

Report 2019

Wroclaw IT sector



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Dear Sir or Madam,

It is our pleasure to present the „Wrocław IT sector” report – the most accurate and comprehensive research carried out in the IT sector that has been implemented in our city so far.

Nearly 120 Wrocław companies participated in the study, and another 15 managers gave in-depth interviews. We are grateful to all participants for their time. It would not be possible to draw such comprehensive conclusions for Wrocław’s IT industry, as well the city itself, without their involvement.

We would like to thank the ITCorner Association and the experts Ewa Janiszewska-Kiewra, Marcin Kokott, Przemysław Korzeniewski and Piotr Rogala, all of whom contributed to the preparation of this report with great commitment.

As a city, we have become one of the most prominent technology development centres in Poland. Our enterprises, regardless of their size and country of origin, have conquered new markets and built an international reputation. IT specialists in Wrocław have gained interesting and well-paid jobs, whereas the industry conditions themselves have attracted new experts from around the world.

Thanks to this research, we have observed that Wrocław companies still have ambitious plans. Large corporations are willing to find even more technologically advanced processes and interesting projects in the city. Small and medium-sized companies are ready to build and design new products, develop a portfolio of services rendered and enter new markets.

As the representatives of city authorities, we humbly take into consideration all the concerns addressed regarding the local government. We treat them as a confirmation of the previously selected directions. We are aware of the challenges related to the labour market, which is why many of our initiatives are mainly focused on attracting new talents to come to Wrocław. We intend to continue these activities, both in cooperation with companies and local universities.

We would like to maintain a good partnership with global corporations and support activities aimed at sharing knowledge and raising employees’ competences.

Our purpose is to continuously engage in the development of the start-up ecosystem and conduct dialogue with entities from the SME sector, as well as through the ITCorner association.

Over the years we have proved that, as ARAW, we can constitute a good link between companies of all sizes and from various sectors, as well as support contacts between the business community and the academic environment. The research indicates that this is the path we should follow.



Ewa Kaucz
President of the Board
Wrocław Agglomeration Development Agency

ITCorner is an association of IT companies often competing against each other, but also understanding that joint activities bring about more benefits than direct business competition.

We believe that the larger market we build around us, the more individually we can gain benefit from it. That is why we cooperate, exchange knowledge and experience, as well as create joint branch activities. This approach is characteristic for Wrocław, a city well known as 'the meeting place', as it is always open towards cooperation and diversity.

We organise conferences, technology and business meet-ups, as well as meetings for managers. Wrocław companies compete effectively in the world, winning interesting projects, clients and employees. These successes, however, do not mean that we should stop developing as companies or business clusters, and the same goes for Wrocław's IT environment in general.

In cooperation with local authorities, we have the ambition to stimulate and support the technological ecosystem in creating new collaboration areas that can help win global technological innovation in the market. For Wrocław's IT market, we look for strategies, ideas and unique values which constitute a business model to encourage the growth of local IT companies.

However, to create a business based on innovation, one must first get to know and understand its environment. The foundations which we are supposed to develop further should be examined. Therefore, implementing a report on the IT industry in Wrocław is a key project. Saying that, we would like to express our gratitude to all the city representatives, especially ARAW, for inviting us to cooperate as research co-organisers and co-authors.

Similarly, I would like to thank all my colleagues who participated in the study and shared valuable information about their organisations and the local market, as well as those who have engaged in the research implementation by developing study results and providing their comments.

This report is an outcome of cooperation between ARAW and ITCorner that gives a reliable picture of the industry and the challenges it faces for future activities. The report covers both companies that were established in Wrocław (software houses, IT consulting and startups) as well as shared service centres (SSC/BPO/ITO) and software developers who invested in this market. Thanks to them, not only we are a leading IT centre in Poland with significant potential in technology and business, but we're also a centre that is ambitious and striving for further innovation growth.

Likewise, this report further constitutes a valuable source of knowledge for the Wrocław authorities, since it presents not only a local diagnosis of the local IT industry but also forecasts its developmental path. Therefore, it can be used to help lead the local ecosystem towards innovation. As far as potential investors and clients are concerned, this report can serve as an indicator pointing out the strengths of Wrocław's IT market, the challenges it must meet and how the local industry will be shaped in the forthcoming years.

Research **aims and objectives**

The main objective of this research is an in-depth analysis of the modern technology sector in Wrocław, in terms of the profile of the industry and its development paths, that would aim at defining the areas of the greatest concentration of knowledge and innovativeness. The research results will constitute a basis for enhancing the level of IT market innovativeness in Wrocław.

Research questions

1. **How is the structure of the Wrocław IT sector shaped in terms of the size of the companies, as well as the dominant nature of their activities, capital and functioning model?**
2. **To what extent does the labour market meet the HR needs of Wrocław's IT companies and what features of employees are important from the point of view of employers who differ in their companies' development concepts?**
3. **Which areas do Wrocław IT companies focus on as far as their development path is concerned and what means of technology do they use for this process?**
4. **Why do IT sector entrepreneurs choose to have a presence in Wrocław and how do they present the advancement level of the strategy adopted, cooperation with clients or investment financing?**

In order to reach the answers to the questions posed, the research was carried out via complex methodology. At the turn of May and June 2019, quantitative and qualitative research was conducted among companies located in the Wrocław agglomeration. To gather all data needed, the quantitative (CAWI) and qualitative (IDI) research methods were used. The research participants were companies that provide IT services for business and are involved in the creation and development of software, as well as providing solutions or innovative products based on IT.

Research methods and techniques

CAWI – Computer Assisted Web Interview

A questionnaire study was carried out using an e-form of a survey, the content of which was designed and prepared by high-class IT specialists in research methodology. The software used while surveying the participants automatically verified the logic and completeness of responses, as well as saving the data to the server in real-time. Placing the questionnaire on the Internet allowed the company representatives to freely decide about the time and place of participating in the project.

The questionnaire was conducted by one-third of invited companies what indicates a high interest of local IT market in the research.

120 companies completed the online survey.

Research sampling

Random sampling was used to carry out the quantitative part of the research. Each of the companies that met the criteria of the research target group could apply to participate in the study. Furthermore, the predominant majority of companies received an e-mail invitation containing a link to the questionnaire.

Information on the research being conducted was published on social media, as well as on the Organisers' websites, thanks to which each of

IDI – Individual In-Depth Interviews

The qualitative research was conducted through individual interviews with representatives of the company's management. The interviews were mainly conducted in the form of a direct conversation between the moderator and the respondent. The interviewer used a developed interview scenario for this purpose. The qualitative research served as a complementary element used for deeper investigation the quantitative analysis.

15 interviews were carried out with company representatives.

the companies that met the projects requirement had the opportunity to present the remarks on their experience in the Wroclaw business environment.

A targeted sampling was used for the qualitative aspect of the research. The number of interviews in groups of companies of particular sizes was assumed on the basis of the size of employment in those groups. In total, 6 interviews with large companies, 4 interviews with medium-sized companies and 5 interviews with small or micro-enterprises were carried out.

Main findings



The IT sector is extremely important for the Wrocław economy.

ARAW estimates that there are 36,000 persons employed in the IT industry. Modern information technology is one of the most important sectors in the city when it comes to the creation of new job placements.



Wrocław IT companies are in a phase of business growth and transformation.

95% of businesses declare they have ambitious plans for the development of their products and services portfolio, whereas 84% want to employ professionals and develop their IT teams.



Wrocław is an ideal place to establish and run an IT company.

56% of companies claim that the city offers a wide range of qualified employees, whereas almost 42% state that local universities provide interesting candidates to the market.



The recruitment of highly-qualified employees is the biggest challenge.

This particularly applies to the employment of architects and senior specialists with extensive job experience. 65% of companies claim they do not encounter any difficulties in recruiting juniors.



Multinationals have a significant impact on Wrocław's IT market.

They attract experts from other locations in Poland and abroad. They also contribute to knowledge and technology transfer, as well as increase competitiveness.



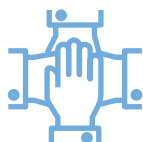
Over half of Wrocław companies employ professionals with mixed competencies.

At present, strong knowledge in IT combined with mathematics or economics is the most wanted among employers (according to 58% and 54% of respondents, respectively). The need to employ interdisciplinary professionals should influence the curricula implemented at local universities.



Wroclaw's IT sector is highly internationalised.

Foreign companies constitute 66% of clients for Wroclaw's IT industry. Moreover, the highest percentage among large and medium-sized companies is represented by global enterprises.



Companies from the SME sector focus on development in niche technologies.

This results from the need to stand out on the market and a great potential for development in specialist areas. 25% of small-sized enterprises provide Artificial Intelligence solutions, whereas 23% of medium-sized companies develop software for e-commerce.



Finance, IT, manufacturing and trade, as well as transport and logistics, are the leading industries where Wroclaw IT solutions are applied.

In particular, the last three sectors indicate that IT companies in Wroclaw have a great potential for development in Industry 4.0 technologies.



Wroclaw's IT ecosystem is undergoing rapid changes that local companies and universities have to keep up with.

Over 75% of Wroclaw companies claim that the IT technologies they currently work with will change within the next 3 years. Important trends (such as the popularity of Python used to develop Artificial Intelligence solutions) should affect the curricula available at local universities.



In the future, the level of innovativeness among Wroclaw's IT companies needs to be raised.

Software houses in Wroclaw need to define a domain or technological feature that would help them find a niche on a competitive market. Startups should invest in the creation of ground-breaking solutions and innovations.



To foster development within the IT sector, it is necessary to strengthen cooperation within the local ecosystem.

This means closer cooperation between companies within branch organisations, as well as between business, city and academia. There should be an increase in the number of enterprises cooperating with universities (42% at present) and a better use of the intellectual potential of scientists and students.

Glossary of terms:

Types of business entities:

Large company – a company employing 250 workers or more.

Medium-sized company – a company employing between 50 and 249 workers.

Small-sized enterprise – an enterprise employing between 10 and 49 workers.

Micro-sized enterprise – an enterprise employing less than 10 workers, excluding One Person Companies.

The nature of IT business operations:

BPO/SSC/ITO – business process outsourcing centres/shared service centres/IT solution outsourcing centres; units providing modern business services as part of internal organisational structures (SSC) or by commissioning them to external business entities (BPO, ITO).

Software producer – a software development company that retains copyright and earns from licensing.

Software house/IT consulting – companies dealing primarily with designing dedicated applications, custom software, software implementation and consultancy in IT infrastructure development.

Startup – an organisation in the initial stage of development that is looking for a profitable, scalable and repeatable business model based on technological innovation.

Business fields of IT companies presented in the report:

Applications/Tools - creating applications and specialised IT tools

Artificial Intelligence (AI) – a branch of computer science that creates intelligent software that allows machines using it to simulate human beings, i.e. act and react like them.

Big Data & Advanced Analytics – management and analysis of large data sets, i.e. activities related to searching, downloading, collecting, analysing and processing large and diverse data sets. The goal is to find patterns, correlations and trends, especially in the market data and customer behaviours that help to make business decisions.

Cloud Services & Virtualisation – creating virtual versions of hardware platforms and computer network as well as managing these resources in the cloud.

E-commerce Development – development of infrastructure related to e-commerce, allowing for modern sales and multi-channel customer service in an online shop.

ERP/CRM – the development of Enterprise Resource Planning and Customer Relationship Management software, used to manage organisational processes and client development.

Hardware – computer hardware, i.e. material parts of computers and other devices using the software installed.

Internet of Things (IoT) – a concept according to which specifically identifiable objects can directly or indirectly collect, process or exchange data via a network, most commonly the Internet.

IT Consulting – activities that focus on advising companies and organisations on how to effectively implement and use technology to achieve business goals more effectively.

Mobile App Development – development of mobile applications, i.e. creating software that can be run on mobile devices, such as smartphones, tablets or smartwatches.

