The AI Sector

in the Wroclaw Agglomeration 2021

ARAW

The AI Sector
in the Wroclaw Agglomeration 2021

This report has been published by ARAW in cooperation with the City of Wroclaw within the “Przedsiębiorczy Wroclaw” project, together with ITCorner, the Software Development Association Poland (SoDA), the Association of Business Service Leaders in Poland (ABSL).

The project has been supported by strategic partners – JLL, Randstad, SDZLEGAL SCHINDHELM.

The content of this report was written and designed by Clipatize – an international digital agency supporting top global brands and fast-growing high-tech companies in meaningful B2B communications. For more information, visit: ***clipatize.com***

Wroclaw Agglomeration Development Agency
pl. Solny 14
50-062 Wroclaw
Poland
+48 71 78 35 310
araw@araw.pl
araw.pl

Table of Contents

Introduction

The AI Sector in the Wroclaw Agglomeration 2021

Foreword

Artificial Intelligence can be both a cause for concern and an excellent opportunity to increase our innovation.

In the Wroclaw metropolitan area, we see that increasing competitiveness can improve the quality of life of our residents. The process of AI development is already taking place in the region thanks to our universities, the IT sector, and projects carried out by leading companies and startups.

To go a step further, we decided to deepen our understanding of the local AI sector and provide up-to-date data to facilitate the development of the entire local business ecosystem. These insights are essential, as we want the Wroclaw agglomeration to become a leading hub of AI applications and competences in Poland and Europe.

I want to thank all the companies and experts who participated in the study, and the partners who actively supported this report's preparation. As a result, we can share with you this in-depth analysis of companies developing AI solutions in the Wroclaw agglomeration and set the direction for the future.

Jacek Sutryk

The Mayor of Wroclaw

Report rationale and contents

This study aims to deliver a thorough analysis of the AI sector in Wroclaw: its agents, their clients, technologies used, access to specialists, R&D funding, and cooperation with the scientific community.

The main objective of the report is to better understand the situation today and contribute to the future development of the local AI ecosystem.

- Starting with a global overview of the tech industry in Wroclaw ***(Chapter 1)***, the report then focuses on the profile of local AI companies ***(Chapter 2)***.
- ***Chapter 3*** outlines the most common traits of their clients and lines of business. It also presents a few examples of solutions developed and used by companies in Wroclaw.

- *Chapter 4* explores technological trends among AI companies in Wroclaw – today and in the near future.
- *Chapter 5* discusses the issue of the AI workforce in Wroclaw.
- *Chapter 6* sheds light on funding R&D initiatives and cooperation between the sector and academia.
- *Chapter 7* looks at why AI companies chose to invest in Wroclaw and how further development could be supported.
- Finally, *Chapter 8* provides practical information and suggestions on how to start a business in Wroclaw.

Study experts

The conclusions were accompanied by commentaries from industry experts: **Grzegorz Rudno-Rudziński**, President of the Management Board of ITCorner, Managing Partner at Unity Group; **Artur Sawicki**, The Association of Business Service Leaders (ABSL), VP & General Manager at Infor Poland; **Karol Chymosz**, Software Development Association Poland (SoDA), Strategy Director at SoftServe Poland; and **Dr Magdalena Okulowska**, President of the Wroclaw Agglomeration Development Agency (ARAW).

Study partners

JLL provides commercial property and investment management services in over 80 countries. The company seeks to transform its industry through technology-based innovation.

For more information, visit:
us.jll.com

RANDSTAD is a multinational HR consulting firm supporting businesses in finding the right talent – in 39 countries globally and over 100 offices in Poland.

For more information, visit:
randstad.pl

SDZLEGAL SCHINDHELM is a member of the international SCHINDHELM network of law and tax firms serving business clients in 28 locations in 13 countries.

For more information, visit:
pl.schindhelm.com

Software Development Association Poland (SoDA) is an association of 130 Polish technology companies. SoDA integrates and develops the Polish IT community and represents its interests locally and worldwide, promoting Poland as a prime location for software development and IT services.

For more information, visit:
sodapl.com

ITCorner is a community of over 100 Polish tech companies. It connects IT business owners, enabling them to share knowledge and experiences. ITCorner also creates space for joint business development activities, international cooperation, and building synergies between member companies.

For more information, visit:
itcorner.org.pl

The Association of Business Service Leaders (ABSL) represents business services providers in Poland. It unites over 200 of the largest companies in the sector and sets the standard and direction for growth in the industry, which now employs around 350,000 people.

For more information, visit:
absl.pl

Study organiser

Established in 2005, The **Wroclaw Agglomeration Development Agency (ARAW)** is an institution owned by the City of Wroclaw and 29 other municipalities. ARAW aims to promote the region, support its economic development, attract foreign investments, and foster a local innovation ecosystem. For more information, visit: ***araw.pl***.

Research methodology

Conducted by an external research team in June 2021, the study used two complementary research methods:

Quantitative research: CAWI - Computer Assisted Web Interview	Qualitative research: IDI - Individual In-depth Interviews
This part of the study consisted of an online questionnaire, which was active for three weeks. Together with partners (SoDA, ITCorner, and ABSL), ARAW invited around 330 Wroclaw-based IT companies to fill it in, with a particular focus on targeting businesses delivering AI solutions or planning such activities. Other organisations could join the study by registering their interest on a promoted landing page – three companies joined through this channel. A total of 74 companies completed the anonymous questionnaire, with care taken to avoid duplicate responses. Out of this group, 46 companies had already developed AI solutions, 21 want to start using AI within the next three years, and seven have no such plans.	Further research, based on the quantitative findings, was conducted with representatives of the local AI scene to provide insight into their situation, motivation, and opinions. It consisted of interviews with single respondents – business decision makers from different types of organisations (see below). The study comprised six interviews, all of which followed an identical structure and took place online.

The study focused on three types of organisations:

- **Software houses and IT consultancies** delivering related services;
- **Startups** using AI technologies to develop and improve their products;
- **Local Business Process Outsourcing (BPO), Information Technology Outsourcing (ITO), and Shared Services Centers (SSC)** using AI to develop solutions and improve their operations or offering.

All data from the survey and interviews was used anonymously and collectively to ensure maximum confidentiality and participant trust.

Key Findings

The AI Sector in the Wroclaw Agglomeration 2021

LOCAL AI COMPANIES AT A GLANCE

AI companies are founded and run locally

76% of the surveyed AI companies have their HQs in Wroclaw. Of these, 37% have also opened branches in other Polish cities and even abroad. 72% are mainly owned by Polish capital.

Local AI companies are SMEs

The majority of the surveyed companies employ fewer than 250 staff (76%) and have annual revenue of up to PLN 50 mln (76%). They primarily identify as software houses and startups (41% and 28%, respectively).

In terms of revenue from AI solutions, there is room for growth

Fewer than 1 in 4 companies generate more than 70% of their revenue from AI solutions. For the majority of those surveyed, AI generates less than 30% of their total revenue.

Pandemic had a positive impact on local AI companies

46% of the AI companies said the pandemic had a "positive" impact on decisions related to AI solutions, while 43% described it as "neutral". Companies delivering solutions to the manufacturing industry experienced some slowdown in 2020, but in 2021 they recovered or even exceeded usual levels of business.

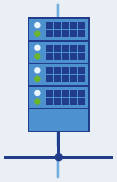
CLIENTS & SECTORS THEY SERVE

Local SMEs serve large clients located in the EU and Poland

Over 61% of the clients for AI products and solutions are large businesses (250 or more employees). 39% of clients are located in Poland and 36% in the EU. The most popular regions outside Europe are North America and Asia-Pacific.

Wroclaw's specialty lies in squeezing more out of data

The most important AI application areas include data exploration (over 65% of the respondents offer this element), Big Data and advanced analytics (50%), and image processing (46%).



Local AI companies are increasingly focusing on product development

Over 50% of the surveyed companies deliver AI solutions in the form of products, both SaaS and On-premises. Many interviewees confirmed plans for further productisation of their AI offer. However, the significance of project and team outsourcing remains strong.

TECHNOLOGIES

Python and C-family are the most popular programming languages

Python is unquestionably the most popular programming language among companies in Wroclaw, and will remain so over the next three years. C/C++/C# comes second and will also remain strong in the future. Go, Rust, and Lisp are among the languages that will take off in the coming few years.

The most common frameworks include PyTorch/Torch and TensorFlow

PyTorch/Torch and TensorFlow are the most popular frameworks, and are currently used by 52% of the surveyed AI companies. They will remain important over the next three years, while the framework to see the highest upswing in popularity will be Apache Mahout.

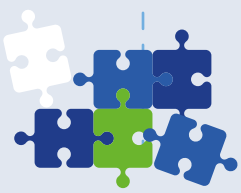
AI SPECIALISTS & TEAMS

AI businesses prefer to hire more experienced specialists

Respondents prefer to hire mid-level and senior AI specialists. They describe sourcing them as “difficult” or “very difficult”. Juniors are easier to find, but they are sought after by only a quarter of companies. One interviewee estimated that before a graduate without commercial experience starts generating revenue, their training may take up to two years and cost PLN 250,000.

AI teams in Wroclaw have on average 8 members

The most popular size of an AI team is between three to five members, but some local companies have teams of 20+ AI specialists. Women make up approximately 25% of AI team members.



Almost all companies plan to expand their AI teams within the next year

The majority of respondents plan to hire more than two AI specialists. The most popular methods of candidate sourcing include external recruitment and in-house training and skills development.

R&D AND COOPERATION WITH THE SCIENTIFIC COMMUNITY

Diverse sources of R&D funding

More than 90% of the surveyed companies use their own resources to finance activities related to new AI solutions. They also rely on other forms of funding - mostly from strategic investors, public funds, and research grants.

Ties with the local scientific community are going from strength to strength

Over 67% of the surveyed companies cooperate or plan to cooperate with local universities. They co-organise courses and internships for students, run joint R&D activities, and develop new commercial solutions. Some local companies employ specialists who also work as academic researchers.

AI IN WROCLAW: CHALLENGES AND OPPORTUNITIES

It was a good decision to choose Wroclaw to invest in the AI business

The vast majority of respondents are “satisfied” (39%) or “very satisfied” (46%) with the decision to start and run their tech business in Wroclaw. 79% plan to increase their investment in AI solutions in the future.

The spirit of cooperation is evident

Despite sometimes competing for the same clients, AI companies in Wroclaw perceive each other as partners, not rivals. They often cooperate on projects, share knowledge, lend each other specialists, and carry out joint business development activities.

Even more specialists will be needed to ensure the growth Wroclaw’s AI sector

Dynamic development of the tech sector in Wroclaw means that AI companies need access to even more specialists – this factor was mentioned by over 56% of respondents. 67% of companies said they are worried about increasing labour costs.

There are many reasons to invest in the AI sector in Wroclaw

For the majority of respondents, Wroclaw felt like a natural choice to start an AI business. They have either lived here before (70%) or run other tech business activities, where adding the AI component was a logical step. Other key reasons include good access to a qualified workforce, Poland’s EU membership, quality business infrastructure, and the presence of numerous universities.

Glossary

For the purposes of this study, we define AI as software, systems, and machines that can imitate human intelligence to perform tasks and gradually improve their operation using collected data.

In the study, we refer to the following applications of Artificial Intelligence:

- **Automatic planning & scheduling** – automating the processes and reasoning required for developing, implementing, and revising plans of action.
- **Big data, business intelligence, advanced analytics** – solutions designed to extract insights from large volumes of data to improve decision making.
- **Computer vision** – a field of AI focused on training computers to understand and interpret digital images and videos and automate related tasks.
- **Data exploration** – using data visualisation and statistical techniques to identify, understand, and describe characteristics of unstructured datasets.
- **Expert systems** – an AI-based computer programme solving complex problems within a specialised domain and emulating the decision-making ability of a human expert.
- **Image processing** – processing digital images through an algorithm for data visualisation, improving image quality and retrieval, object measurement, and pattern recognition.
- **Industrial process control** – using AI for process control in manufacturing, improving data processing, and empowering process operators with enhanced decision support.
- **Machine learning for robots** – an aggregate of ML techniques allowing robots to acquire new skills or adapt to their environments.
- **Machine translation** – a process of translating text from one language to another by computer software without human involvement.
- **Natural language processing** – a technology enabling computers to understand and respond to text and speech in a similar way a human would do.
- **Optical character recognition** – an AI-based method of digitising printed or hand-written texts so that they can be stored compactly, organised, searched, and used.
- **Recommender systems** – an algorithm-based technology helping users discover relevant products and services. Commonly used in e-commerce or streaming media services.
- **Risk assessment, forecasting, and fraud detection** – systems processing data to recognise patterns, generate predictions, and make automated finance, insurance, or risk management decisions.
- **Speech recognition** – methodologies and technologies that enable recognising and translating spoken language into text by computers.
- **Technologies based on fuzzy logic** – systems designed to solve problems by considering all available input and making the best possible decision.

