tax authorities towards the parent companies running a business through its branch in Poland is not clear.	Subject to corporate income tax in Poland. The standard corporate income tax rate is currently 19%. The lower tax rate of 9% is allowed only for (i) "small taxpayers" with an annual turnover not exceeding EUR 2,000,000, and (ii) new taxpayers, with exceptions, but only in the first year of business activity). Income from capital is excluded from the lower tax rate.
Thin capitalization	The interest deductibility restrictions are accordingly applicable to a "parent company" running a business in Poland for the branch, including internal transactions made by the "parent company" related to the branch. Additionally, as a rule, the tax authorities may require that the parent provide the branch with "capital" financing sufficient for the contemplated scope and size of the branch's activities.	The interest deductibility restrictions are applicable not only to financing from related entities, but also to financing unrelated parties. The annual limit of deductibility of the amount of interest and other debt financing costs is calculated in reference to 30% of EBITDA for a tax year, as defined in tax law. The limitation applies to the excess of debt financing costs over the taxable interest income (including capitalized interest and other revenues economically equivalent to interest) in a tax year. However, the limit is applicable only to the excess of debt financing costs over interest income exceeding the threshold of PLN 3,000,000. Non-deducted costs may be deducted within the next five tax years, in accordance with the described rules.
Withholding tax	As a rule, there is no withholding tax in case of payments by a branch for the benefit of a parent. In case of payments for the benefit of other entities, the standard rules regarding withholding tax apply (including potential exemptions in case of interest / royalty payments to qualified parent companies of the branch's parent).	There is 20% withholding tax on interest and royalties. Payments of interest and royalties to a direct 25% or more shareholder / daughter company from the EU / EEA is exempt from taxation. As a rule, withholding tax applies to dividends (19%) distributed from LLC. Payments of dividends to a direct 10% or more shareholder is exempt from taxation. New withholding tax regime will apply beginning from 1 January 2020 with respect to payments exceeding PLN 2,000,000 per annum. Unless certain requirements are met, LLC will be obliged to withhold the tax on such payments; particular taxpayers (or LLC, if burdened by the amount of tax) will be able to apply for refund in special WHT refund proceedings.
Tax liability	In fact, the parent company is liable for the tax liabilities of its branch.	LLC is liable for its tax obligations. Shareholder(s), as a rule, are not liable for the obligations of a limited liability company.

13. About the authors, publisher and partner

13.1. Authors

Piotr Mieczkowski

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Piotr has 17 years of experience in implementing projects in the new technologies sector. Currently he is heading the work of the Digital Poland foundation which promotes digitalisation as an element of Poland's competitive advantage. Author or co-author of many reports and digital policies concerning new technologies, including artificial intelligence. Co-creator of the strategic AI programme INFOSTRATEG, which supports the implementation of AI in Poland with the amount of PLN 840 million.

Piotr has practical experience in digital transformation, business processes, strategic consulting or ICT solution design. He has up-to-date knowledge on issues such as artificial intelligence, RPA, big data, cloud computing, IoT, 5G or smart cities. Piotr previously worked for a global consulting company (EY), for a media company, mobile and fixed-line operator (Cyfrowy Polsat, Plus, Orange) and for a global energy company (Shell).

He is a graduate of the Faculty of Electronics and Information Technology at the Warsaw University of Technology and the Faculty of Management at the Warsaw University. He holds several specialist technical certificates.

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KPMG

13.2. About the publisher

digitalpoland

Digital Poland Foundation

As a non-profit organisation, the Foundation takes action to make Poland one of the world's major centres of digital innovation. Through its activities it transforms digital challenges facing Poland into opportunities for the domestic economy. Without the active participation of society the technological and digital development of our country will not succeed, therefore the founders of the foundation focus primarily on education, organising a number of educational events such as the Digital Festival and promoting new technologies in everyday life and business. In the eyes of foreign investors, the foundation presents Poland as an excellent place for conducting research and development activities and developing innovations of international scope. The foundation also conducts extensive activity in the field of research and analysis of public affairs, publishing a dozen or so free reports a year. In all its activities the foundation focuses on cooperation, creating a network of contacts and close relations, because only thanks to cooperation we are able to make Poland one of the world's leading digital innovation hubs. The Digital Poland Foundation invites to cooperation all those interested in implementing educational and innovative projects that will change the Polish economy. Among the founders and strategic partners are such companies as Baker McKenzie, Daftcode, Ghelamco, KPMG, MCI Capital, Microsoft, Polpharma, Ringier Axel Springer, Schneider Electric, Symfonia, T-Mobile, TVN Discovery Group, UPC or Visa. The partners of the Digital Poland Foundation are Prowly and Stroer.

Want to learn more? | info at digitalpoland.org | Visit digitalpoland.org/en

A cross-industry, nationwide initiative with focus on results

We are the Digital Poland Foundation

A cross-industry, nationwide initiative with focus on results

We share and lead digital initiatives, work together, create network of contacts and promote digitalisation in the leading media outlets

We help turn the digital challenges into opportunities for the Polish economy and society by creating best digital policies

We promote Poland as a leading digital innovation hub

We've a proven track record. Example of our initiatives

Digital Festival

Digital Shapers

Digital Policies

FinTech hub

AI Hub

Smart Cities & buildings

eHealth

Digital Connectivity

Study Tours

Digital Marketing Hub

Digital CEO

Startup Ecosystem

Digital Fitness

Digital Summit

Poland as a R&D Hub

Digital education

13.3. About the partner

Polish Investment & Trade Agency
PFR Group

The **Polish Investment and Trade Agency** (PAIH) is a state-owned organization supporting FDIs in Poland. It's also part of PFR Group.

Our experienced team with a practical attitude and excellent business acumen will ensure your investment process is as smooth as possible, with the assistance of a dedicated Project Manager.
Want to learn more? | Visit paih.gov.pl/en

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- Tailor-made macroeconomic, HR, legal and sectoral datapacks
- Information about different forms of public funding
- Location consulting; online database of investment plots
- Identification of potential partners and suppliers
- Facilitating contacts with local and central government
- Organisation of site visits for prospective investors
- Introduction to start-ups and technology providers, organising B2B meetings
- Support in building partnerships with R&D institutes and innovation centres
- Follow-up services post completion of the project, media relations aftercare

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