Network & Collaboration Tools – creating IT tools that allow for cooperation between two or more people using the Internet.

Project Management – a set of tasks performed to achieve the main or indirect goals set in time, related to the implementation of a given project.

Software as a Service (SaaS) – a method of software distribution in which the providers develop their applications on servers and subsequently make these applications available to clients via the Internet. In this service model, the client does not need to install and run the program on a Personal Computer.

Operating System (OS) – development of the operating system, i.e. computer system management software that creates an environment for running and controlling user's tasks.

Other Software Development – the widest category in the report that includes IT solutions for specific industries (production, logistics, banking, automotive, etc.), business processes (business management, human resources, assets) and other unspecified areas (embedded software, gaming).

Research & Development (R&D) – activities focused on the research and creation of new - or the development of - existing technologies. Often within separate company departments, the purpose of which is not to generate short-term profits but to develop technologies.

Service Management – all activities carried out by the organisation to design, plan, deliver and control IT services offered to clients.

Software Maintenance – technical support, including services performed for a company or organisation focused on the maintenance and modification of IT systems.

User Support/Service Desk – activities focused on assistance in operating IT applications and eliminating problems related to both hardware and software.

Web Development – development of websites and Internet applications for sharing via intranet or the Internet.

IT market in Wrocław

- introduction

Wrocław is a unique location on the map of the Polish IT sector. The city is considered to be one of the most developed and innovative IT ecosystems in the country.

Of course, there are some things that are not perfect but when compared to other cities, Wrocław could be called the Polish Silicon Valley.

A representative of a large company

If I were to do somewhere else what I do in Wrocław, I would probably not find such conditions in any other Polish city.

A representative of a medium-sized company

I started in 1999, when there were no more than two companies or so. Today, there are hundreds, maybe even thousands, starting from the smallest to the largest businesses. I think this is a great place to work for people and engineers.

A representative of a small-sized enterprise



The fourth-largest
metropolitan area
in Poland



112,000 students
at Wrocław universities



Including over 15,000
in IT-related fields

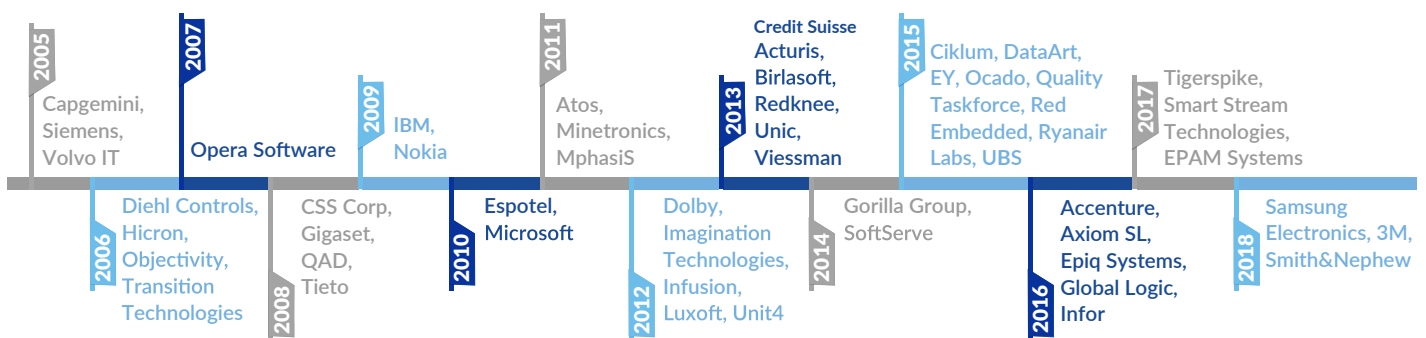
The Wrocław agglomeration has about 1.2 million inhabitants. This makes the capital of Lower Silesia the fourth largest metropolitan area in Poland. At the same time, it is the third-largest academic centre in the country. The total number of students in the city is 112,000, including over 15,000 educating in IT-related fields¹. Taking into consideration this intellectual potential, as well as its favourable geographical location, Wrocław can certainly become a leading destination for investors from the IT industry.

¹ In such fields as computer science, cybersecurity, ICT, telecommunications, electronics, mathematics, physics, automation and robotics

From hardware to software – the history of Wrocław’s IT market

The beginning of the Wrocław IT market dates back to 1963 when the local electronics manufacturer ELWRO launched the first Polish Odra computer on the market. Until the 1990s, Wrocław was the only place in Poland where computers were mass-produced. In 1993 ELWRO was acquired by the international leader in the technology industry – Siemens – that decided to close down the factory. In 2000 Siemens created their Software Development Centre here. Since then, Wrocław has become the home of a large number of international corporations operating in the IT/R&D sector.

Major foreign investments in the IT sector in Wrocław in subsequent years



Dynamically operating academic institutions enabled well-educated and professionally experienced programmers to set-up their own business entities - in the form of software houses and startups in Wrocław - giving rise to the SME sector in the city’s technology industry. The activity of foreign investors allowed their employees to gain experience and domain knowledge, additionally enhancing this process.

An important point in time in the development of Wrocław’s IT market turned out to be the global economic crisis in 2007-2009, when many international companies had to look for cheaper yet still reliable IT service providers. At that time, Wrocław had already had the reputation and the necessary competences to open up towards specialists and contractors from around the world. Foreign clients not only offered higher pay rates but the cooperation with them also had a positive impact on the business models of local companies. The development of the industry was manifested in a significant increase in hiring IT specialists, which amounted to over 80% in Lower Silesia since 2008².

A new stage in the development of the industry

Several important factors influence the development of the technology industry in Wrocław. Currently, the significant majority of IT students and those in IT-related fields study at the Wrocław University of Technology, the University of Economics and the University of Wrocław. An increasing number of IT fields, often in cooperation with local business entities, are also launched by private universities. In 2020, Coventry University will start operating in Wrocław. Its branch will be the first independent institution of this type established by

² Based on Eurostat regional data on the labour market and employment in section J “Information and communication” (NACE_2 rev. classification).

a foreign public university in Poland. This happened because Wrocław is seen as an attractive centre for students and professionals not only from Poland but also from abroad.



Over 60,000 experts
work in Wrocław



Nearly 7,000 foreign
students are enrolled
at Wrocław universities

International corporations attract talents from around the world, provide models of work methodologies and allow for global contacts. Moreover, the number of projects based on advanced technologies that investors decide to develop in the capital of Lower Silesia is notably increasing. ARAW (Wrocław Agglomeration Development Agency) estimates that, currently, nearly 36,000 specialists work in the Wrocław IT industry.



36,000 IT specialists
in Wrocław



110 large IT/R&D
centres in Wrocław

Small and medium-sized enterprises offer employment to local programmers in interesting and creative projects in such fields as fintech, medtech, Big Data, Internet of Things or Artificial Intelligence. The startups in Wrocław (according to Startup Poland research³, the city is the second-largest centre in terms of their activity in Poland) implement innovative services and products, which they notably compete on global markets with.



200+ start-ups



550+ tech
events annually



25+ incubators
and co-working spaces



10+ organisations
supporting start-ups

Wrocław is also a developing technological ecosystem. Almost every day, there are events addressed to young creators and programming enthusiasts. There are also numerous IT associations, incubators and other supporting initiatives. It is a place full of passion, with an appetite towards innovation and an ambition to maintain the image of the Polish Silicon Valley.

³ Startup Poland: www.home.startuppoland.org



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Furthermore, CitySpace was also chosen by international IT companies when opening their first branches in Poland (eg Showpad and Cloudical), as well as local startups such as Kjosk. All of them found a place in the new Wrocław location - at the Aquarius Business House. This is not the first CitySpace point in the city - tenants are also provided with office spaces at Nobilis Business House. Nokia has previously located its businesses here and, more recently, so too have Northpass, another technology company.

CitySpace also operates in Warsaw, Katowice and Gdansk – with a total of 10 locations in Poland. The largest number of offices is in the capital: Rondo ONZ 1, Plac Unii and Galeria Młociny as well as in Park Rozwoju in Mokotów and in Beethovena.

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Research results for Wrocław's IT market

The characteristics of enterprises

Wrocław is a city of exceptional companies and projects in the modern information technology industry, not only on a local but also on a global scale. According to Eurostat, Lower Silesia is the third largest IT market in Poland, right after the voivodeship of Mazovia [Mazowieckie] and Lesser Poland [Małopolska], hiring over 45,000 highly-qualified specialists. ARAW estimates that around 36,000 people⁴ work in Wrocław's IT sector. All types of enterprises operate here in terms of size and business nature (see Glossary).

According to our Expert:

Wrocław is a good location to run an IT business. It is an environment of young, dynamic and energetic people. They open global corporations towards new perspectives and they constantly want to expand their knowledge. They are somehow impatient as far as their career is considered, since a year of running the same operations seems to be an eternity for them. That is why they need to be offered a wide range of development opportunities.

Artur Sawicki, Director of the Centre of Excellence, Infor

Research participants in terms of company size



44%

small and micro-sized enterprises



33%

medium-sized enterprises



23%

large enterprises

Software house/IT consulting turned out to be the most frequently represented type of business among the surveyed participants (56%). Other companies defined themselves as software producers (16%), shared services centres – SSC/BPO/ITO (11%) and startups (10%). Some respondents were of the “other” category. This group includes the likes of mobile device manufacturers, media groups, quality assurance business entities and electronics designers.

⁴Based on Eurostat regional data on the labour market and employment in section J “Information and communication” (NACE_2 rev. classification) and CSO data on employment and wages in the national economy in section J “Information and communication” (PKD classification). Data for 2018.

Research participants in terms of their business nature



56%

Software house
/ IT consulting



16%

Software
producers



11%

BPO/SSC/ITO



10%

Startup

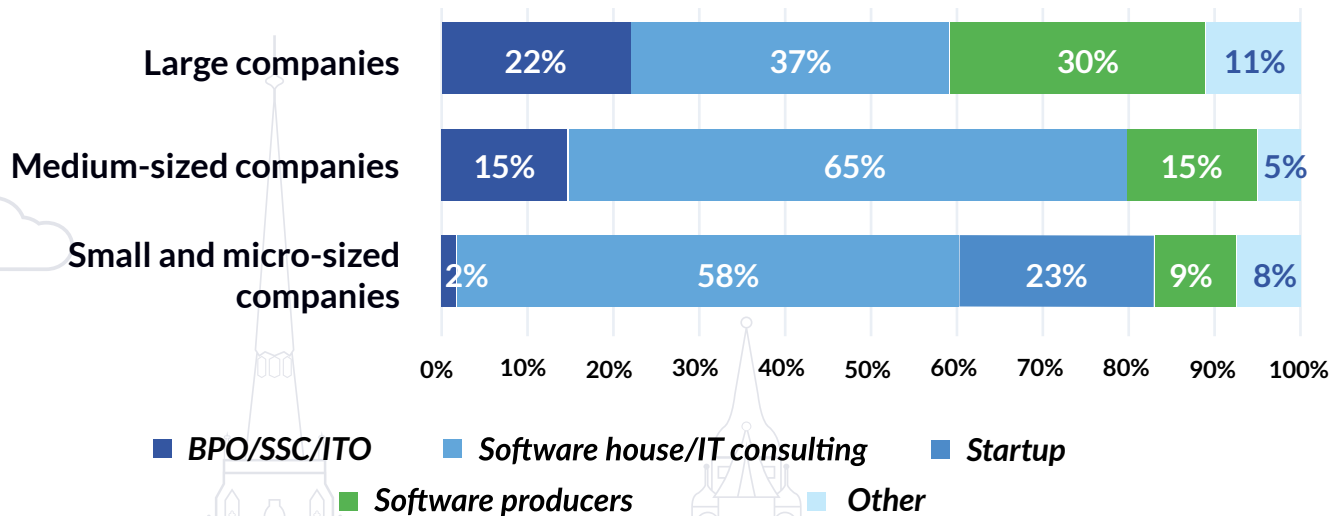


7%

Other

The most diversified in terms of business activities are large corporations, which are mostly represented by software house/IT consulting, but there is also a significant number of shared services centres and software producers. Software house/IT consulting is also dominant among the medium and small/micro-sized enterprise categories (65% and 58% of responses, respectively). Almost one-fifth of small and micro-sized companies are represented by startups.