1 Introducing the AI Landscape in Wroclaw

With more than 1,200,000 inhabitants in the metropolitan area[1], Wroclaw is the largest urban centre in southwestern Poland.

The city has a strong and diversified economy, predominantly based on knowledge enterprises providing professional, scientific, and technical services. In the decade between 2006 and 2016, Wroclaw's GDP per capita has doubled[2], making it the fastest-growing subregion in Poland at that time.

Rapid economic progress has also been reflected in the falling unemployment rate, which has decreased from 5.5% in 2010 to 1.7% in November 2019[3]. This favourable situation has been attracting international talent, as there are approximately 60,000 employees[4] and ***8,200 students***[5] from around the world living in Wroclaw.

An overview of the IT sector in Wroclaw

Conveniently located equidistant from Warsaw, Berlin, and Prague, the city has become a major technological hub in the CEE region. ***With over 36,000 specialists***[6], the IT sector is one of the city's strategic sources of employment. This makes Wroclaw and Lower Silesia ***the second largest technology hub in Poland***[7]. And, according to the findings of Startup Poland[8], the capital of Lower Silesia is also the second largest startup ecosystem in the country.

Tech companies in Wroclaw provide various services, so it is difficult to single out one area of specialisation in the local market. The most popular categories include web development and IT consulting, but 20% of companies surveyed in the study also highlighted the provision of AI technologies.

The majority of Wroclaw-based IT companies are small and mid-sized (44% and 33%, respectively). They operate in all business models – from startups to software houses and BPO/SSC/ITO centres[9].

1. Wroclaw. Driven by Knowledge, People & Innovation, published by Wroclaw Agglomeration Development Agency (ARAW), 2020.
2. Ibid.
3. Ibid.
4. Ibid.
5. ***Studenci zagraniczni w Polsce 2020***. Study in Poland, 2020.
6. ***IT Sector in Wroclaw 2019***, report by Wroclaw Agglomeration Development Agency, 2019.
7. ***Employment in high-tech sectors by NUTS 2 regions***. Eurostat, 2020.
8. The Polish Tech Scene. 5 Years, report by Startup Poland, 2019.
9. Ibid.

Wroclaw's technology scene in numbers

200+	550+	110	50+	18
startups based in Wroclaw	tech events each year	large R&D and IT centres	accredited labs	incubators

Source: Previous surveys and research by the Wroclaw Agglomeration Development Agency (ARAW)

What stands out is the fact that the Wroclaw agglomeration has the highest concentration of tech entrepreneurs in Poland. According to The Polish Tech Scene 2019[10], there is one startup per 4,500 Lower Silesians, proving how abundant the region is in tech entrepreneurial talent.

The same study found that Wroclaw is home to 17% of AI startups in Poland, which makes it the second city after Warsaw (23%). This number goes even higher in the case of Analytics and Business Intelligence, as 1 in 4 Polish startups in this vertical comes from the capital of Lower Silesia. Other verticals with significant representation in Wroclaw include Big Data (18%), Industry 4.0 (18%), and Internet of Things (13%)[11].

Higher education and the AI talent pool

Wroclaw is the third largest academic centre in Poland. In the 2020/21 academic year there were approximately ***108,000 students in Wroclaw***[12], out of which over 35,000 majored in IT, science, and engineering[13]. In 2020, 28 local higher education (HE) providers brought over 26,000 graduates to the local ***labour market***[14].

Companies located in Wroclaw are taking advantage of this setup. ***Research in 2019 showed***[15], 82% of surveyed IT corporations highlighting access to a qualified workforce as one of the top reasons for their decision to invest in the city. This aspect was also important for 60% of mid-sized companies operating in Wroclaw.

According to a National Information Processing Institute report[16], over 18% of all AI-related theses written in Poland between 2010-2018 were created in Wroclaw. This is the highest number in the entire country, which makes it evident that the city is ready for the future of AI.

10. The Polish Tech Scene. 5 Years, report by Startup Poland, 2019.
11. Ibid.
12. Szkolnictwo wyższe w roku akademickim 2020/2021 (wyniki wstępne). Statistics Poland, 2021. Available on: ***https://stat.gov.pl/obszary-tematyczne/edukacja/edukacja/szkolnictwo-wyzsze-w-roku-akademickim-20202021-wyniki-wstepne,8,7.html***
13. Wroclaw. Driven by Knowledge, People & Innovation, published by Wroclaw Agglomeration Development Agency (ARAW), 2020.
14. ***Higher education and its finances in 2019***. Statistics Poland, 2019.
15. ***IT Sector in Wroclaw 2019***, report by Wroclaw Agglomeration Development Agency (ARAW), 2019.
16. Rozwój sztucznej inteligencji w sektorze nauki w Polsce, report by National Information Processing Institute, 2019.

Six higher education providers confer AI courses and degrees: Wroclaw University of Science and Technology, University of Wroclaw, Wroclaw University of Applied Informatics "Horizon", WSB University, Wroclaw University of Economics and Business, and Coventry University.

Wroclaw University of Science and Technology offers an MSc programme in Artificial Intelligence, during which students can take almost 30 specialised courses. AI constitutes a vital element in a diverse range of areas, such as law, forensic studies, damage liability, aviation management, cybersecurity, or medical imaging.

Local universities regularly cooperate with businesses on new AI solutions, implementing scientific research in companies and commercialising new products. They also coordinate and participate in programmes such as the ***Level 4.0 Digital Innovation Hub Wroclaw***[17] dedicated to researching and promoting Industry 4.0 technologies, most notably AI.

Business property market

Despite rapid economic growth, Wroclaw's property market remains attractive to investors and companies looking for new locations. Real estate services provider JLL reported that in the first quarter of 2021 there were nearly 1.25 mln m2 of modern office ***space in the city***[18]. New business spaces have been appearing in popular central areas and transport hubs.

Despite a temporary COVID-19 slowdown, the vacancy rate in Wroclaw fell from 12.5% at the end of 2019 to 11.2% in ***Q2 2020***[19]. However, there is an increasing volume of sublease space available on the market, so companies looking to open a business in Wroclaw still get a wide range of choices.

Prime headline rents in Wroclaw range between €13.5-15/m2 per month, which is far more affordable than in other popular destinations in the CEE region, such as ***Warsaw (€26/m2), Budapest (€24/m2) and Prague (€23/m2)***[20].

17. Level 4.0 Digital Innovation Hub Wroclaw. Available on: ***https://www.level4dih.pl/en***
18. ***Wroclaw Real Estate 2020***. Report by JLL, 2020.
19. Ibid.
20. ***Prime headline rents of office space in selected European cities as of 1st half of 2020***, Statista, 2020.

Selected AI companies in Wroclaw

Company	Areas of specialisation			Web page
4SOFT S.A.	Artificial Intelligence / Machine Learning	Blockchain	Fintech / Insurtech	*4soft.co*
AB S.A.	Cloud Services	E-commerce	IT / Hi-tech	*ab.pl*
Alphamoon Sp. z o.o.	Artificial Intelligence / Machine Learning	Fintech / Insurtech	Business Process Automation / RPA	*alphamoon.ai*
AndonCloud Sp. z o.o.	Internet of Things (IoT, IIoT)	IT / Hi-tech	Industry 4.0	*andoncloud.pl*
Antologic	Artificial Intelligence / Machine Learning	E-commerce	Fintech / Insurtech	*antologic.com*
BCF Software Sp. z o.o.	Artificial Intelligence / Machine Learning	Big Data	Blockchain	*bcf-software.com*
byteLAKE	Artificial Intelligence / Machine Learning	Industry 4.0	Computational Fluid Dynamics	*bytelake.com*
BZB UAS	Artificial Intelligence / Machine Learning	Smart City	Aviation	*bzbuas.com*
CancerCenter.ai	Artificial Intelligence / Machine Learning	Medtech / Healthcare	Oncology	*cancercenter.ai*
CAPGEMINI POLSKA	Transport / Logistics	Automotive	Cloud Services	*capgeminisoftware.pl*
ChallengeRocket	HRTech			*challengerocket.com*
Clearcode	IT / Hi-tech	MarTech / Sales / Marketing	AdTech / Advertising	*clearcode.cc*
Clevell AI Sp. z o.o.	Artificial Intelligence / Machine Learning	Medtech / Healthcare	Defence	*clevell.ai*
Codemachine Sp. z o.o.	Artificial Intelligence / Machine Learning	Fintech / Insurtech	Transport / Logistics	*c9e.dev*
Data Courage	Analytics / Business Intelligence	Artificial Intelligence / Machine Learning	Cybersecurity	*datacourage.com*
Deviniti	Artificial Intelligence / Machine Learning	Fintech / Insurtech	Law / LegalTech	*deviniti.com*
Dolby Poland	Entertainment / Media	Analytics / Business Intelligence		*dolby.com*
DSR S.A.	Analytics / Business Intelligence	Internet of Things (IoT, IIoT)	Industry 4.0	*dsr.com.pl*
Etteplan Poland Sp. z o.o.	Automotive	Industry 4.0	Telecommunications	*etteplan.com*
GlobalLogic Poland Sp. z o.o.	Cloud Services	Internet of Things (IoT, IIoT)	Automotive	*globallogic.com/pl*
IDENTT Sp. z o.o.	Artificial Intelligence / Machine Learning	Cybersecurity	Fintech / Insurtech	*identt.pl*
Ignited S.A.	Analytics / Business Intelligence	Artificial Intelligence / Machine Learning	Big Data	*ignited.pl*
Infermedica Sp. z o.o.	Medtech / Healthcare	Fintech / Insurtech	Artificial Intelligence / Machine Learning	*infermedica.com*
Infor Polska	Artificial Intelligence / Machine Learning	Industry 4.0	Analytics / Business Intelligence	*infor.com*
KODA Bots	MarTech / Sales / Marketing	Customer Service / Chatbots	Business Process Automation / RPA	*Kodabots.com*
Look4IT Domaradzki Sp. J.	HRTech			*look4it.pl*
MasterBorn Sp. z o.o.	Artificial Intelligence / Machine Learning	Cloud Services	Fintech / Insurtech	*masterborn.com*
Micro Solutions	Biotechnology	Medtech / Healthcare	Agriculture / Farming / Food production	*microsolutions.ai*
MST Automation Sp. z o.o.	Industry 4.0	Robotics / Electronics	Artificial Intelligence / Machine Learning	*mstautomation.pl*

Company	Areas of specialisation			Web page
NDLS Sp. z o.o.	Analytics / Business Intelligence	Big Data	Industry 4.0	*newdatalabs.com*
NeuroSYS	Artificial Intelligence / Machine Learning	Big Data	IT / Hi-tech	*neurosys.com*
Nokia	Internet of Things (IoT, IIoT)	Industry 4.0	Telecommunications	*nokia.com*
nsFlow	Artificial Intelligence / Machine Learning	Industry 4.0	Robotics / Electronics	*nsflow.com*
PayEye	Artificial Intelligence / Machine Learning	Cloud Services	E-commerce	*payeye.com*
Piwik PRO	Analytics / Business Intelligence	Big Data	MarTech / Sales / Marketing	*piwik.pro*
PROA TECHNOLOGY Sp. z o.o.	Artificial Intelligence / Machine Learning	Customer Service / Chatbots	Robotics / Electronics	*proatechnology.com*
ProxiGroup Sp. z o.o.	Artificial Intelligence / Machine Learning	Internet of Things (IoT, IIoT)	Industry 4.0	*proxigroup.com*
QAD POLSKA	Cloud Services	Productivity / ERP / CRM	Industry 4.0	*qad.com*
Qualpro	TravelTech	HoReCa		*qualpro.co*
QuantUp Sp. z o.o.	MarTech / Sales / Marketing	Medtech / Healthcare	Industry 4.0	*quantup.pl*
Recostream	Artificial Intelligence / Machine Learning	E-commerce		*recostream.com*
Samelane	Edtech (EduTech)	HRTech	Business Process Automation / RPA	*samelane.com*
Scanway Sp. z o.o.	Space Tech	Industry 4.0	Agriculture / Farming / Food production	*scanway.pl*
Sente	Productivity / ERP / CRM	Industry 4.0		*sente.pl*
Smabbler	Artificial Intelligence / Machine Learning	Big Data	Analytics / Business Intelligence	*smabbler.com*
SmartLunch	FoodTech			*smartlunch.pl*
SoftServe Poland	Big Data	Cloud Services	Fintech / Insurtech	*career.softserveinc.com/poland*
Spyrosoft S.A.	Fintech / Insurtech	Automotive	Industry 4.0	*spyro-soft.com*
Stermedia Sp. z o.o.	Artificial Intelligence / Machine Learning	Cloud Services	Industry 4.0	*stermedia.ai*
Stratoflow	Artificial Intelligence / Machine Learning	E-commerce	Fintech / Insurtech	*stratoflow.com*
Taxxo / Columb Technologies S.A.	Analytics / Business Intelligence	Artificial Intelligence / Machine Learning	Fintech / Insurtech	*taxxo.pl*
Thaumatec Tech Group	Internet of Things (IoT, IIoT)	Medtech / Healthcare	Artificial Intelligence / Machine Learning	*thaumatec.com*
Unity Group	Analytics / Business Intelligence	E-commerce	IT / Hi-tech	*unitygroup.com*
Vazco	Artificial Intelligence / Machine Learning	FoodTech	Business Process Automation / RPA	*vazco.eu*
Volvo Polska Sp. z o.o.	Automotive	Transport / Logistics	Business Process Automation / RPA	*volvogroup.com*
VR TierOne	Medtech / Healthcare			*vrtierone.com*
VSTORM	Artificial Intelligence / Machine Learning	Big Data	IT / Hi-tech	*vstorm.co*
XBerry Sp. z o.o.	Artificial Intelligence / Machine Learning	Internet of Things (IoT, IIoT)	Robotics / Electronics	*xberry.tech*

2 AI Companies and Startups in Wroclaw

The study took place in June 2021, when 74 companies completed the questionnaire and six business representatives participated in IDI interviews. Out of this group, 46 companies already develop and offer AI solutions, 21 want to start using AI within the next three years, and seven have no such plans. This section presents their collective profile.

#1: Local AI companies are SMEs founded and run locally

The majority of the surveyed AI companies fit the criteria of SMEs, with 76% of them employing less than 250 members of staff. Their annual revenue is equal to or lower than PLN 50 mln (76%), which is also lower than the SME criteria defined by the EU[1].

This data is consistent with the most popular operating models indicated by the surveyed firms, as they predominantly identify as software houses (41%) and startups (28%). Responses from Business Process Outsourcing, Shared Services Centre, and IT Outsourcing companies that are primarily subsidiaries of global corporations, were far less common (13%).

Data also shows that companies are founded locally. Almost 3 in 4 companies are owned by Polish capital (72%) and have their HQs in Wroclaw (76%). Out of this group, 37% have also opened branches in other Polish cities or abroad.

Which model best characterises your company?

Fig. 1: Operating model & location. N=46

While branches of international AI businesses constitute a significant part of the study participants, there were no responses from Polish AI companies with HQs in other cities.

1. Internal Market, Industry, Entrepreneurship and SMEs, European Commission. Available on: *https://ec.europa.eu/growth/smes/sme-definition_en*

This suggests that local tech businesses are expanding to other regions of the country and not the other way round. This conclusion supports Startup Poland's observation that if a Polish silicon valley exists, it lies in Lower Silesia[2].

> *For quite some time, Wroclaw has had the reputation as a place attractive for large global businesses establishing their presence locally. So far, the city has often been considered an outsourcing centre. It is thus positive to see it becoming an interesting destination for more advanced tech solutions based on AI – and ultimately confirming its reputation as a local "silicon valley".*

Karol Chymosz

Software Development Association Poland – SoDA, Strategy Director at SoftServe Poland

#2: There is still room for growth when it comes to revenue from AI solutions

While AI technologies have been on everyone's lips, in reality, they generate less revenue for local tech companies than other business areas. Several IDI interviewees in the study highlighted this finding – and quantitative data supports it.

For most companies operating in the AI space in Wroclaw, solutions using these technologies account for less than 30% of total revenue. Fewer than 1 in 4 companies generate 70% or more of their revenue from AI-driven products and services.

How much of your company's total annual revenue comes from AI solutions and services?

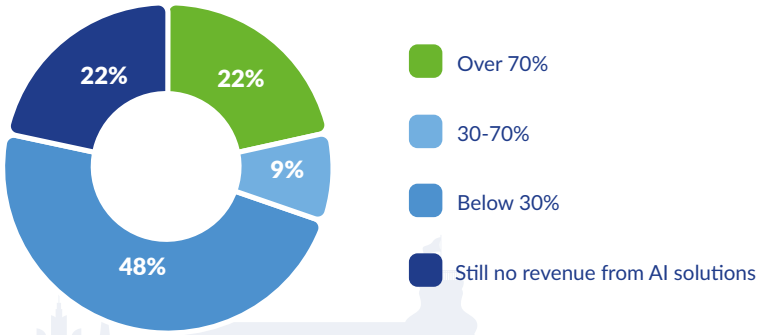


Fig. 2: Revenue from AI. N=46

2. The Polish Tech Scene. 5 Years, report by Startup Poland, 2019. Available on: *https://startuppoland.org/raporty/*

According to several interviewees, IT companies highlight Artificial Intelligence in their offer, as these are the current top 'buzzwords'. However, its actual use often boils down to adding features rather than developing standalone solutions. Digital transformation is costly and time-consuming, so clients are often reluctant to invest in new technologies like AI. Nonetheless, this situation is already changing and will further evolve due to the pandemic.

Companies that derive most of their revenue from AI are either already offering these products or working on creating them. Profits generated thanks to delivering other IT services help finance new initiatives (more on that topic in ***Chapter 6***).

#3: The pandemic had a positive impact on local AI companies

Despite an overall economic slowdown, the pandemic has not stopped decisions related to AI offerings made by IT companies in Wroclaw. Some 46% of the surveyed AI businesses said the pandemic has had a "positive" impact on decisions related to AI solutions, while 43% described it as "neutral".

Companies delivering AI solutions to manufacturing experienced some slowdown in 2020 but have recovered or exceeded normal levels of business in 2021. Several interviewees mentioned project postponements, while this was somewhat offset by increased interest in their remote work products and production management tools. Despite an initial freeze, at some point previously-delayed work resumed at a faster pace. This saw increased cooperation between local AI companies as they supported each other to ensure timely deliveries.

> *The times we're experiencing during the pandemic require quick decision-making, often based on insufficient data. Artificial Intelligence helps to make it happen. I believe that the pandemic will accelerate the development and implementation of solutions using AI algorithms created in Wroclaw – and the study results confirm this trend.*

Artur Sawicki

VP & General Manager at Infor Poland and a member of ABSL – The Association of Business Service Leaders

3 Clients and Business Sectors

This section discusses the report findings on the clients and business sectors served by AI companies in Wroclaw. It also presents a few examples of solutions developed and implemented locally.

#1: Clients of local AI companies are large businesses located in Poland and internationally

The unquestionable majority of the clients served by local AI companies are large enterprises. Over 61% of them employ 250 or more staff, while SMEs account for only 35% of the client base. Individual consumers amounted to fewer than 1 in 20 clients.

How big are your clients' organisations?

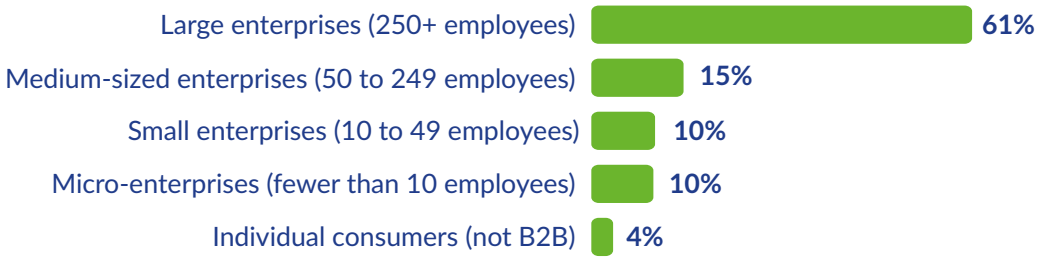


Fig. 3: Clients of Wroclaw's AI companies. N=37. Of the companies already offering AI, 20% stated that they don't have clients for this offer yet. The analysis focused on companies that have AI clients.

The clients of AI companies that participated in the study tend to be located within the country or EU. Some 39% of them are located in Poland and nearly 36% in the European Union.

Which countries do clients of your AI solutions come from?

Fig. 4: The location of AI clients. N=37. Of the companies already offering AI, 20% stated that they don't have clients for this offer yet. The analysis focused on companies that have AI clients.

Other regions served by the study participants included:

- North America – mainly USA (indicated by 15 companies);
- Asia-Pacific – five companies;
- Africa and the Middle East – both mentioned once.

Despite serving clients in diverse locations, IT companies in Wroclaw aren't fully satisfied with their AI sales development. Altogether, 46% of the respondents disagree or strongly disagree with the statement that they are happy about their AI client growth rate. Significantly, 67% of them oppose the assertion that acquiring new clients for AI solutions requires little effort.

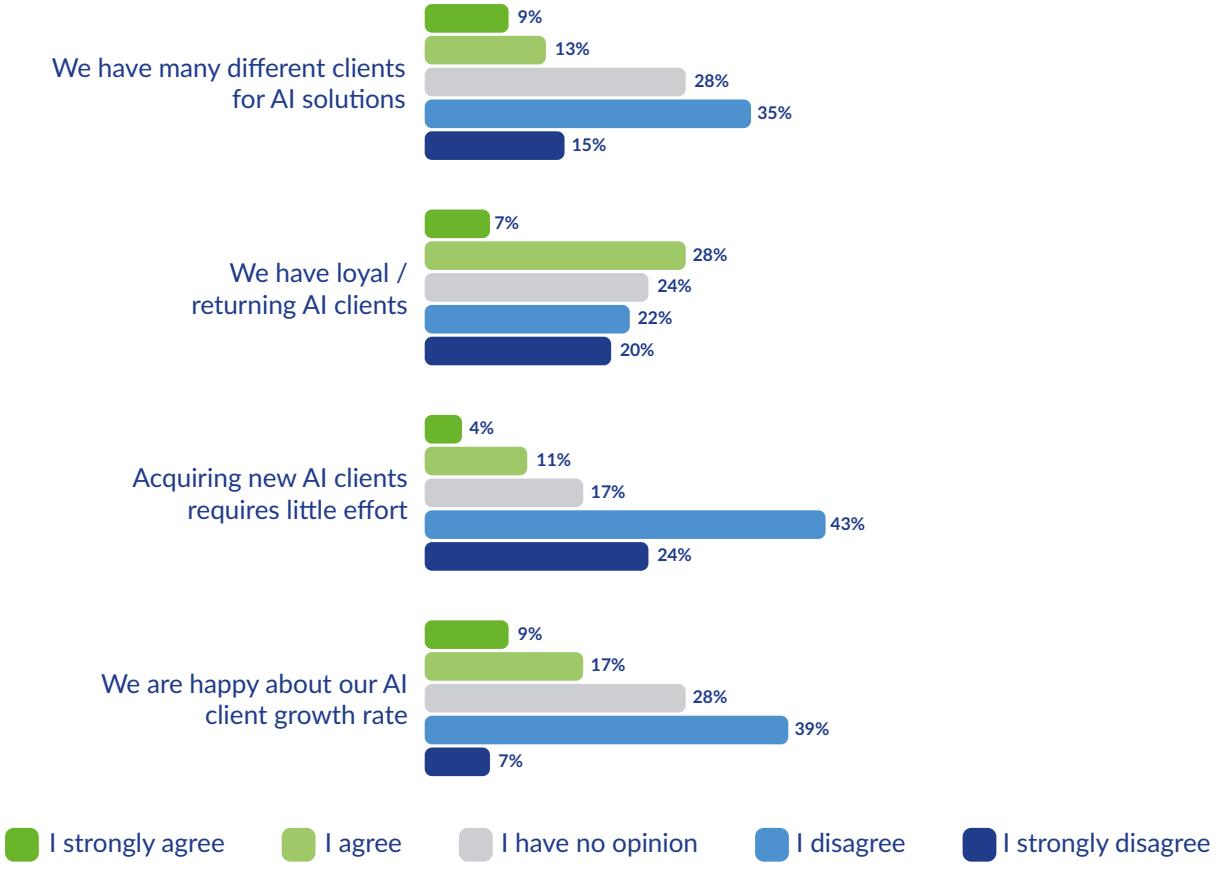


Fig. 5: Working with AI clients. N=46

#2: Wroclaw's forte lies in data solutions for diverse business sectors

The study results demonstrate that local AI companies specialise in solutions enabling better use of data. The most popular areas of AI applications include data exploration (included in the offer of over 65% of companies), Big Data and Advanced Analytics (50%), and image processing (46%). This profile remains consistent with Startup Poland's study on top verticals of tech startups in the region[1].