Chart 1. Business nature of Wrocław IT companies



Achievements

Large IT companies located in Wrocław are proud of the solutions they develop and implement. The most interesting projects from the last 12 months they mention include “Programming of modern household appliances or cars”, “projects in Artificial Intelligence for the automotive industry” and “system migration for 20,000 users to new cloud technologies without disabling the system”.

In turn, a great number of small and medium-sized IT companies indicate the scale and rate of growth as their distinguishing features. This applies to both the number of employees (up to several dozen people) and revenues (up to 50% growth annually). At the same time, representatives of SMEs pay attention to the key significance of long-term cooperation with clients much more often than those of large companies.

As stated, one of the leading factors affecting current and long-term success is building business relationships or the minimum level of churn rate – which is the rate of individuals moving out of a collective group of clients. Elements such as stabilisation, building market reputation or a system of recommendations, leading to further orders and business development, also speak for long-term cooperation. Many entrepreneurs in Wrocław state that they can provide their customers with a comprehensive solution, not just a part of the project.

We have some key clients and certainly one of our achievements is that they grow with us, so we develop our business and their business at the same time.

A representative of a medium-sized enterprise

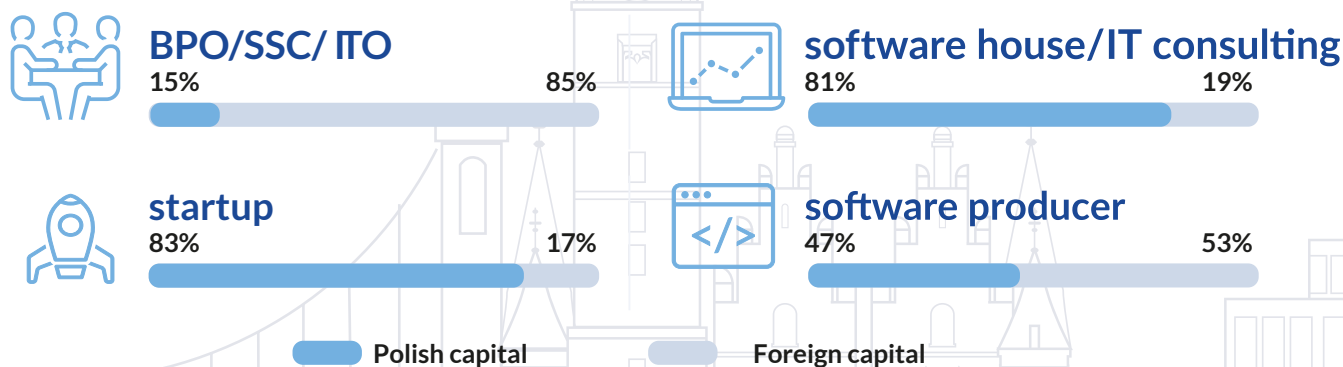
Speaking of their successes, small and medium-sized companies indicate acquiring new clients, including foreign ones. Last year they cooperated with: “one of the world’s largest companies dealing in commercial DNA analysis”, “a top American company”, “one of the five largest pharmaceutical companies in the world”, “a network of several hundred hotels”, and “University of Qatar”. Small business representatives, more often than other respondents, declare cooperation with startups that is intended to support the development of the latter, provide them with the necessary know-how or lead to an increase in the scalability of the solutions offered (i.e. by improving the code).

The impact of large market players

In terms of ownership structure, Polish capital notably dominates (68% of responses). Companies with the majority of foreign capital constitute 32% of the total, which is a higher result when compared to the share of these companies in the Polish IT industry of 23%⁵. Many foreign entrepreneurs operate in the segment of modern business services SSC/BPO/ITO (85%). In turn, the largest percentage of Polish business entities was recorded among software house/IT consulting group (81%) and startups (83%).

Wrocław is characterised by a significant share of foreign corporations in the IT industry, which are generally considered to be the driving force of the entire sector.

The nature of IT business activities according to equity



⁵ Own calculations based on CSO data on the operations of non-financial enterprises and companies with foreign capital in Poland, according to the PKD classification. Section J „Information and communication”. Data for 2016 for enterprises hiring over 10 people.

With all respect and admiration for startups and small companies, it is hard for me to imagine that these companies could have given such a kick-start to Wrocław's IT environment as it actually happened.

A representative of a large enterprise

Large Wrocław IT enterprises stand out in the local market not only in terms of their size and scale of projects. Their uniqueness is also noticeable in the national or European area. The largest company operating in the modern business services sector is located in Wrocław – it employs over 8,000 people throughout Poland and, in the capital of Lower Silesia itself, it hires over a thousand employees solely related to software development. The brand's customers are mainly leading automotive and logistics companies.

Polish IT corporations established in Wrocław are also successful on an international scale. One of them was recognised as the fastest-growing Amazon Web Services partner in Europe. In two years, more than a hundred employees from this company have had training in technology offered by the American giant from the e-commerce industry.

Other interesting examples are the country's largest R&D centre developing 5G technology or the European Centre of Excellence of an American software producer. As far as the second of the aforementioned projects are concerned, Wrocław competed for it with such prominent IT development centres as Barcelona. Thousands of specialists from various fields, from the sales department to implementation consulting, will be trained in the centre for a highly-qualified and multidisciplinary staff to meet the labour market demands in the modern technology sector.

According to representatives of small and medium-sized companies, due to the activity of international corporations in Wrocław, a transfer of knowledge and technology took place, which had a positive impact on the level of competences available on the market. Large companies are to some extent a magnet for specialists who, thanks to them, decide to settle in the city and then migrate to smaller enterprises.

Considering the size and diversity of the local labour market, which is characterised by significant demand for specialists, respondents admit that there is competition between them as far as hiring employees is concerned. It is most difficult for the sector of small and medium-sized companies. Despite this, their managers emphasise that large market players are building the city's brand and recruiting experts with international experience. Another asset of corporations, indicated by their managers, is the wide spectrum of technology sources and projects (often end-to-end) in which employees are involved.

Business operations model and strategy

The IT industry in Wrocław is also highly diversified in terms of business models. Large companies are mostly branches of global organisations, whereas small and micro-sized enterprises operate within headquarters located in the capital of Lower Silesia. Among medium-sized companies, the largest number of branches are represented by international corporations, as well as units with headquarters in Wrocław, and with branches in other Polish cities.



70%

of small and micro-sized enterprises operate **within their headquarters** located in Wrocław



63%

of Wrocław's large companies are **global organisation branches**

When the greatest achievements of international corporations are concerned, their representatives mention: “making the organisation more flexible and adapting it to the needs of group partnerships” or “strengthening the relationship between Wrocław and global organisation”. In addition to internal transformation, it is also crucial for them to acquire new projects for Wrocław city and build teams to implement technologies that determine the future of the entire company.

On the other hand, the Wrocław SME sector focuses on niche technologies, as dictated by the company need to stand out on the market and the great development potential of unique specialisations. Such businesses, as a rule, base their strategy on sales to foreign customers. The niches which they invest in include creating Artificial Intelligence algorithms, providing ERP software for micro and small-sized enterprises, developing LoRa technology and managing fluctuations on cryptocurrency markets. They also try to create their own products and develop their authorial technologies, trying to move towards a hybrid model, i.e. one of both service and product types. By doing so, they are also aware that such a transformation can be difficult, due to high initial costs and business risk.

We have changed the strategy and now focus on the niche in which we operate unbeatably. We are trying to modify the business model and change from a software house to a production company that will work with clients only in terms of its products.

A representative of a small-sized enterprise



Employment

The high quality of the local labour market is crucial for Wrocław IT companies. It conditions their current business situation and determines future development perspectives. Wrocław is not omitted from pan-European trends related to the significant demand for IT experts⁶ and the high financial expectations of potential candidates, including those with little experience in the IT industry.

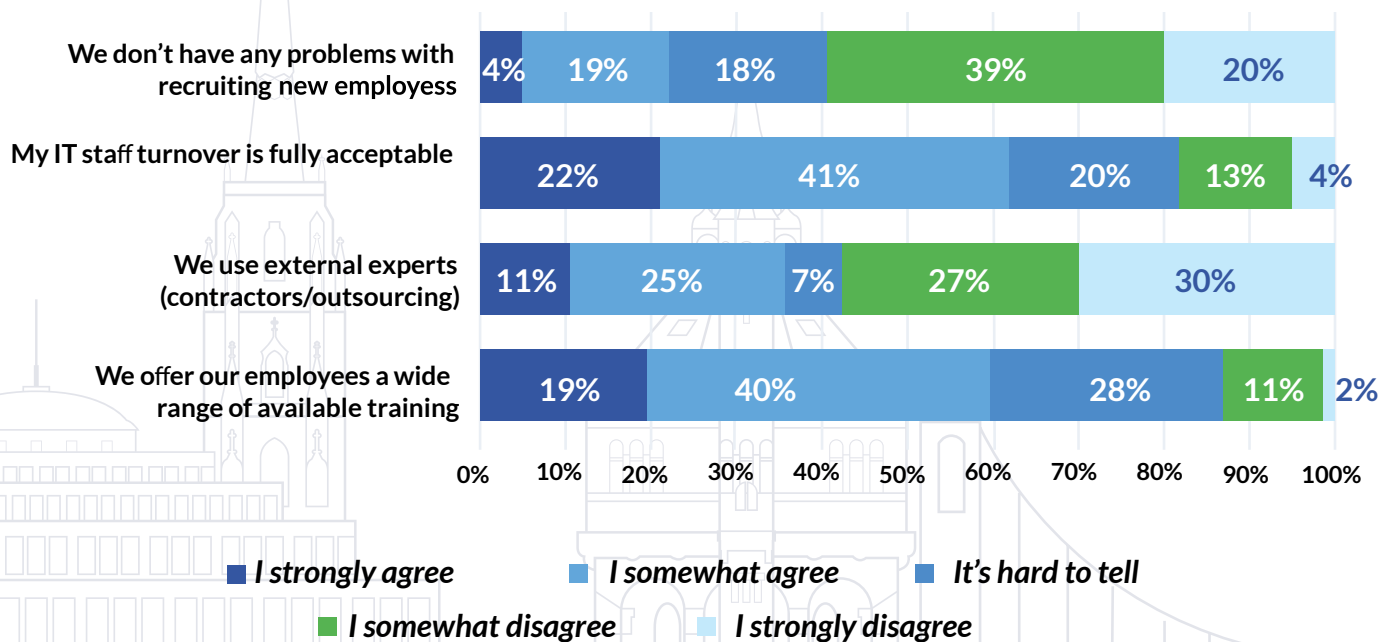
The local labour market remains competitive when compared to other centres. It certainly stands out with its size and access to talented students or specialists.

This market is huge. If we truly need a worker, we will find one. It will cost a lot, but we will find one.

A representative of a large company

Of surveyed companies, 23% do not experience problems with recruitment, yet half of all respondents use outsourcing experts. Managers of large enterprises assess the situation on the labour market more favourably than representatives of small and medium-sized business entities. The latter have more difficulties in recruiting specialists yet, at the same time, they are proud of the low staff turnover in their organisations. It guarantees the stability of implemented projects and increases the chance of acquiring new clients as well as keeping close the existing ones. Current staff turnover rates are acceptable for over 60% of companies. One way to make an IT professional want to stay in a company is to flatten organisational structure and create autonomous teams that, in addition to separating duties and assuming responsibility for customer contact, also manage the revenue and costs they generate. Most companies also offer their employees a wide range of available training.

Chart 2. Hiring and maintaining the workforce



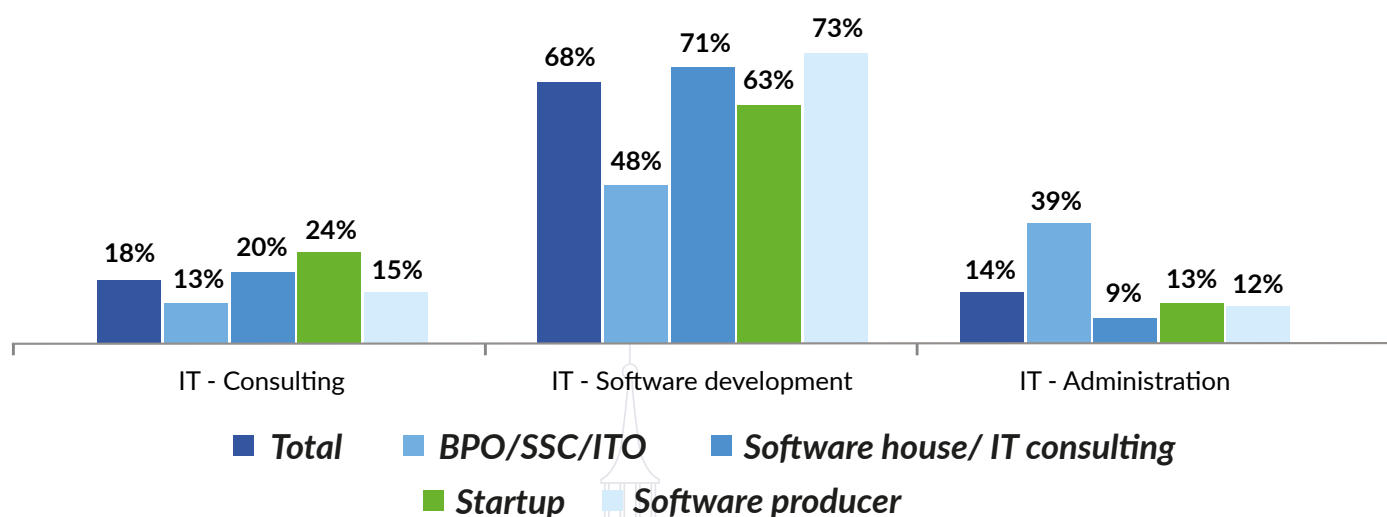
⁶The European Commission forecasts that in 2020 there will be up to 600,000 IT specialists lacking in Europe. Earlier estimates assumed a million vacancies. See A. Błaszczak, „Wolniej będzie przybywać pracy dla informatyków w Unii”, <https://www.rp.pl/Rynek-pracy/311279908-Wolniej-bedzie-przybywac-pracy-dla-informatykov-w-Unii.html>

Demand for professionals

The vast majority of respondents mainly employ professionals who are required to be knowledgeable and experienced regarding the latest information technologies. In many companies, IT workers constitute over three-quarters of all employees.

In the IT companies surveyed, the majority of employees (68%) occupy job positions related to software development. Only in the BPO/SSC/ITO segment do administrative positions have as much share in the employment structure as software development. Almost one in four surveyed startups deal with IT consulting.

Chart 3. Distributon of particular IT job positions



Advisory positions

- + product manager
- + system implementations
- + security/auditing
- + business intelligence



Software development

- + business analysis
- + architecture
- + programming
- + testing
- + project and service management



Administrative positions

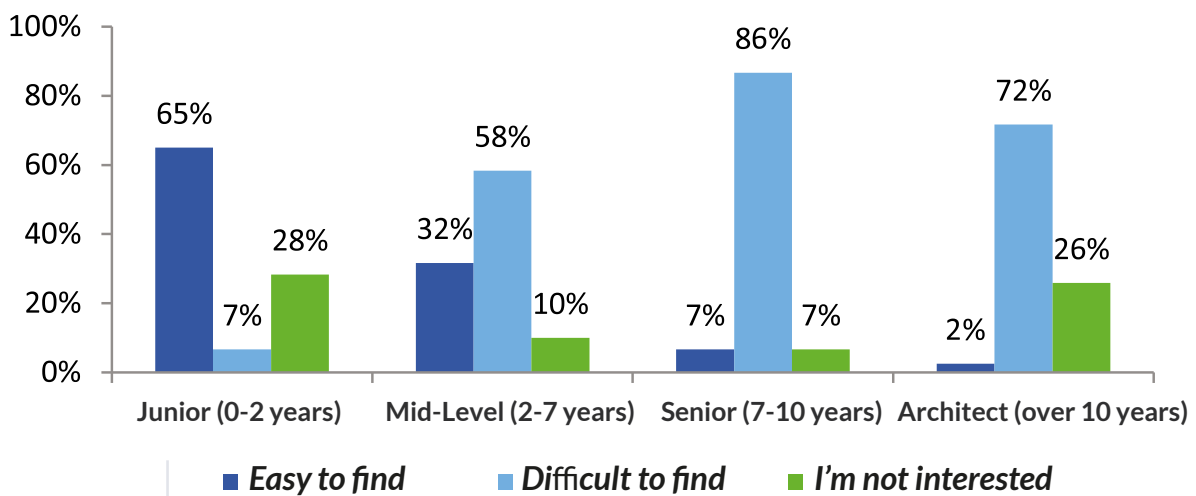
- + database administration and data storage
- + network administration
- + technical support/helpdesk
- + service maintenance
- + system administration

The scale of difficulty in recruiting new employees in Wroclaw increases along with the experience that is required from the candidates. Whilst 65% of the surveyed companies are of a sense that there is no problem on the market with recruiting juniors, in the case of architects, this ratio is only 3%. However, employers are aware of the fact that the greater degree of specialisation and longer job seniority are the greatest limiting factors for the availability of experts in the wider industry, not only in Wroclaw.

Indeed, it is hard nowadays to find the required competences. I don't know if there are such people anywhere. For sure in New York or London, but they would certainly be three times more expensive than ours. I am still very lucky so far since we have been attracting great IT specialists recently, even from German companies.

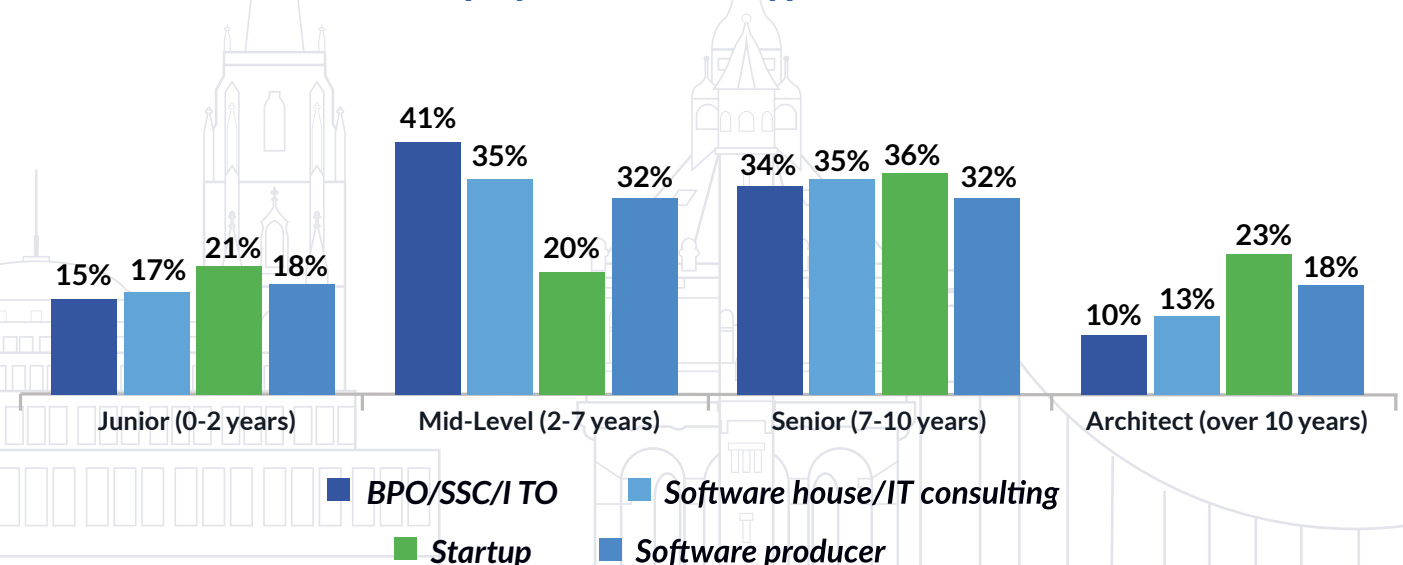
A representative of a small-sized enterprise

Chart 4. The availability of IT professionals on the local market



Wroclaw IT companies most often hire employees with mid-level and senior-level job experience. They are particularly important for business entities of the SSC/BPO/ITO and software house/IT consulting types, as well as software producers. Compared to all enterprises, startups are distinguished by the involvement of professionals with extremely different job experience. On the one hand, they employ junior-level employees (21%) while, on the other hand, when compared to other companies, they employ the most architects.

Chart 5. Distribution of IT employees in various types of business entities



Wroclaw companies are trying to attract talented students through various initiatives, such as internship programs. This option is most often and most consistently used by corporations. Their managers note that, in Wroclaw, one can employ young and well-educated people whose achievements are confirmed by awards they received in international competitions in the area of computer science or robotics.

When it comes to cooperation with universities or the level of education at Wroclaw universities, we have great students, who are the winners in prestigious programming competitions – e.g. they won silver this year in Porto, Portugal, for the University of Wroclaw. (...) It is worth showing, as it distinguishes us from many European cities.

A representative of a large enterprise

The vast majority of respondents hire candidates with a university degree, although not necessarily in the IT field. Graduation is not considered to be necessary to be employed in this industry. Individual skills are more important for employers. One can be even a self-taught person or brilliant student at high school to be noticed. Graduates of private programming courses are also employed, yet they constitute a less significant stream of potential candidates.

A young person would be easier to train and is more flexible, as he/she is not afraid to take risks and learns a lot. (...) At this stage, I prefer to hire juniors and give them the freedom and opportunity to gain knowledge.

A representative of a small-sized enterprise

The expectations for a specific level of experience from a professional also varies, depending on his/her role in the organisation. Advanced product development, R&D activity or IT system implementation require a longer period of job experience when compared to supporting job positions, such as the back office.

Key competencies

More than half of Wroclaw companies

look for IT employees with additional skills to expand the scope of ongoing projects or to scale existing products.

Companies from the BPO/SSC/ITO sector are mostly looking for IT employees with additional competencies to expand the scope of ongoing projects (85%). This confirms the evolution of shared service centres, which are currently undergoing a digital transformation from units dealing with transactional operations and functions supporting ongoing business operation to high-level and comprehensive organisations that are based on process automation and robotisation.