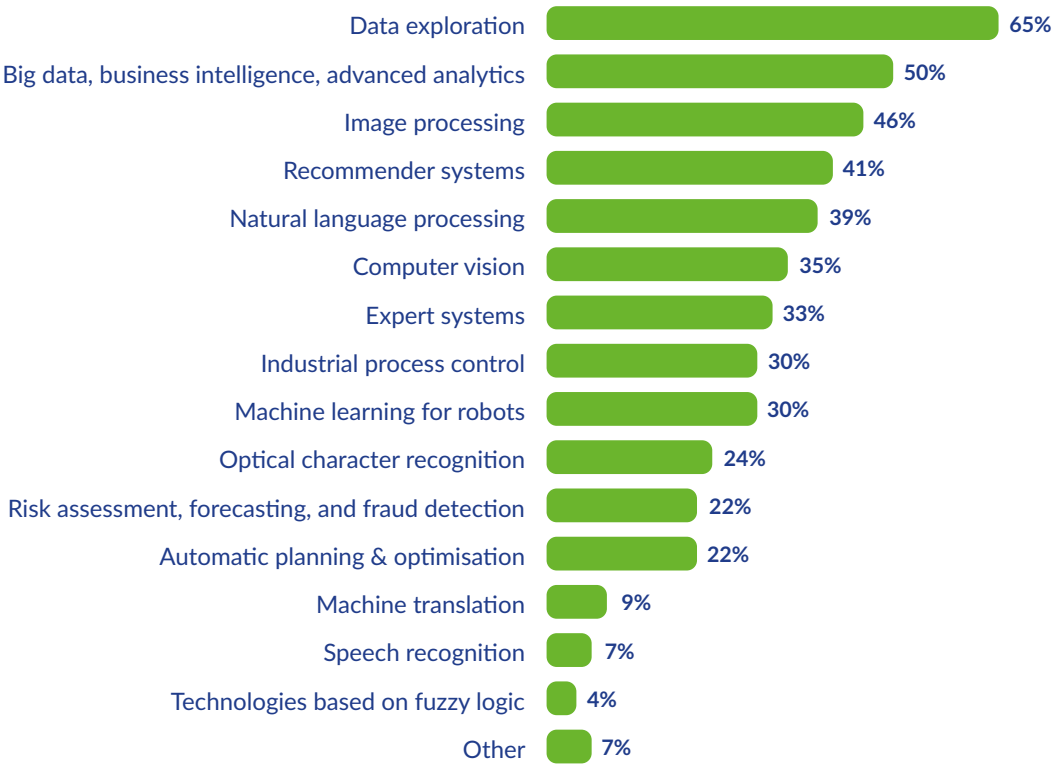


Fig. 6: Main types of AI applications developed in Wroclaw. N=46

Data invariably fuels the transformation of the most significant industries served by the local AI companies. These include the business intelligence software sector, Industry 4.0 and manufacturing, business and robotic process automation, as well as medtech and healthcare. Clients for solutions in these industries more often come from outside Poland. Only two sectors were more popular among Polish rather than international clients – transport and logistics, and smart city.

1. The Polish Tech Scene. 5 Years, report by Startup Poland, 2019. Available on: *https://startuppoland.org/raporty/*

In which business sectors does your organisation provide AI solutions?

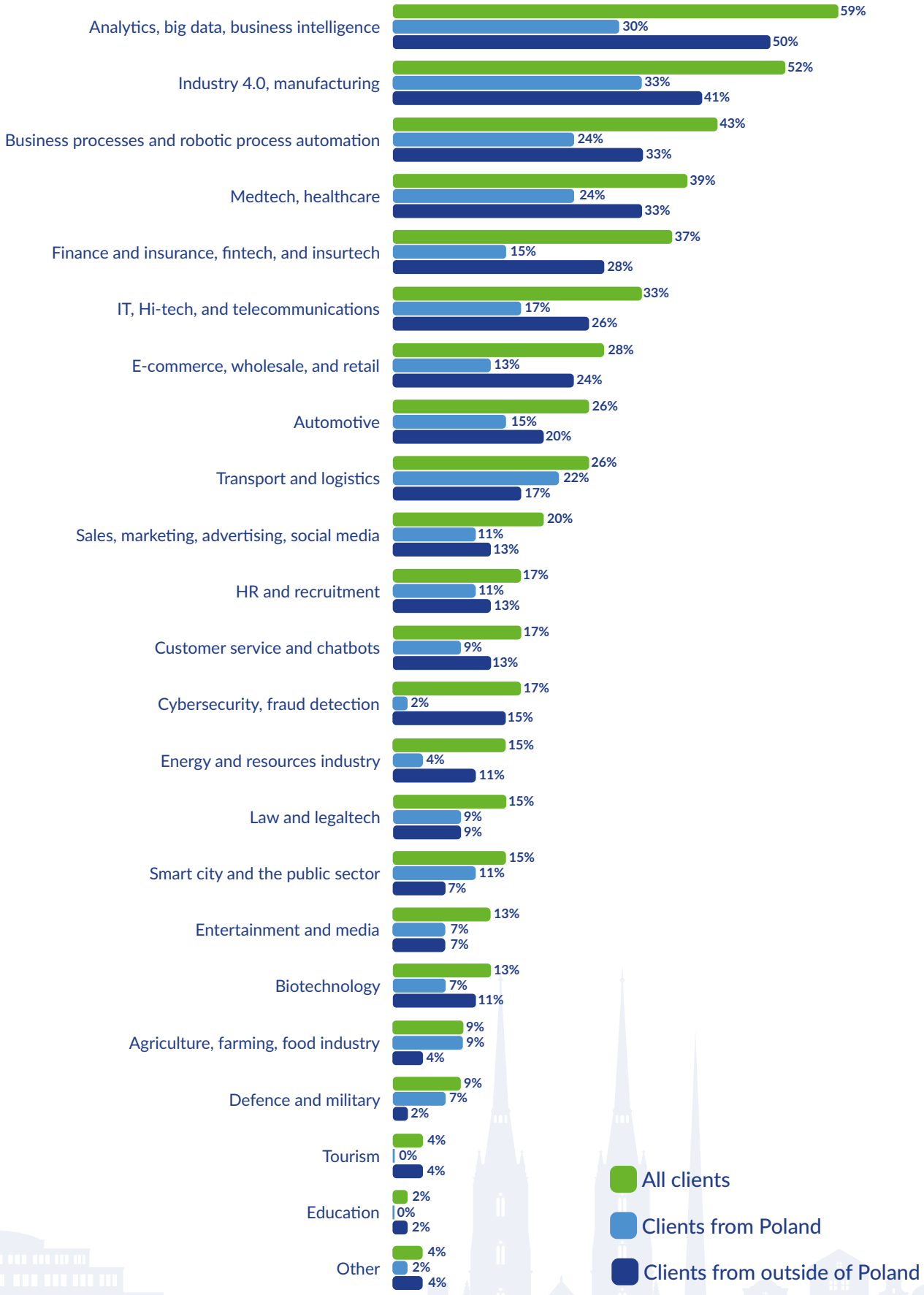


Fig. 7: Industries served by Wroclaw's AI companies. N=46

#3: Local AI companies are increasingly focused on product development

More than half of the surveyed companies already deliver AI products. They offer both SaaS (indicated by 59% of the participants) and On-premises solutions (50%). Several interviewees also confirmed plans for further productisation of their AI offer. They see this element as essential to growing business and competing for ambitious local AI specialists (more on this in ***Chapter 5***).

However, the significance of project and team outsourcing remains strong. This finding should come as no surprise considering the majority of the surveyed companies identified themselves as software houses.

In which business model does your company usually deliver your AI solutions?

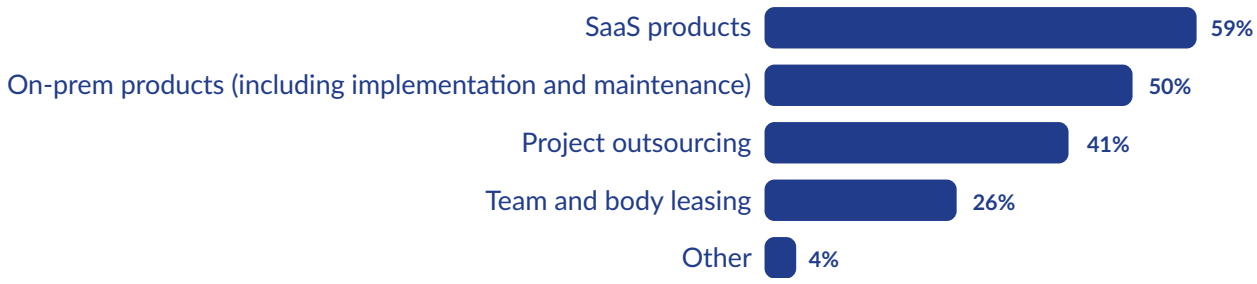


Fig. 8: Business models. N=46

The pandemic has accelerated digital transformation of companies, so AI adoption is also on the rise. Clients increasingly want to become data-driven in different areas of their business. Demand will continue to grow, as will certainly the unavailability of AI solutions – mostly due to IT staff shortages and growing service costs.

Practical applications of AI used by clients suggest that their needs around data exploration are still very basic. There is room for growth. However, both costs and the complexity of AI challenges faced by businesses mean that the fundamental market mechanism of demand and supply doesn't apply here.

Grzegorz Rudno-Rudziński

President of the Management Board of ITCorner, Managing Partner at Unity Group

Examples of AI-driven solutions developed and used in Wroclaw

AI-powered data analysis in microbiology labs

Counting microbial colonies is a crucial task in microbiology. Performed manually, it is a time-consuming, error-prone, and tedious process that trained professionals must manage.

NeuroSYS developed AI software for detecting, identifying, and classifying microbial colonies on Petri dishes for one of the top five global pharma companies.

NeuroSYS built a Deep Learning model for image analysis, trained it, and integrated it into an existing system. This solution allowed processes to take place automatically, without the need for human supervision.

This improvement accelerated the process, minimised the risk of human error, improved accuracy, and increased the overall satisfaction of laboratory technicians.

Smart city – improving public transport

Spyrosoft's client was looking to improve the public transportation system of one of the largest cities in the world. The challenge involved predicting the number of bus entries and modelling their arrival times.

Spyrosoft focused on adding a predictive capability to the Digital Twin of the city and developed a tailored Machine Learning model. This aimed at predicting the movements of bus passengers and bus arrival times at a given stop.

Spyrosoft tested different modelling techniques during that process, from Time Series Analysis to complex ML models.

The first proof of concept was an ML model, which performed around 18% better than the initial one. The second model achieved higher accuracy even with a greater distance between the bus and the station.

Industry 4.0 – automating product inventory, logistics, and warehousing

Manufacturers, distributors, and retailers often struggle with the lack of visibility in asset management – a complex, expensive, and error-prone process.

Proxitrak IOT RFID automates the entire logistics process from the production line to delivery to the customer. The system enables tracking the movement of products and pallets within the warehouse on a 3D digital double. It can be expanded to connect additional factories and warehouses into an intelligent supply chain.

PROXIGROUP

As a result, the process of managing orders and deliveries is carried out by automated tools that dynamically respond to changes in infrastructure. They improve process efficiency and eliminate the need to involve human employees, which can reduce stocktaking and product location costs by up to 80%.

Optimising SSC operations thanks to AI-driven data mining

A shared services centre's primary task is to streamline and standardise business processes, which can be challenging when serving clients in multiple countries. Based in Wroclaw, Fresenius Kabi Business Services manages financial and accounting services for corporate offices in 16 different markets.

Focused on optimising costs and efficiency, the company's accounts payable department uses Celonis, an intelligent process mining and execution management solution. After analysing and enhancing live data from the ERP system, the tool provides accountants with insights and next-best-action recommendations.

This improvement has enabled prioritising of invoices, which led to an increase in cash discount by 24%. Additionally, the company uses an ML-powered functionality to reduce duplication in the system.

FRESENIUS KABI
caring for life

4 Technologies and Data

This section outlines technology choices made by AI companies in Wroclaw and compares them to national trends.