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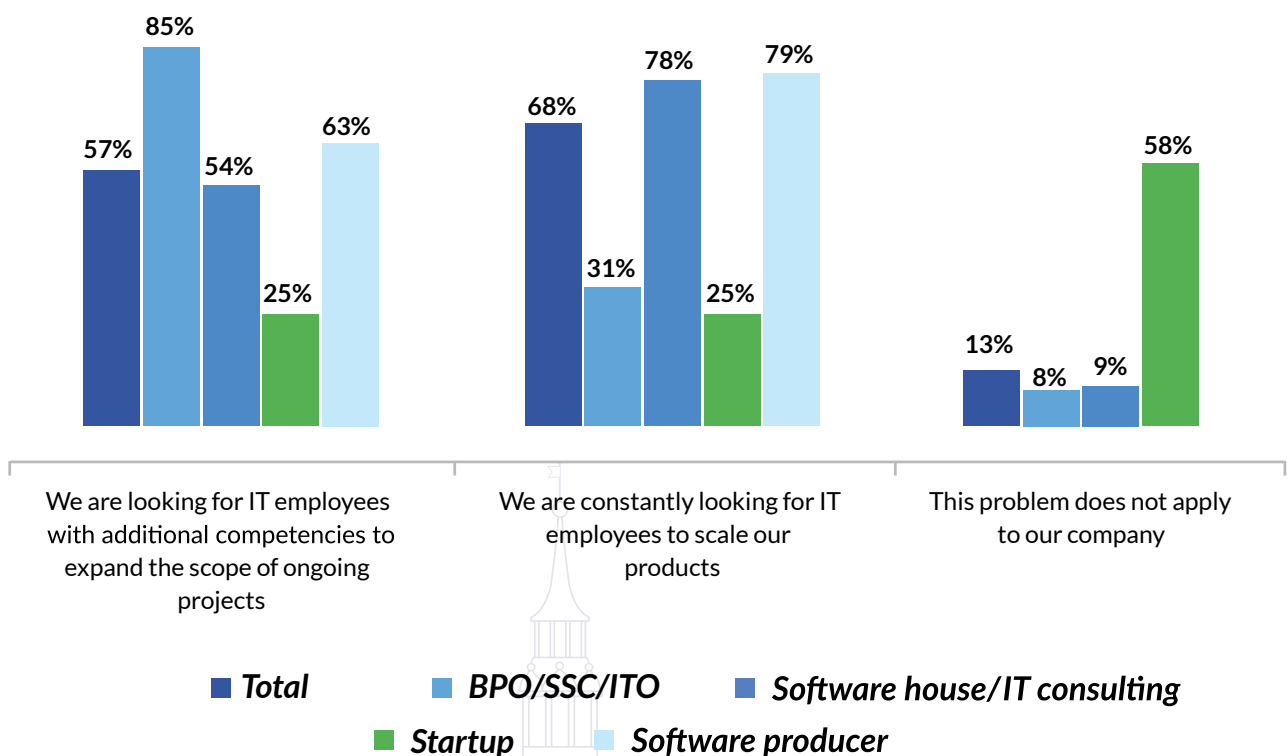
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Another type of transformation can be noticed among software house/IT consulting enterprises and software producers. Over three-quarters of them are looking for employees to scale their current products. Therefore, unlike shared service centres, their needs focus on developing and increasing the use of currently offered solutions. Interestingly, the majority of Wrocław startups declare that the problem of acquiring new competencies not used in the company so far does not apply to them.

Chart 6. Demand for specialised IT employees in various types of enterprises*



The challenge for Wrocław IT companies is to acquire professionals not only with programming knowledge, but also with soft skills. Employers need people with a significant level of commitment and unique skills, especially those not related to the IT field, such as knowledge of additional foreign languages. In addition to English, German is the most sought language, which is why companies looking for IT specialists with German proficiency should consider their high salary expectations.

Hiring experts with developed coordinator features may also be challenging and requires the hiring company to invest in additional training. The easiest-to-hire candidates on the market are those who are focused on the development and the ability to work in demanding, stressful conditions and in an international business environment.



Coordinator features:

- + customer-orientation
- + project team management
- + practical knowledge of project management methodologies



Easy to employ **21%**



Difficult to employ **71%**



Irrelevant competency **8%**



Focus on development

- + learning
- + tracking new trends
- + organising own work



Easy to employ **60%**



Difficult to employ **37%**



Irrelevant competency **3%**



Ability to work in demanding conditions

- + coping with stress
- + ability to work in multicultural, global environments
- + ability to work in virtual teams
- + ability to work in a chaotic environment



Easy to employ **34%**



Difficult to employ **56%**



Irrelevant competency **10%**



Unique skills

- + comprehensive skills
- + command of a foreign language other than English
- + innovativeness



Easy to employ **18%**



Difficult to employ **73%**



Irrelevant competency **9%**



High level of commitment

- + goal orientation
- + concern for quality
- + responsibility
- + social and emotional intelligence



Easy to employ **22%**



Difficult to employ **77%**



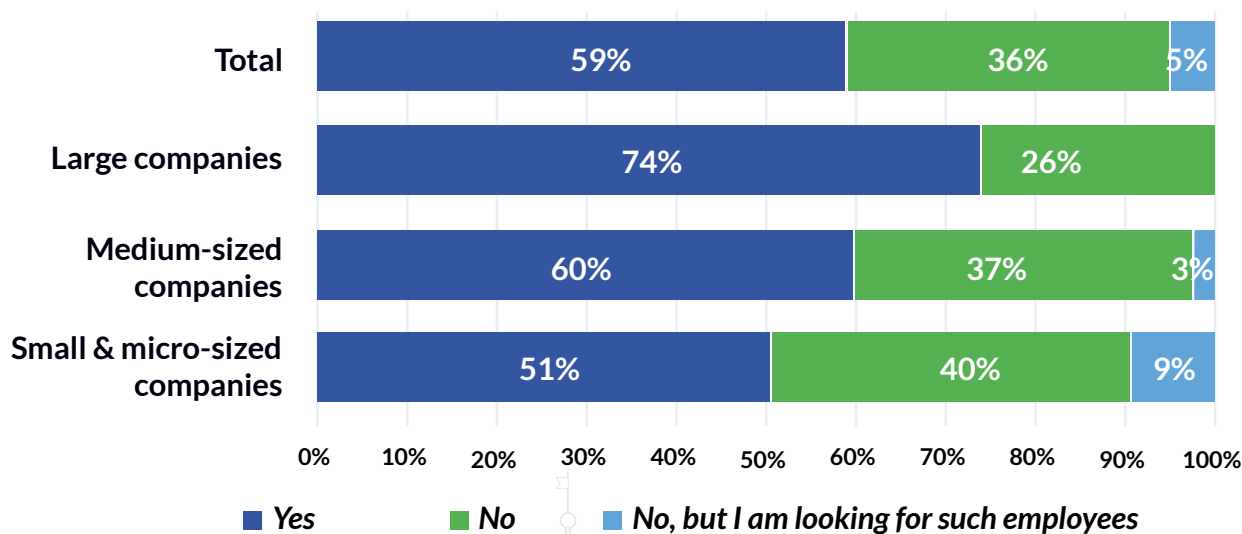
Irrelevant competency **2%**

Employers stress the difficulty in finding experts in niche areas, such as “low-level issues related to the Linux operating system”, “specific solutions for the medical or automotive industry” and “research in Artificial Intelligence.” There is also a shortage in the number of employees with large job experience, such as architects or business analysts.

Comprehensive competencies

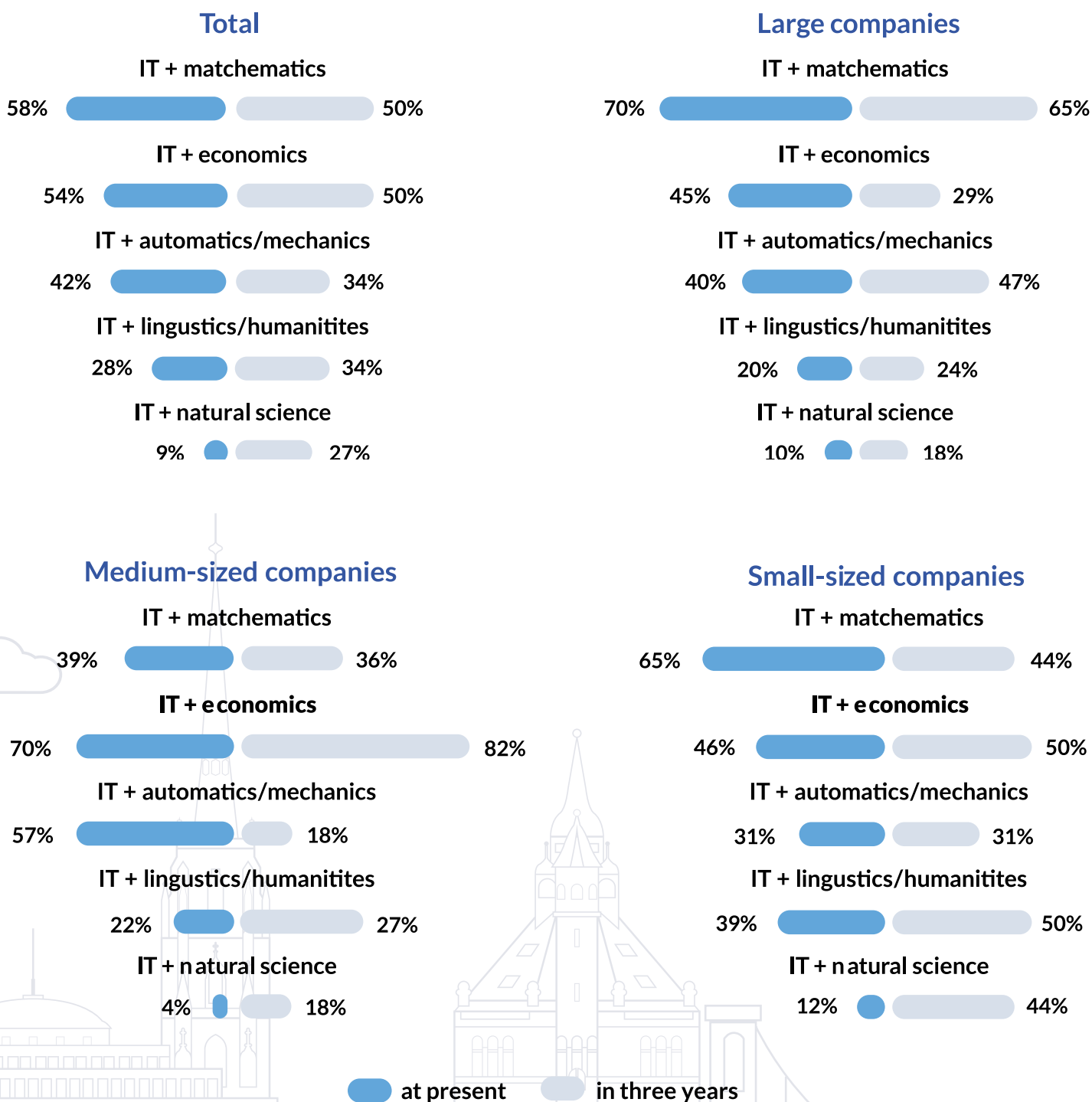
Over half of Wrocław IT companies, mostly large enterprises, hire employees with comprehensive qualifications. With the increase in the size of the typical business entity the share of employed professionals who combine programming with another field of sciences also increases.

Chart 7. Do you hire employees with comprehensive qualifications combining IT with another field of study?



Knowledge of mathematics and economics is the most important feature for employers in the IT industry. Programmers with knowledge in mathematics are employed by most corporations, as well as small and micro-sized enterprises. Medium-sized companies, in turn, are characterised by a large demand for experts combining IT and economics. Interest in candidates with such competencies will increase even further in the forthcoming years. Consequently, the demand for mathematics specialists is expected to fall in favour of other qualifications, although they will continue to play an important role in the labour market, especially for large companies.

Chart 8. Comprehensive competencies of employees hired in Wrocław IT companies - at present and in three years*



*Multiple answer question

In 2007-2017, Wrocław promoted students who chose mathematics at their Matura exam and then decided to study IT or an IT related field. In the first year, such individuals were awarded “mathematical scholarships”. Annually, over 500 young people were granted. The program has been terminated due to the implementation of mathematics as an obligatory subject at Matura exams. However, the favourable results of that initiative have been observed on the labour market.