#1: Python and C-family are the most popular programming languages used by AI companies in Wroclaw

Python is unquestionably the most popular language among AI companies in Wroclaw, and it will remain so over the next three years. Some 78% of the study participants use it to create AI solutions, which is in line with a general trend in Poland. However, its declared use in Wroclaw is lower than the national average described in the ***State of Polish AI report***[1], where Python was selected by 95% of companies.

The second most popular programming language is C/C++/C#. Used by almost 60% of the surveyed AI companies, it will remain strong over the next few years. This result differs from ***the national trend***[2], where the C-family is only the fourth most popular choice, after R and Java, which were preferred by 50% and 33%, respectively.

The results reveal that the next few years will see a significant rise in use of Go, Rust, and Lisp.

1. State of Polish AI 2021, Digital Poland, 2021. Available on: ***https://www.digitalpoland.org/en/publications***
2. Ibid.

Which languages does your company most frequently use in your solutions today? Which of them would you like to start using in the next 3 years?

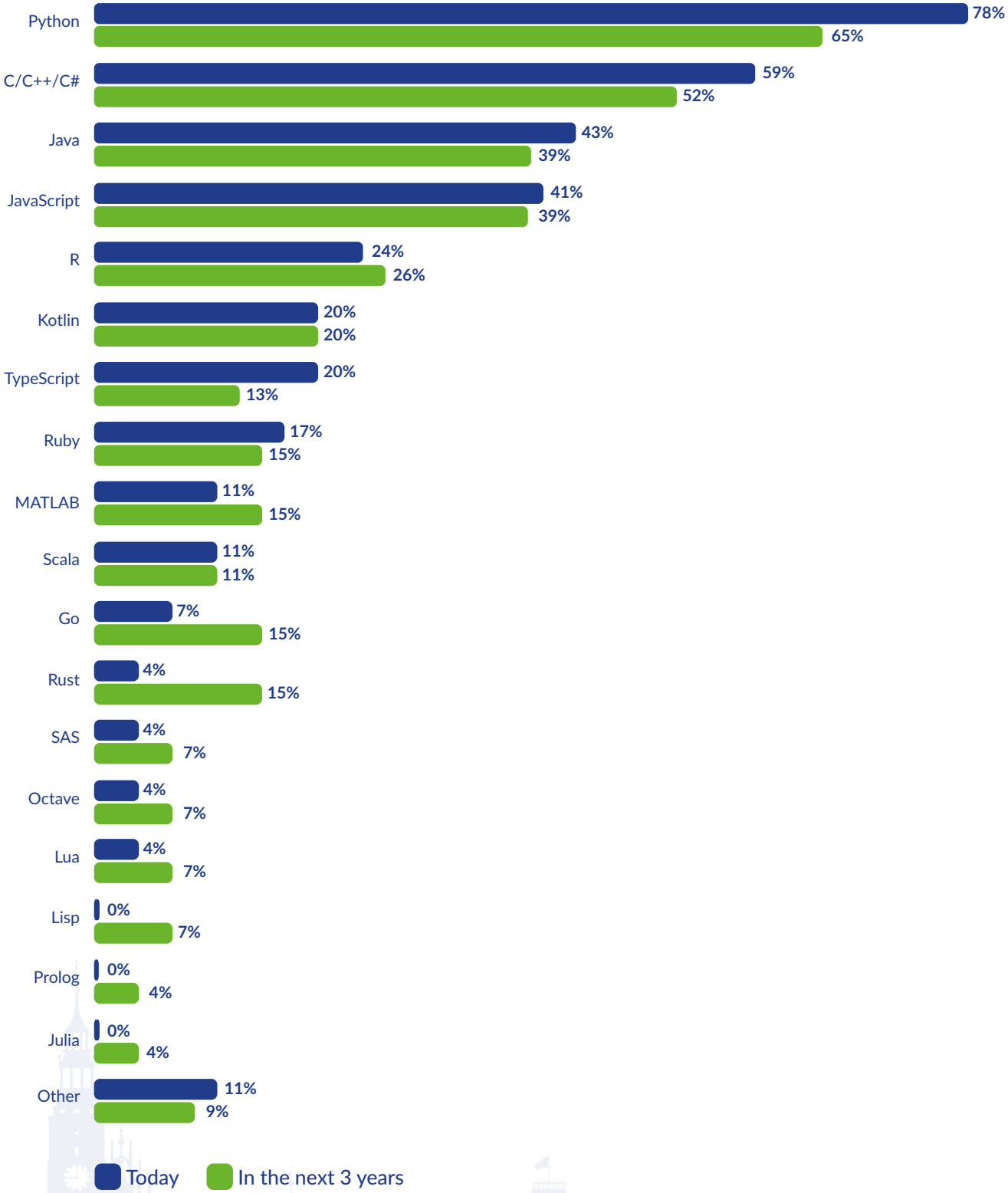


Fig. 9: Programming languages. N=45

#2: The most common frameworks used by AI companies in Wroclaw include TensorFlow and PyTorch/Torch

TensorFlow and PyTorch/Torch are currently the most popular frameworks. Currently used by 52% of the surveyed AI companies, they will remain dominant over the next three years. These results align with a national trend identified in the ***State of Polish AI report***[3], where TensorFlow and PyTorch/Torch were chosen by 76% and 62% of the participants.

The study shows that in the next three years Apache Mahout will record the most visible rise in popularity.

Which frameworks does your company most frequently use in your solutions today? Which of them would you like to start using in the next 3 years?

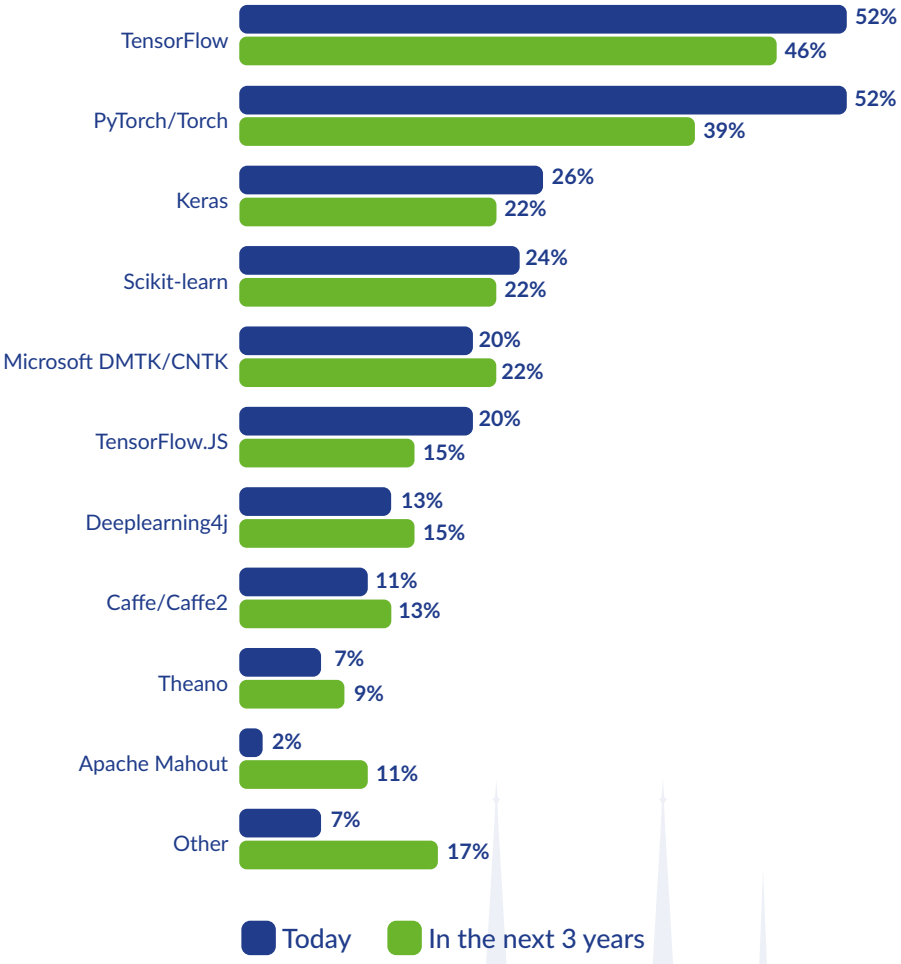


Fig. 10: Software Frameworks. N=41

3. Ibid.

#3: AI companies in Wroclaw mainly work with client data

When developing solutions, AI companies in Wroclaw mostly work on data provided by their clients, with almost 85% of the participants indicating this was the case. Other popular sources include data they collect themselves (59%) and publicly available data (nearly 44%). Paying for data is not common practice (24%), which suggests that local AI companies are unwilling to pay for data or its quality is unsatisfactory.

> *Building Wroclaw's speciality in AI is an opportunity to develop other closely related areas. AI solutions most often use large cloud data sets, e.g., Big Data or Data Lake, which frequently obtain data from sources such as Internet of Things sensors. The result of AI algorithms' work is usually presented in Business Intelligence tools. All these areas can continue to grow dynamically in Wroclaw.*

Artur Sawicki

VP & General Manager at Infor Poland and a member of ABSL – The Association of Business Service Leaders

5 AI Specialists and Teams

This section discusses key findings on AI specialists in Wroclaw – technical talent and business roles, such as product owner or scrum master.

#1: AI teams in Wroclaw have on average eight members

The size of AI teams in Wroclaw reflects the composition of the local IT scene. Of the IT firms surveyed, 83% had teams of up to 11 members, while the most common team size was between three to five specialists. Teams of 20 or more staff also operate in Wroclaw, but they are far less common.

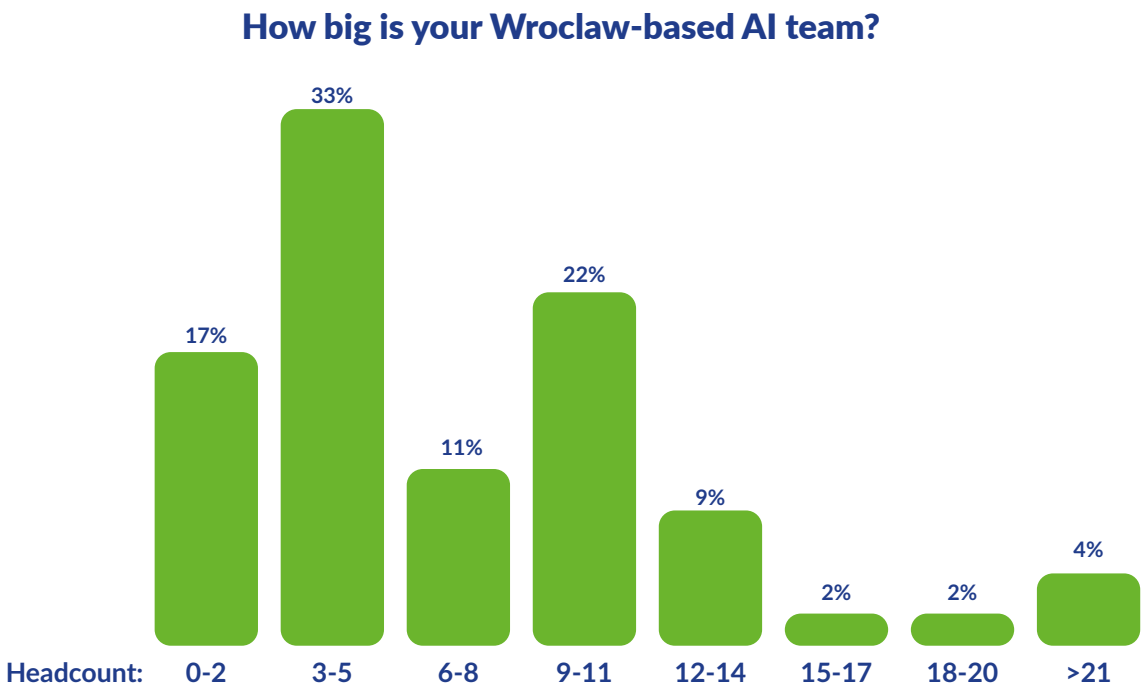


Fig. 11: Size of Wroclaw's AI teams. N=46

As in other areas of the tech sector, women also make up a minority in AI teams. On average, they make up around 25% of AI team members. Although there are companies with no female AI specialists, there are also teams where women account for the majority of headcount.

What % of your AI team are women?