The third most common comprehensive competency is a combination of IT qualifications and automation/mechanics. Currently, people with these skills are mostly employed by medium-sized companies yet, over the next three years, this should change in favour of larger entities. This is strictly related to the robotisation and automation of the processes they support.

During this period, the demand for people combining IT, linguistics and humanities is also expected to increase, in particular by small and micro-sized enterprises, which may be affected by their involvement in the development of Artificial Intelligence technology.

We have now quite a lot of programmers who graduated from humanities and are doing a great job that they are good at. It is clear, they lack some foundations related to the most basic IT structures, but we are positive to have such people in the team and, through cooperation, achieve results that are satisfying to everyone.

A representative of a medium-sized company

The percentage of programmers who are at the same time specialists in natural sciences will also increase in the coming years. At present, the percentage of companies hiring such employees does not exceed 10%. In 2022, it will reach 27% and will increase three times as much among the smallest business entities.

Specialists from outside of Wrocław



62%

of IT companies employ remote workers

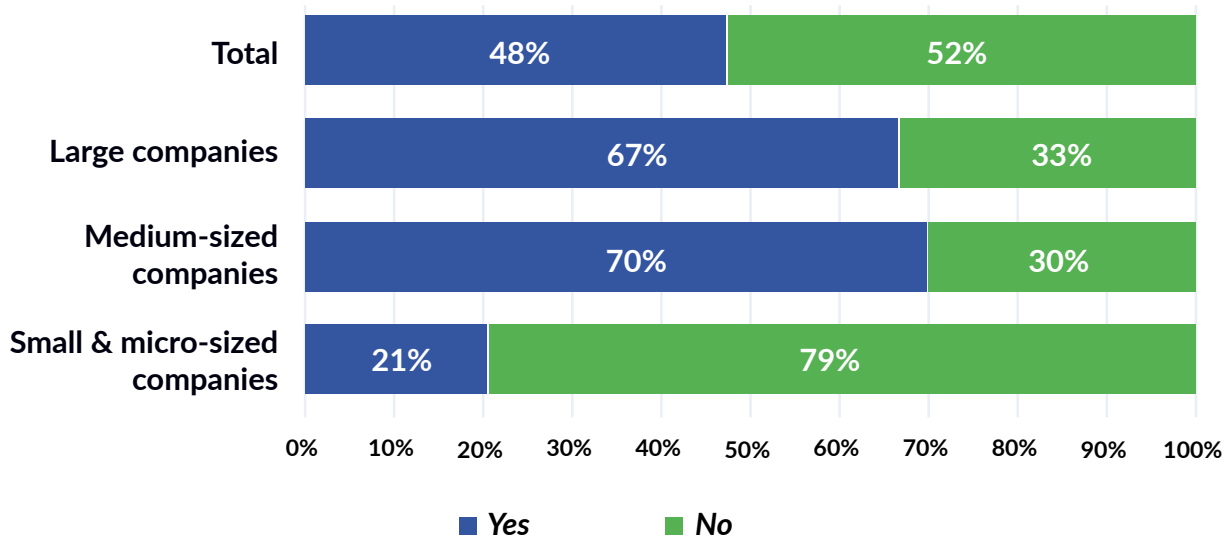


80%

of companies hire less than 25% of employees remotely

Almost half of Wrocław companies acquire IT specialists from abroad. Most often, large and medium-sized companies decide to make this move. Small and micro-sized business entities are interested in employing foreign employees to the least extent

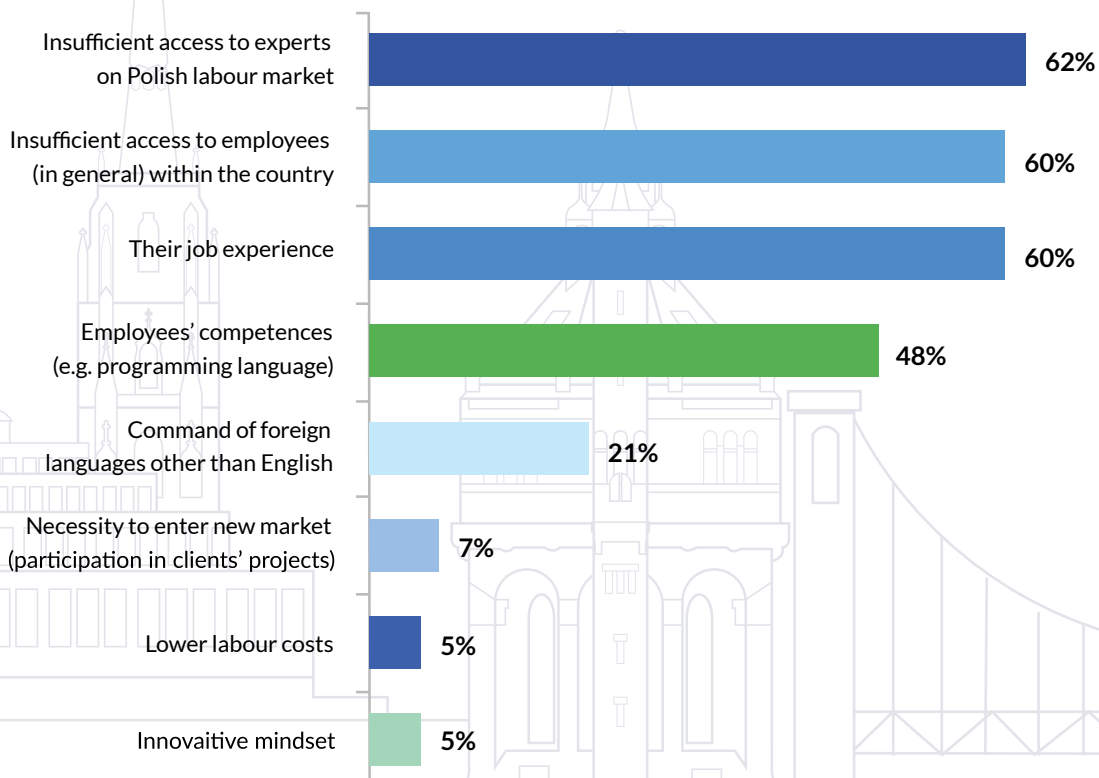
Chart 9. Employment of IT workers from abroad



Foreigners find employment in companies with foreign capital and in every third company where Polish capital is dominant. Almost all are stationary workers at their respective company's headquarters in Wrocław, but some have the opportunity to carry out their work remotely. This style of work is especially characteristic for startups.

The main reason why Wrocław companies employ IT specialists from abroad is insufficient access to employees on the Polish labour market. Additional arguments are their experience, command of languages other than English, and difficulty to find programming competencies. Interestingly, knowledge of local conditions when entering a new foreign market or lower labour costs do not play a significant role when employing foreigners.

Chart 10. Reasons for employing foreign IT workers by Wrocław companies*



*Multiple answer question

Some corporations in Wrocław employ individuals of up to 20 nationalities, and in terms of cultural diversity, one can experience the feeling of being a part of the legendary Silicon Valley.

The presence of foreigners brings a new way of thinking, creativity and innovativeness to a company. Employees from abroad are also characterised by the great commitment and determination. Their share in the employment structure of the Wrocław IT market may increase in the coming years. The vast majority of corporations and some medium-sized companies offer attractive relocation packages which allow candidates to go through the relocation process easier and more efficiently.

Unfortunately, the long waiting time for issuing residence and work permits by the Lower Silesian Voivodeship Office remains a barrier to the employment of non-EU citizens. Streamlining procedures in this area is crucial for the development of the regional industry.

The mass influx of IT specialists from abroad, especially from Ukraine, has a positive impact on the labour market, even in the context of those companies that are not actively looking for candidates outside of Wrocław, but employ foreigners already present in the region. It is worth mentioning that employees from abroad are not always foreigners, since they can also be Poles who lived outside Poland but decided to come back and develop in Wrocław or work remotely for local business entities.

We relocate people - we have already managed to bring several people back to Wrocław from abroad. (...) I'm speaking also of the Poles who accepted the job offers with relocation package and came back to Wrocław from London or Germany. We contribute to bringing emigrants back to Poland.

A representative of a medium-sized enterprise

Business activity of IT enterprises



Over $\frac{3}{4}$ of Wrocław IT companies state that the catalogue of information technologies they use **will change in three years**

According to our Expert:

As part of the ecosystem, we must focus on educating good programmers who know not just a specific programming language, but general programming patterns and paradigms. The market is changing faster and so are the technologies, languages and approaches - in a few years, it may turn out that the most important skill of individuals, but also departments and companies, will be the ability to quickly adapt to the new requirements.

Michał Kurzeja, CTO, Technology Director at Accesto

Wroclaw companies provide various IT services, hence it is difficult to determine a specific field of expertise within the local technology market. Having the opportunity to select multiple options from the entire scope of activities, respondents most often indicated web development – 48%. The second most popular answer was IT consulting (29%) and the third most common was the field of application and system development described in the study as other software development – 28%.

Other Software Development – the widest category in the report that includes IT solutions for specific industries (production, logistics, banking, automotive, etc.), business processes (business management, human resources, assets) and other unspecified areas (embedded software, gaming).

Importantly, as many as 20% of respondents develop Artificial Intelligence technologies that are widely used in leading and innovative IT solutions for the modern economy.

The most diverse are the fields of activity of large IT companies. The results indicate that one-third of corporations deal with Big Data & advanced analytics, over a quarter deal with ERP/CRM systems and project management, while over a fifth deal with cloud services and virtualisation, alongside business analytics.

Fields of activity among large IT companies in Wroclaw



30%

Big Data analysis



22%

Business analytics
Cloud services & Virtualisation



26%

ERP/CRM system management
Project management

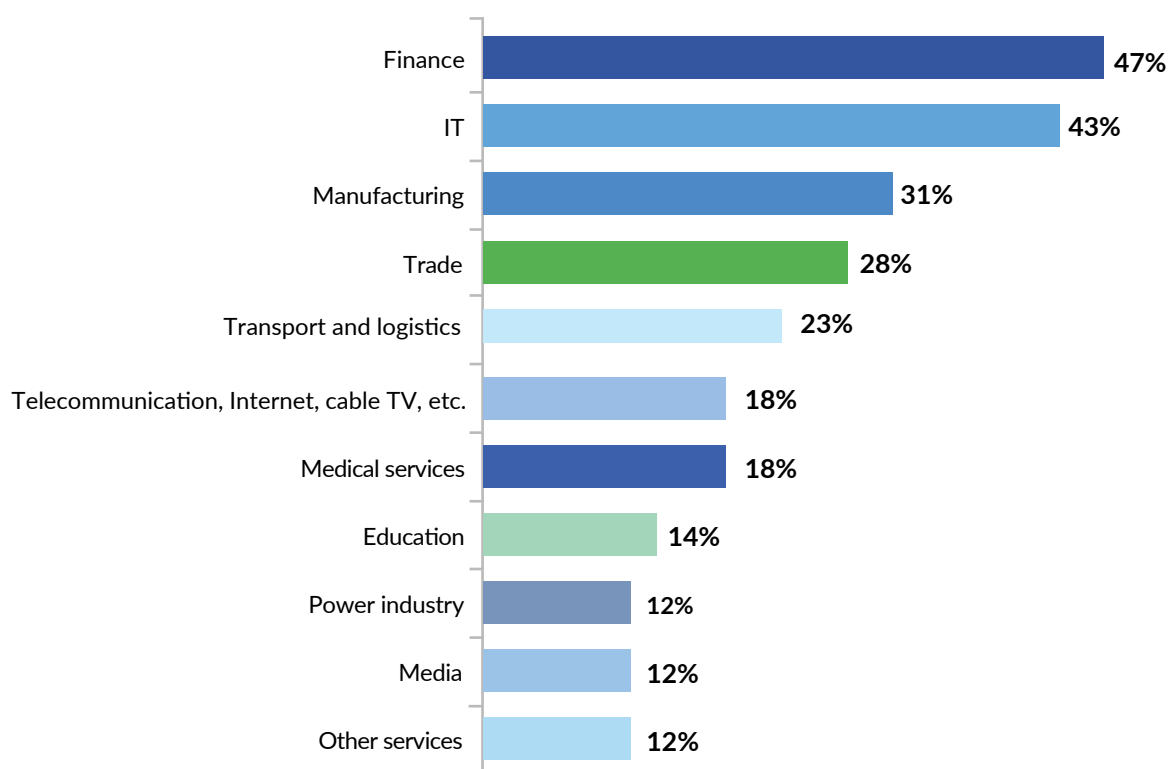


19%

E-commerce development
Internet of Things (IoT)

IT companies in Wroclaw create solutions for a wide scope of markets and industries, yet their main customers operate in the financial and IT sectors (47% and 43% respectively). Manufacturing and trade, as well as transport and logistics were indicated subsequently.

Chart 11. Customers of IT solutions provided by Wrocław companies per industry*



The financial industry is a leading customer of IT solutions all over the world and the Wrocław IT market certainly has its share in it. However, indicating IT as the target customer of local business entities means that they either offer products used in the IT industry or serve as subcontractors without reaching the end-user. In the latter situation, the favourable price-quality ratio of local specialists plays the major role, thus it is not considered a sole foundation of competitiveness for Wrocław companies.

According to our Expert:

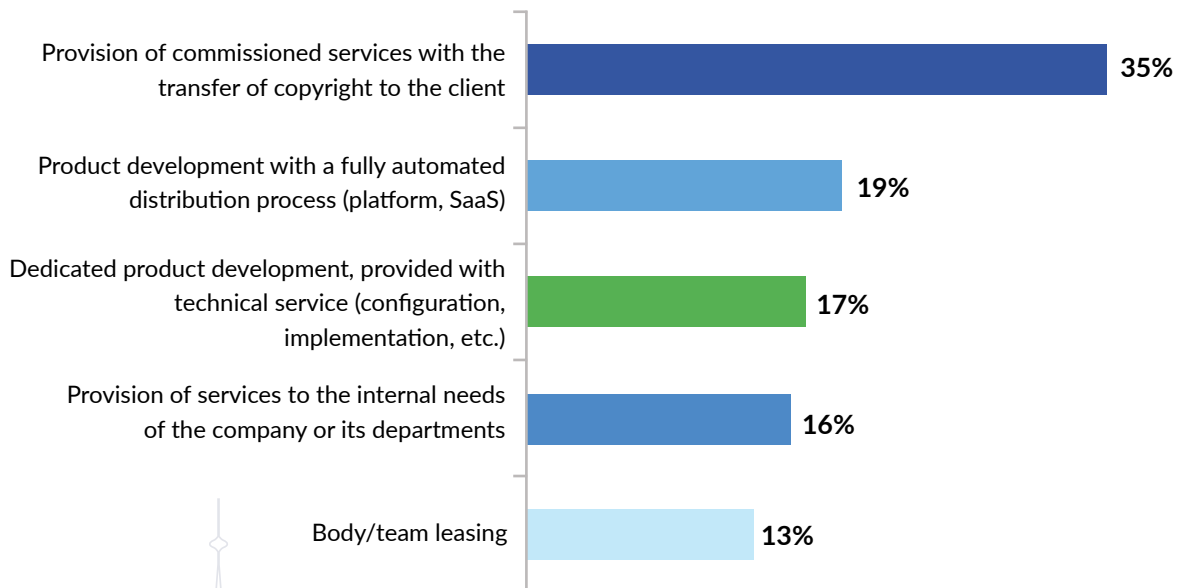
We are pleased with the following industries indicated: manufacturing and trade, as well as transport and logistics. These are attractive sectors, which are currently undergoing digital transformation and adopting innovative solutions such as AI, Big Data or IoT. The focus put on the solutions provided for these industries in Wrocław is in line with the direction of the EU innovation policy related to the development of Industry 4.0. This will help companies to obtain additional funds for investments and creating transformation hubs in this field.

Grzegorz Rudno-Rudziński, Managing Partner at Unity Group

It is worth noticing that the services described as body or team leasing are offered only by 13% of Wrocław IT companies.

The dominant solution provided by companies are commissioned services with the transfer of copyright to the client (35%). Almost every fifth IT company develops a product with a fully automated distribution process via platform or SaaS (Software as a Service).

Chart 12. The structure of business solutions offered by IT companies in Wrocław



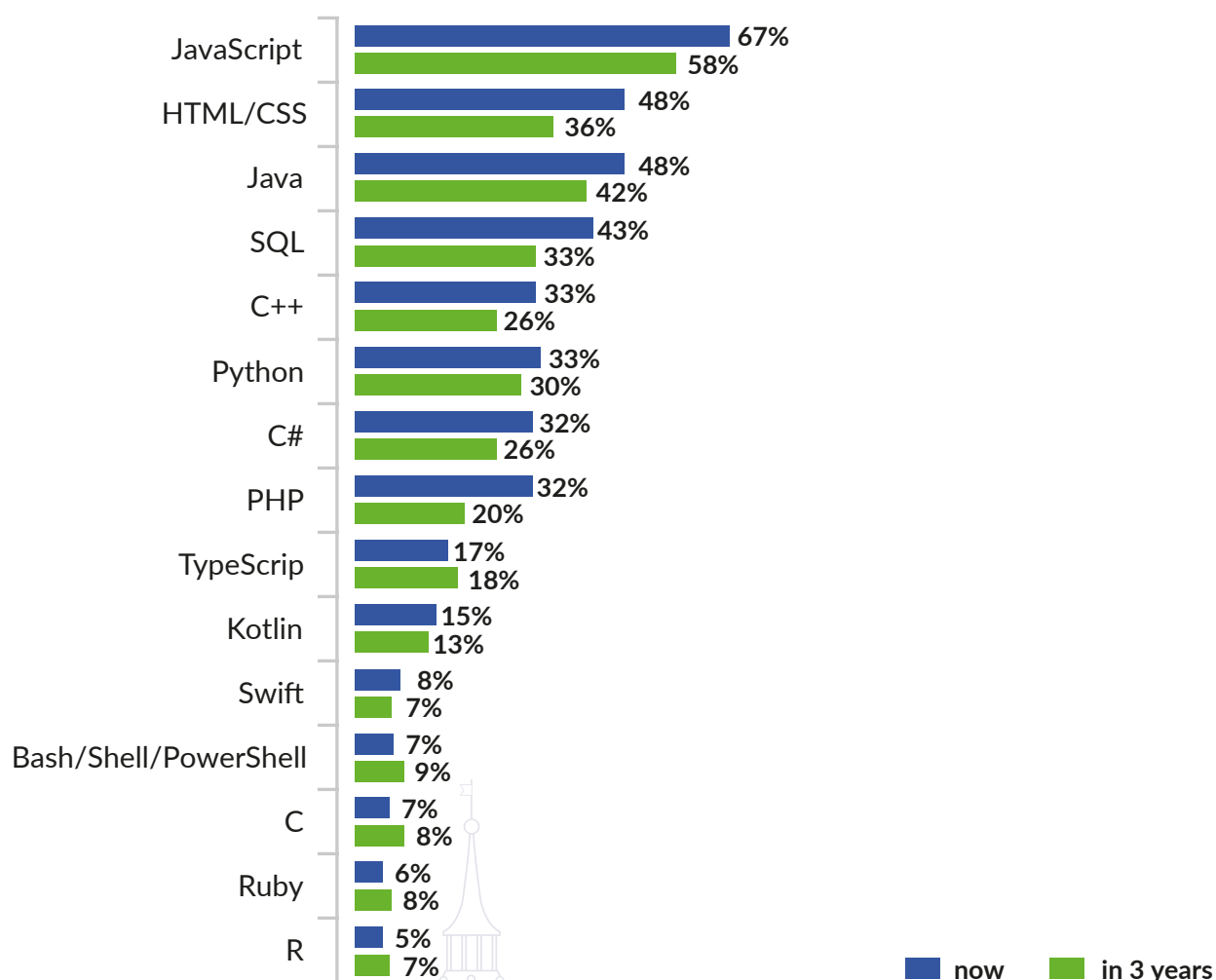
Research participants state that the body/team leasing model is running out. There is a noticeable trend in which companies are unwilling to lease teams and programmers to clients, preferring to move towards the development of scalable products and provision of comprehensive business and technology consulting services. Therefore, a change in the business profile of Wrocław companies towards scaled products (Software as a Service/SaaS), technological support (IT consulting) and niches related to innovation (Artificial Intelligence, Big Data, Internet of Things) is becoming present.

We are still planning to develop, yet we will be moving more towards the provision of services. Previously, we focused on creating new products for clients and now we have specialised in working with existing software. It is not about creating a new, but rather developing an existing product. It all moves towards the service model with a lot of consulting.

A representative of a small-sized enterprise

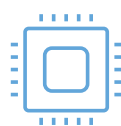
In terms of the programming languages used, the Wrocław IT market stands close to global industry trends. The most common coding technologies are JavaScript, Java, SQL, C++ and PHP. In three years, their place in the Wrocław ranking will not change, however, a decrease in their popularity in favour of other coding technologies will be noticed.

Chart 13. Programming languages used in Wroclaw – at present and in three years*



The high interest in Python is a good predictor for the local IT industry. It is a programming language mainly used in developing Artificial Intelligence and Machine Learning solutions. Its popularity confirms that many Wroclaw companies are working on the development of these leading technologies.

In the next three years, the low interest in Kotlin should deserve attention as, in connection with the falling popularity of the Swift language, may mean a decrease in providing mobile solutions on the local market. The trend will probably move towards the Progressive Web App (PWA) that stands for web applications with selected capabilities derived from native applications.



20%

of Wroclaw IT companies operate in the field of Artificial Intelligence (AI)



35%

of medium-sized companies operate in the field of IT consulting



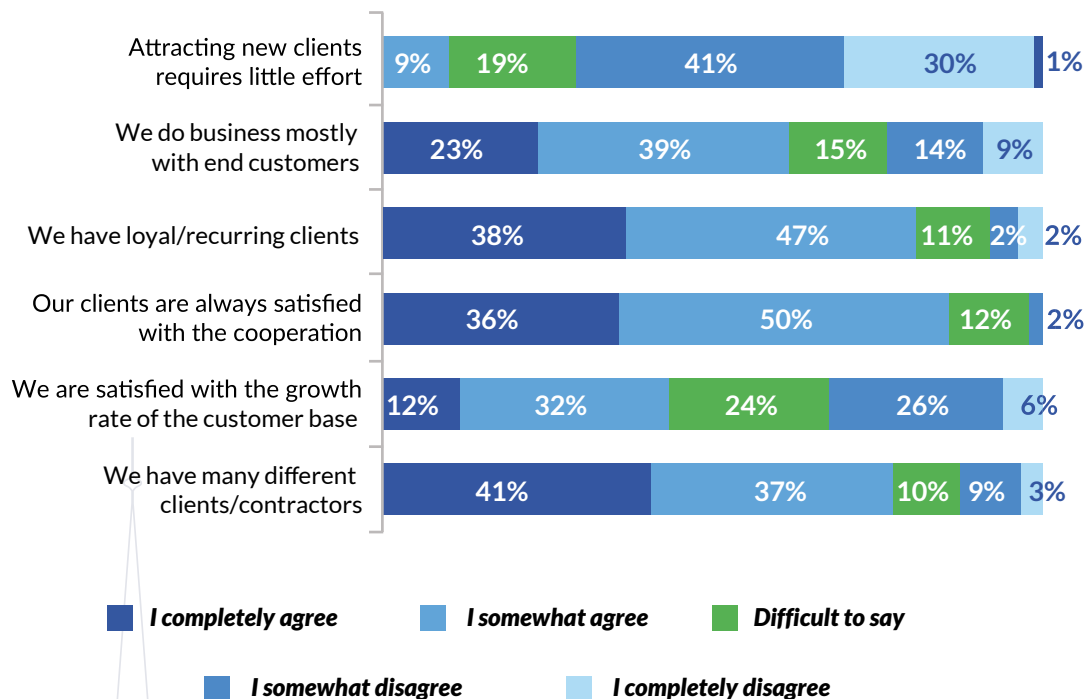
25%

of small-sized enterprises operate in the field of Research and Development (R&D) and Artificial Intelligence (AI)

Relationships with clients and contractors

Wroclaw IT companies consider their cooperation with clients positive. Although, in their opinion, it is not easy to attract new clients (70% of responses) but, once cooperation is established, it results in a long and loyal business relationship and customer satisfaction (85% and 86%, respectively). Local IT companies do business with various clients simultaneously (78%), yet building profitable and long-term relationships with business partners is of key importance. Most respondents also declare to sell their business solutions to end customers (61%).