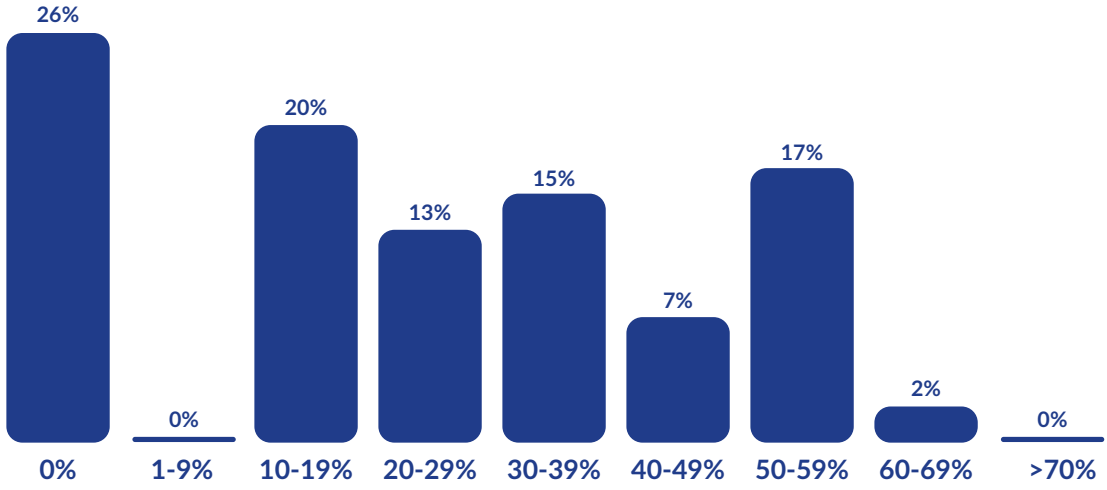


Fig. 12: Women in AI teams. N=46

AI development requires a highly qualified workforce. Poland is well-known for educated specialists, but the pace of change calls for even more talent. It will certainly set us new goals and challenges for the coming years.

The presence of women on the AI scene is now an extremely relevant topic with immense potential. Currently accounting for a quarter of AI teams in companies, women are indeed a group worth targeting when it comes to projects related to improving qualifications and promoting employment in the IT sector.

Dr Magdalena Okulowska

President of the Wroclaw Agglomeration Development Agency – ARAW

#2: Almost all companies plan to expand AI teams within a year

Almost all surveyed companies plan to employ new AI team members within the next year. The majority of the surveyed companies plan to hire more than two AI specialists (59%). Out of this group, 9% plan to employ more than ten team members. One interviewee revealed a plan to double the size of their team within a year.

The most important candidate sourcing methods include external recruitment and in-house skills development, with the latter growing in importance due to soaring staff shortages.

#3: AI businesses in Wroclaw prefer to hire more experienced specialists

Recruiting AI specialists is challenging in general, but its difficulty largely depends on the level of experience required. Juniors are relatively easier to find, but only 1 in 4 local AI companies reported plans to hire them.

Almost all interviewees appreciate the high level of technical and language competences of local graduates. However, they also agree that students in Wroclaw need to work more on developing business and customer service skills. One interviewee estimated that before a graduate without commercial experience starts generating revenue, their training may take up to two years and cost as much as PLN 250,000.

AI companies in Wroclaw prefer to hire mid-level and senior AI specialists because, despite the associated higher salary costs, their impact is significant, bringing more value to the business and operating at a faster rate. They describe sourcing them as “difficult” or “very difficult”.

How would you assess the difficulty of recruiting suitable employees?

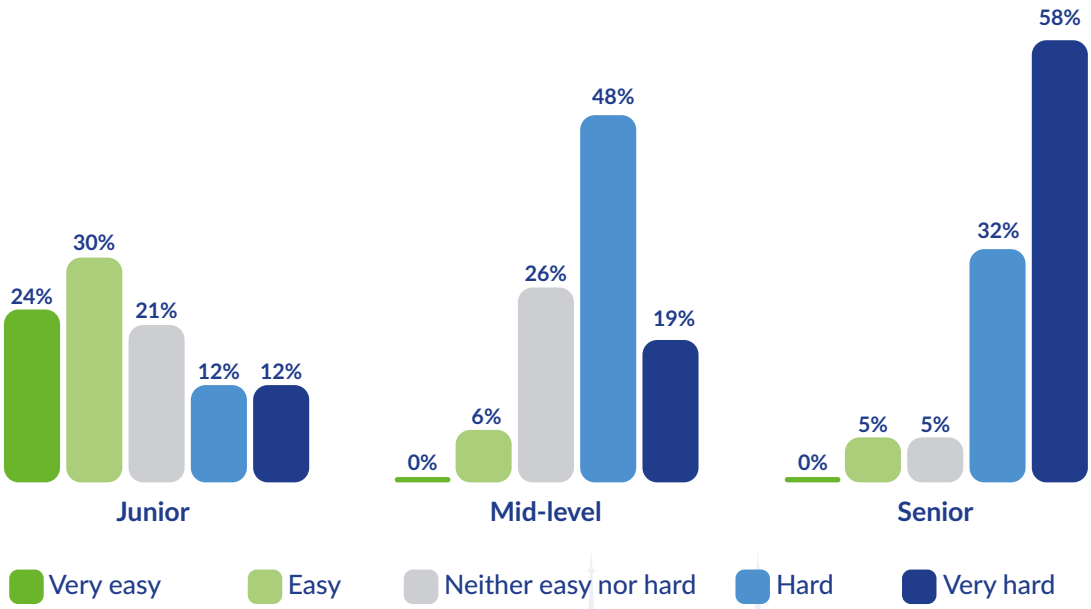


Fig. 13: Availability of AI specialists in Wroclaw. N=44

IT businesses in Wroclaw are well aware that they are now competing for talent – both locally and internationally. As a result, labour costs are growing, making it more challenging to acquire and retain top AI talent. Not always able to compete financially with salaries offered by foreign companies, interviewees stressed the need to attract specialists with the lure of ambitious projects and technical challenges. This shift has also been feeding into the trend of increasing productisation among AI companies in Wroclaw.

> *The key findings of the study are consistent with the general characteristics of the advanced IT-services sector. Companies prefer to hire senior and mid-level staff due to the substantial cost of investment required for junior hires and their high turnover. The more advanced the service, the more specialist skills are required, so losing seniors is a huge threat to a company's training 'pyramid' for junior team members. Experts with many years of experience are the most headhunted for remote work by companies outside Poland.*
>
> *Data from the study suggests that companies are trying to deal with staff shortages in three ways. First, by investing in product development and moving away from the body and team leasing model, which is hard to scale. Second, by cooperating with academia, both in terms of adjusting tech education curricula to their business needs and engaging academic researchers in their projects. Third, by creating consortia with other companies and universities to build expert workgroups that can take on larger and more ambitious projects.*

Grzegorz Rudno-Rudziński

President of the Management Board of ITCorner, Managing Partner at Unity Group

6 R&D and Cooperation with the Scientific Community

This section outlines how local companies finance new AI initiatives and cooperate with the scientific community in Wroclaw.

#1: There is a diverse source of R&D funding available to AI companies in Wroclaw, but self-funding is dominant

Over 90% of the surveyed companies use their own capital to finance new AI solutions. Other significant forms of financing include support from strategic investors, public funds, and research grants.

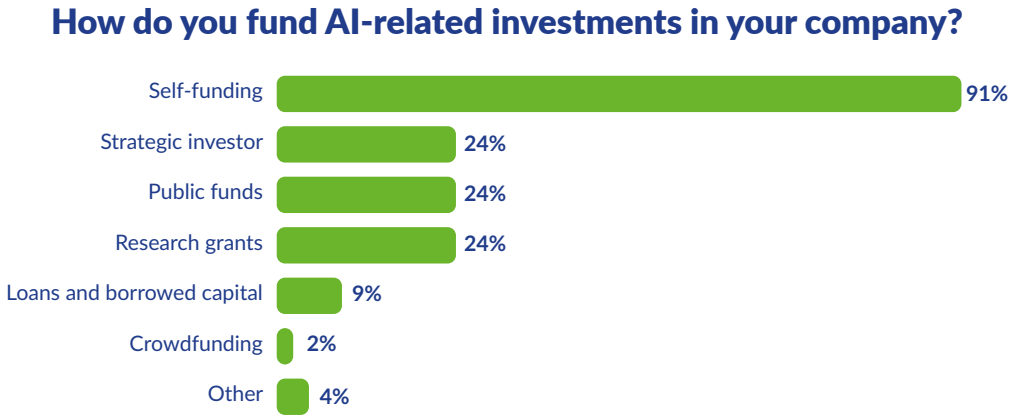


Fig. 14: Sources of funding for AI investments. N=46

The attitudes of AI companies toward external funding vary. Larger organisations usually have dedicated specialists or teams monitoring funding opportunities and preparing applications. One interviewee admitted that their company finances all R&D initiatives internally and willingly chooses to avoid funding from outside sources. The business focuses on developing specific components for AI solutions and has so far managed to cover all costs with client work.

While many surveyed companies rely on public funding – both Polish and international – several respondents admitted that they avoid this type of support altogether. Their decision mainly stems from complicated procedures and strict timelines, which don't match the AI business dynamic. This factor is particularly discouraging for smaller companies, where one of their concerns is improving their time-to-market. Some of the surveyed companies also admit being hesitant about cooperating with regional operators of international funds and prefer to look elsewhere for sources of financing.

Considering the above, it is unsurprising that most external capital for funding new AI solutions in Wroclaw is also Polish.

Where does the external capital invested in your company's AI initiatives come from?

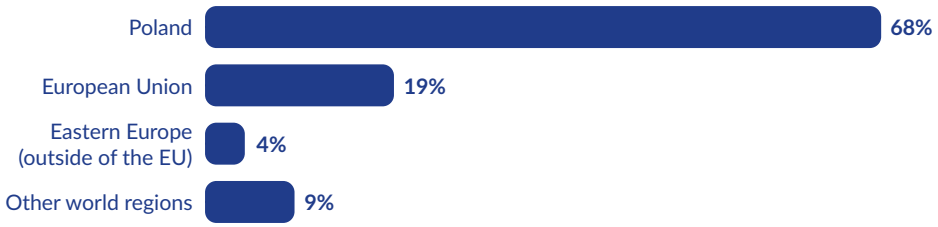


Fig. 15: The origins of funds invested in AI in Wroclaw. N=28

#2: Ties with the scientific community are going from strength to strength

Local AI companies are increasingly working together with universities in Wroclaw. Over 2 out of 3 of them either cooperate or plan to cooperate with local academia. Qualitative data from the interviews confirmed this trend.

Do you cooperate or plan to cooperate with universities and the scientific community?

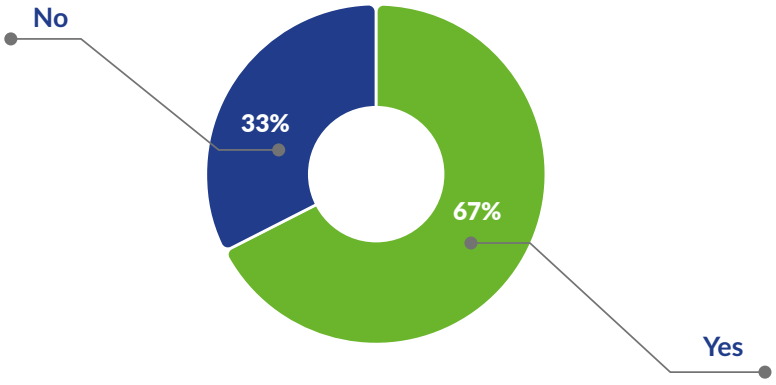


Fig. 16: Cooperation with universities. N=46

The most important area of cooperation is related to organising internships and practical courses for students. Many interviewees confirmed using this form of cooperation as a way to source promising talent. By advising universities, companies play an active role in shaping their curricula and designing new ways to expose students to the realities of the AI business. Two interviewees shared plans to develop academic courses relevant to the verticals they serve.

What does this cooperation consist of?

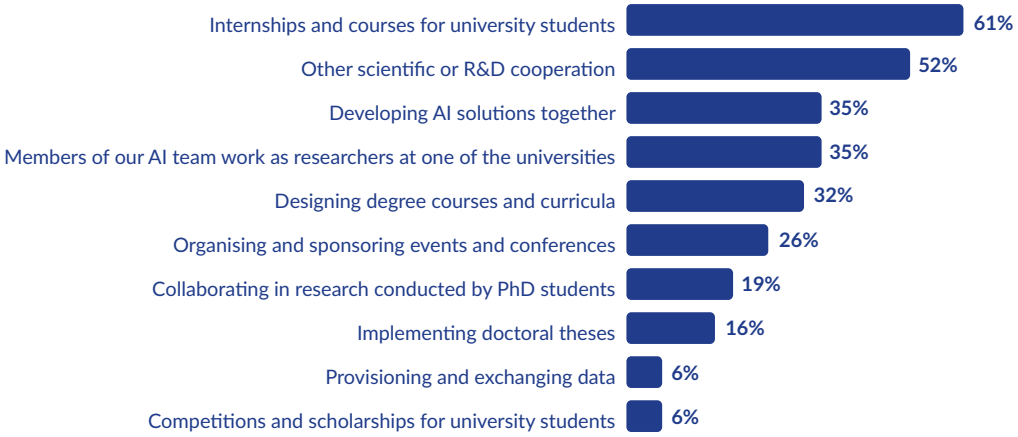


Fig. 17: Scope of cooperation with universities and the scientific community. N=31

AI companies in Wroclaw also cooperate with academia on new research projects. They run joint R&D activities, create new commercial solutions, and participate in the preparation and implementation of PhDs. Some 35% of the surveyed AI companies employ academic researchers. According to several interviewees, this arrangement is crucial to building bridges and improving the transfer of knowledge and ideas between the business and universities.

Better information sharing and less bureaucracy are the two most important factors that could streamline cooperation with the local scientific community. They were indicated by 65% and 48% of respondents, respectively. Large companies are more likely to overcome these limitations and keep expanding the extent of their cooperation with universities. Interviews revealed that smaller AI businesses would also like to tap into the potential of working together with academia. They note that it requires engagement, time, and resources that they may currently lack, but such cooperation is certainly on their roadmap.

What would help you better cooperate with universities?

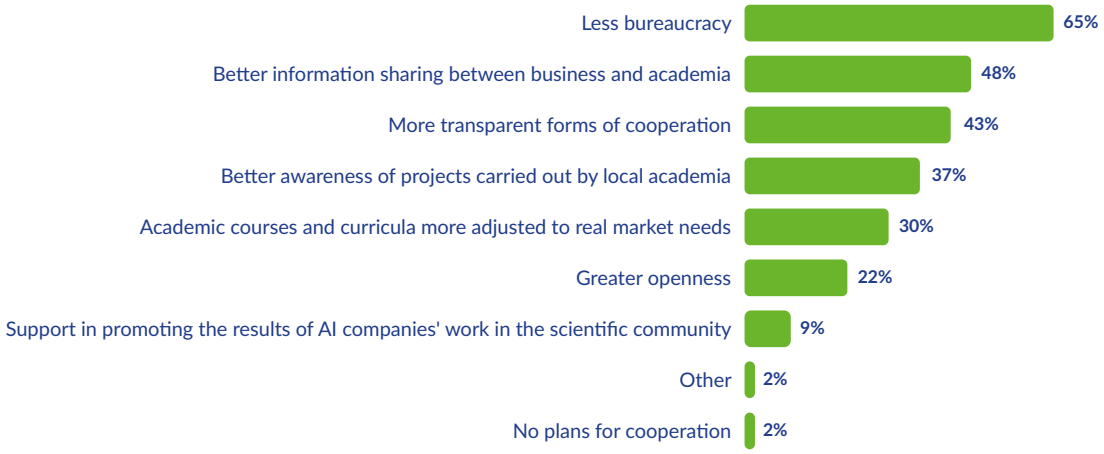


Fig. 18: Streamlining cooperation between business and academia. N=46

In the long term, only cooperation between business and universities, supported by well-prepared policies at the national level, can attract more specialists to the AI sector.

The same mechanism also applies to the low representation of women in the AI workforce. Here, too, changes in the education system, society, and activities of third sector organisations, such as industry clusters, can benefit the entire Polish IT industry.

If Lower Silesian tech companies invest in developing cooperation with universities and innovation centres, together they can obtain subsidies in the smart money model. There will be many opportunities of this kind in the European Union, and they will undoubtedly make it easier for companies to invest in R&D, especially in the AI space.

Grzegorz Rudno-Rudziński

President of the Management Board of ITCorner, Managing Partner at Unity Group

7 AI in Wroclaw: Opportunities and Challenges

This section provides an overview of how AI companies evaluate their decision to invest in Wroclaw, what helps them thrive, and what changes could unlock their full potential.

#1: Wroclaw is a good place to invest in the AI business

Local AI companies feel good about their decision to invest in Wroclaw. The vast majority of the respondents are "satisfied" (39%) or "very satisfied" (46%) with the decision to start and run their tech business in Wroclaw. Some 85% of the surveyed companies plan further development of their investment in the city, while 79% want to expand their portfolios of AI solutions.

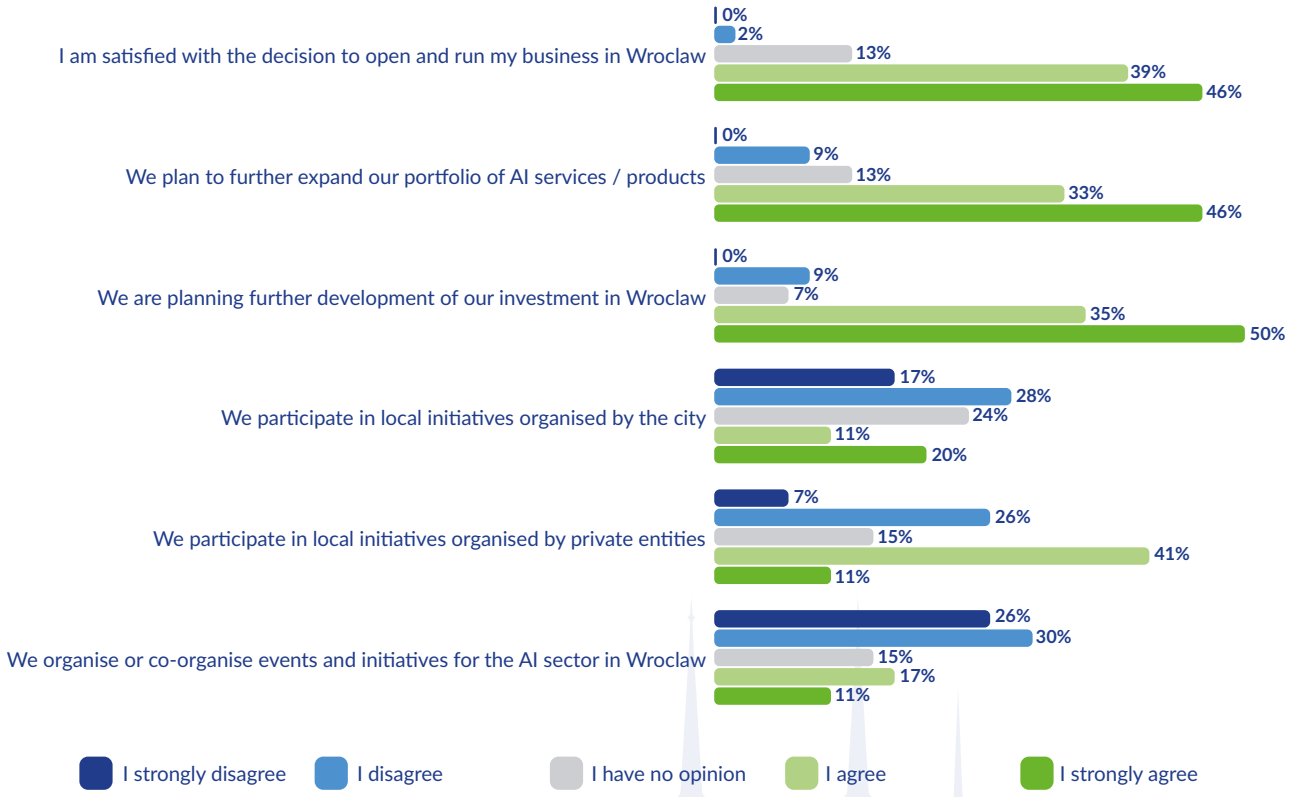


Fig. 19: Evaluation of the decision to invest in AI in Wroclaw. N=46

For the majority of the study participants, Wroclaw felt like a natural choice to start an AI business. They have either lived here before (70%) or run other tech business activities,

where adding the AI component was a logical step. Other key reasons include good access to a qualified workforce, Poland's EU membership, quality business infrastructure, and the presence of numerous universities.

Why AI companies choose to invest in Wroclaw?

Fig. 20: Why AI companies choose to invest in Wroclaw. N=46

The spirit of cooperation between AI businesses in Wroclaw is evident. Despite often catering to the same clients, interviews confirm that AI companies in Wroclaw perceive each other as partners, not rivals. They cooperate on projects, share knowledge, lend each other specialists, and carry out joint business-development activities.

#2: Further growth of the AI sector in Wroclaw depends on access to qualified specialists

The dynamic development of the tech sector in Wroclaw means that AI companies need access to even more specialists. This factor drives up labour costs, which 67% of the surveyed AI companies identified as a critical barrier to growth – only slightly higher than the difficulties associated with finding a qualified workforce (57%). The answer to this challenge seems to lie in the increasing productisation of local companies, as it improves their business scalability, reduces overdependence on staff, and attracts top talent.

What are the main barriers to development of AI solutions in Wroclaw?

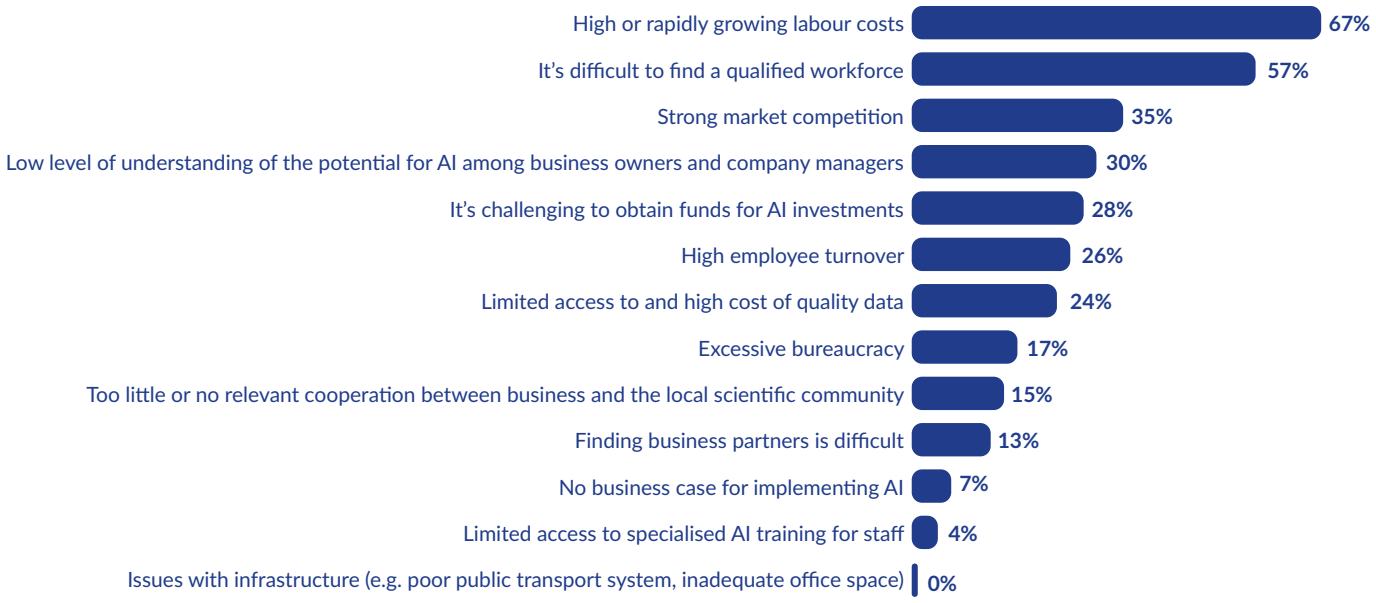


Fig. 21: Barriers to development of Wroclaw's AI sector. N=46

> *Almost 80% of local tech companies want to invest in AI and will need specialists who are already scarce. There are shortages of IT experts, and also mathematicians and statisticians, who could work on data mining and creating AI algorithms. Local tech businesses already cooperate with universities, but what would also greatly help is the international promotion of Wroclaw as an AI hub, a place where specialists can find interesting jobs in this field.*

Artur Sawicki

VP & General Manager at Infor Poland and a member of ABSL – The Association of Business Service Leaders

#3: Many more companies in Wroclaw plan to offer AI

A significant number of local tech companies are seriously considering expanding their offer to include AI. The survey results show that 3 out of 4 companies not yet delivering such solutions plan to add this element within the next three years. The two main types of applications they plan to develop mirror the most popular ones already offered by local AI companies: data exploration and big data, business intelligence, and advanced data analytics.

Do you plan to add AI solutions to your offer within the next 3 years?

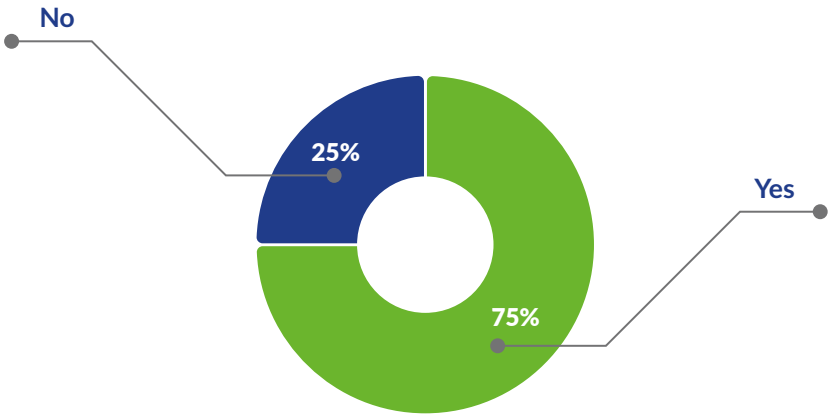


Fig. 22: Decisions on adding AI to offerings of it companies in Wroclaw. N=28

What are the main types of AI applications your company plans to develop and implement?

Fig. 23: Main types of AI applications planned by Wroclaw's IT companies. N=21

Tech companies considering AI said that finding a qualified workforce and a lack of business case for implementing AI were the most critical barriers to the development of their offer. Half of all the study participants identified these factors as key brakes on their business. Other important issues included the high cost of implementing technologies (36%) and a low level of understanding of their potential among the owners and managers of companies (25%).

What are the main barriers to development of AI solutions in Wroclaw?

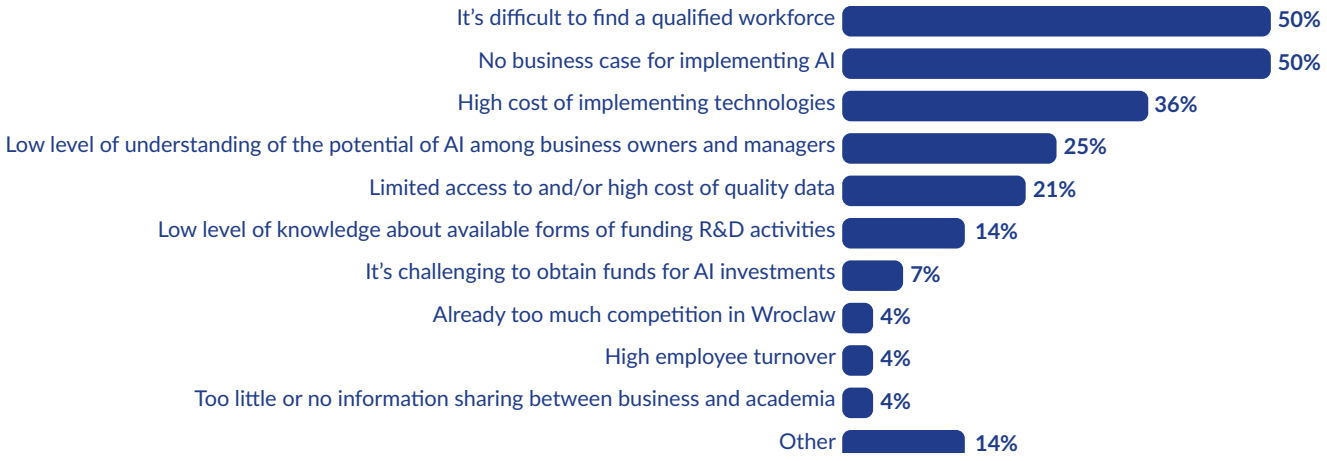


Fig. 24: Barriers to development of AI offerings of Wroclaw's tech companies. N=21

What top global tech destinations have in common is the ability to build an entire tech ecosystem with an excellent educational base, the ability to attract investors, and a robust infrastructure. It looks like Wroclaw is on the right path, as it recently achieved a high place in the FDI's (Foreign Direct Investment) Global Cities of the Future, ranking ahead of Zurich, Seoul, and Chicago.

Despite this success, Wroclaw should continue promoting its tech scene, improve the local infrastructure, and support universities in ensuring that they educate and provide top talent as a direct response to the issues caused by talent scarcity. The participation of local IT companies in this process is essential.

Karol Chymosz

Software Development Association Poland – SoDA, Strategy Director at SoftServe Poland

8 Invest in AI, invest in Wroclaw!

With a high concentration of tech talent and a vibrant startup community, Wroclaw is definitely a promising location for AI businesses.

From taxes to finding a suitable office and hiring qualified staff, future investors need to consider many issues when planning to enter a new location.

That's why the **Wroclaw Agglomeration Development Agency (ARAW)** offers a one-stop-shop approach for all businesses interested in investing in or around the city.

1 **Knowledge**

ARAW continuously monitors, collects and delivers data about the economy and business in Poland and Wroclaw.

2 **Networking**

The agency connects investors with local authorities, companies, service providers, universities, and other relevant organisations.

3 **Individual approach**

Each FDI project is different and thus receives an accountable PM who coordinates all related work, streamlines procedures and paperwork.

4 **Reports & Analysis**

ARAW regularly distributes relevant business data and news to all partners, but also prepares and publishes reports.

5 **Visits**

Investors receive all necessary support in scheduling and organising their visits in and around Wroclaw.

6 **Business set up**

Investors receive help with establishing their business in Wroclaw.

7 **PR & Branding**

ARAW also advises on and provides support in initial public relations and employer branding activities of recently launched investments.

8 **Ongoing business support**

Investors can count on comprehensive, ongoing support – even 80% of the agency's work is dedicated to its existing clients.

200+

Foreign Direct Investment projects served by ARAW.

100,000+

jobs created thanks to these FDI projects.

16+ years

ARAW has offered comprehensive business support services since 2005.

As one of Poland's first investment support agencies, established in 2005, The **Wroclaw Agglomeration Development Agency (ARAW)** is an institution owned by the City of Wroclaw and 29 other municipalities.

Apart from comprehensive business setup support, ARAW manages post-investment assistance and initiatives. These include events, networking, and other activities fuelling the growth of the local tech scene, promoting startups, gathering relevant data, and preparing industry reports.

Learn more & get in touch

Plac Solny 14
50-062 Wroclaw

office@invest-in-wroclaw.pl
+48 71 78 353 10
invest-in-wroclaw.pl
araw.pl

Since the beginning, **ARAW** has closely collaborated with partners specialising in legal and tax support, HR, and real estate. Here are some of the critical issues investors should be aware of before starting a business in Wroclaw.

The legal and tax landscape in Wroclaw

Tech businesses starting operations in Wroclaw face many legal challenges related to managing, protecting, and introducing new AI solutions. This situation, of course, gives rise to new areas of risk and thus the necessity to adjust the legal status and in-house procedures of such companies.

So far, European and national legislation hasn't adequately regulated all legal aspects of new AI solutions. However, there are signs of change, as the Council of Ministers adopted the Polish national AI strategy in December 2020[1]. The country is now implementing the European Ethics Guidelines for Trustworthy AI and launching mechanisms for a strong ecosystem in the ethical, legal, technical, and international dimensions. Several members of ITCorner, a local tech business cluster, have been appointed as members of the Working Group of AI founded by the Chancellery of the Prime Minister of Poland.

AI companies operating in Wroclaw can receive financial support from EU funds and benefit from tax incentives.

The most important types of support AI companies can get in Wroclaw

These include *IP Box*[2], relief for research & development, or investments in robotisation. In addition, international entrepreneurs bringing new investments can benefit from long-term income tax exemptions.

Applying for public support for AI business in Poland may seem complex at first, but it doesn't have to be so. Enlisting a corporate tax and legal partner specialised in technology and innovation can make all the difference.

SDZLEGAL has worked with many AI entrepreneurs and has been a member of ITCorner. That's why its specialists know the local tech sector inside out and can adjust services to each client's individual needs.

SDZLEGAL SCHINDHELM provides comprehensive corporate tax & legal services at a local, national, and international level – offering support at every stage of business development.

The company belongs to the international SCHINDHELM network of law companies serving international business clients in 28 locations in 13 countries. SDZLEGAL is also a member of the International Advisory Group - a network of law and tax offices operating in 74 countries.

Learn more & get in touch

SDZLEGAL SCHINDHELM

ul. Kazimierza Wielkiego 3
50-077 Wroclaw

tomasz.szarek@sdzlegal.pl
+ 48 509 475 255
pl.schindhelm.com

1. Poland AI Strategy Report, AI Watch by the European Commission, 2021.
2. Tax reliefs in Poland for research, development and innovation, 2021: *https://www.paih.gov.pl/why_poland/investment_incentives/ip_box#*

Office solutions tailored to the business needs

The fast development of tech companies means that offices must adapt to the needs of their growing teams – and that can be a challenge. Diverse projects and functions require easily adaptable and properly arranged spaces, such as rooms for group work.

Another challenge can be the location of a property. When looking for office space, tech companies continue to prioritise convenient public transport links and access to amenities.

Wroclaw offers a great variety of office space

With a 14% vacancy rate, Wroclaw provides AI entrepreneurs a good choice of properties. An additional pool of 160,000 square meters is under construction, with completion planned by the end of 2023. In addition to traditional offices, occupiers may also profit from flexible space solutions available in the city.

Office hunting looks different depending on whether the company is looking for a temporary or permanent location. In the first case, tech companies can use options such as co-working or subleasing. In the latter, they get the chance to arrange the space to match their individual needs, including advanced technological solutions.

Technology improves building efficiency and brings tangible benefits to leaseholders. Optimised control of temperature, lighting, and water use reduces resource consumption and results in savings. Technologies such as BMS allow for real-time property monitoring to ensure systems efficiency and early detection of any issues.

Office hunting in a new location is always challenging, so finding an experienced partner will minimise risks. Having supported both tech startups and global brands, JLL brings local expertise with an international outlook.

JLL provides commercial property and investment management services in over 80 countries. The company seeks to transform its industry through technology-based innovation in order to create new opportunities, spaces, and sustainable solutions for clients and communities.

Listed on the prestigious Fortune 500 list, JLL had annual revenue of $16.6 billion in 2020 and a global workforce of more than 91,000.

Learn more & get in touch

JLL

ul. Sucha 3, Spaces, 2nd floor
50-086 Wroclaw

katarzyna.krokosinska@eu.jll.com
+48 660 661 183
jll.pl

How to hire top AI talent in Wroclaw

In the last few years, AI has gained popularity in almost all sectors of the economy, making staff shortages more tangible than ever. Currently, the number of AI job vacancies exceeds the number of employees with the required competencies.

High demand means that tech companies practically compete for AI specialists

Specialists with several years of experience can expect a gross salary of 15-20,000 PLN a month (Data Science Developer) and pay rises of 5% each year. However, for many specialists being able to work on ambitious projects is of equal or even higher importance than money – and that's another way local tech companies compete for talent.

One of the key benefits of the job market in Wroclaw is the availability of highly-rated universities. Their graduates have thorough theoretical and technical knowledge, speak foreign languages, and work effectively with international clients. More and more universities include ML, AI, and data management as part of their curricula – and tech companies appreciate this fact.

Despite a growing number of technical graduates, tech recruitment is still very challenging. Finding qualified IT specialists in a new location can seem daunting, but it doesn't have to be so.

When looking for tech recruitment support, AI companies should choose consultants with an extensive candidate database and a strong network in the IT industry. Randstad employs more than a dozen consultants specialised in IT recruitment in Poland. The firm's well-established and comprehensive countrywide network allows recruiters to share experiences and insights on the most effective solutions for acquiring candidates with desired skill sets. In practice, this setup allows clients in Wroclaw to cooperate with recruiters with local know-how who also receive support from larger teams created for specific projects. Randstad offers different service models, from temporary employment to IT contracting, and permanent recruitment.

RANDSTAD is a multinational HR consulting firm supporting businesses in finding the right talent – in 39 countries globally and over 100 offices in Poland.

This unique combination of a global perspective and local presence allows Randstad to provide optimal HR solutions to clients in the most demanding industries. Apart from recruitment services, the company also takes care of managing employee payroll and HR documentation.

Learn more & get in touch

randstad

ul. Komandorska 12, 3rd floor
50-022 Wroclaw

dagmara.zuromska@randstad.pl
+48 609 305 408
randstad.pl

Notes