Chart 14. Cooperation with customers in the opinion of Wroclaw IT companies



Cooperation with foreign clients is particularly treasured, not only due to the profitability resulting from higher margins, but also because of the interesting and ambitious projects they offer. The ability of a company to guarantee their employees the development of creative and complex tasks is an important element of employer branding on the local IT market.

International projects are more profitable because Polish customers are accustomed to low price rates (...) and, besides that, cooperation with a foreign client means openness to very interesting projects that are not being performed on such a scale in Poland, e.g. in the field of DNA research or building data exchange systems for international corporations in London. These are attractive projects for our employees.

A representative of a medium-sized company



94% of the BPO/SSC/ITO services market is currently abroad

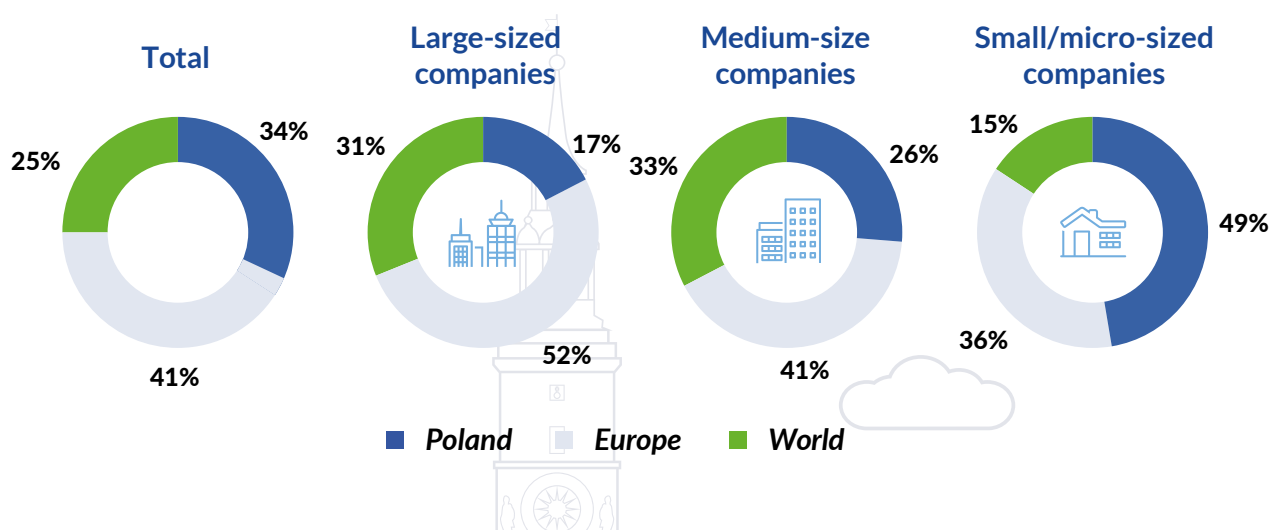


Over $\frac{2}{3}$ of startups operate mainly on the Polish market

Large international companies still consider Poland to be an employee market, as evidenced by the fact that almost all of their customers are located abroad. Shared service centres have the most global reach, as half of their clients are based outside the European continent. An interesting fact is that the majority of customers for startup technologies and solutions come from the domestic market. This might indicate the existence of development barriers, limiting the scalability of their business model and innovation to the national level, while modern market dynamics require that the international scope is reached as quickly as possible.

Polish companies constitute 34% of the clients in Wroclaw IT industry. The most significant share of customers are European (41%), but many of them are also based in other parts of the world (25%). Large IT companies are the most internationalised, with the vast majority of their business being from foreign customers (82%). Small and micro-sized enterprises are in the exact opposite situation, as nearly half of their clients come from the Polish market (49%).

Chart 15. Origin of customers in Wroclaw's IT market



85% of IT companies are satisfied with the business relationships they have achieved with current contractors.

The Wroclaw IT industry makes use of the services provided by external contractors. Their nature depends on the size of the company and, in this respect, a significant correlation is noted. Large-sized companies take advantage of contractors in building programming teams when they do not have internal experts on specific or niche technology. The reason stated for this is higher operational flexibility and, consequently, lower costs.

We currently have contracts with companies that provide us with manpower and consultants, as well as executed parts of our projects and orders. It is especially important for us when it comes to niche technologies, where we find it difficult to employ specialists or we do not want to spend time looking for specific professionals. Those contractors, who provide manpower, also help us to go through stages when we have a large increase in work and projects, and we know that there will be a decrease soon afterwards. Therefore, they help us stay flexible.

A representative of a large-sized company

Similarly, medium-sized enterprises focus on flexible supply of manpower, but often they also make use of external partners to support them in building business strategy or sales and marketing. In addition, owners of small and medium-sized companies indicate that, due to cooperation with contractors, they can gain competencies that are missing within their organisations. This is often associated with entering new, foreign markets.

We are seeking consultancy services. On an occasional basis, we also take advantage of specialists from areas that relate to procedures and organisational changes. Sometimes these are know-how professionals who help us improve business areas that do not need a full-time employee hired, but someone who can come from the outside, observe what is happening and propose possible changes, optimisations or improvements. A good example is currently related to our entering the German market.

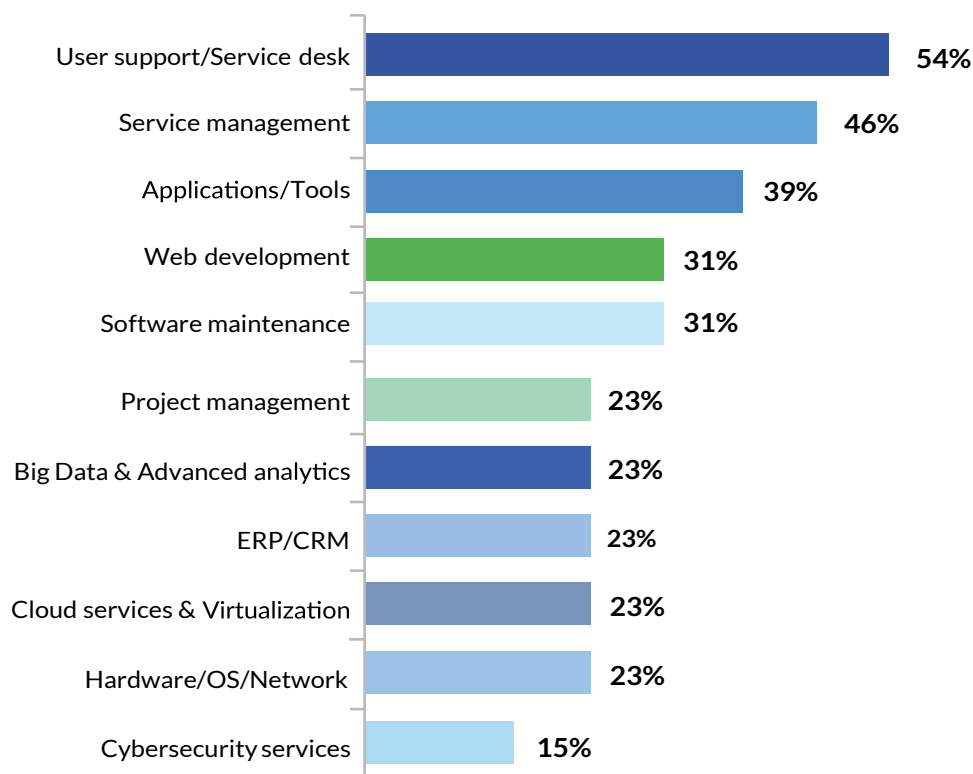
A representative of a medium-sized enterprise

Shared service centres (BPO/SSC/ITO)

Shared service centres, largely belonging to international corporations, have a firm position on the local market. Their basic activities are related to user support/service desk and service management – 58% and 46% respectively. Unlike other companies, the third most popular field in this group is the development of applications/tools (39%). At present, in addition to outsourcing services, many BPO/SSC/ITOs also invest in Research and Development projects that require the availability of highly-qualified employees.

A high share of Big Data & advanced analytics, as well as cloud services & virtualisation in shared service centre activity confirms that they implement advanced processes and solutions in Wrocław. They are also distinguished by the percentage of companies that specialise in the development of hardware/OS/network and collaboration tools, as well as cybersecurity services.

Chart 16. The most common fields of activity among shared service centres in Wrocław*



What are the industries your clients most often operate in?



46% IT



39% finance

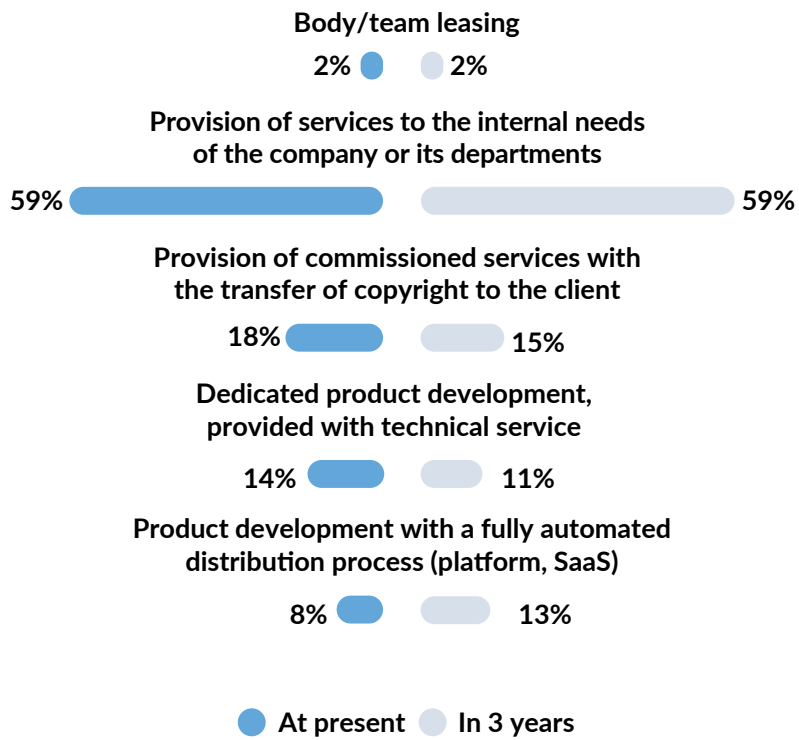


31% manufacturing

The main industries in which Wrocław BPO/SSC/ITO companies operate are IT, finance and manufacturing. Their services are mainly focused on delivering IT solutions to fulfil the internal needs of the corporation or its clients (59%). This will not change over the next few years.

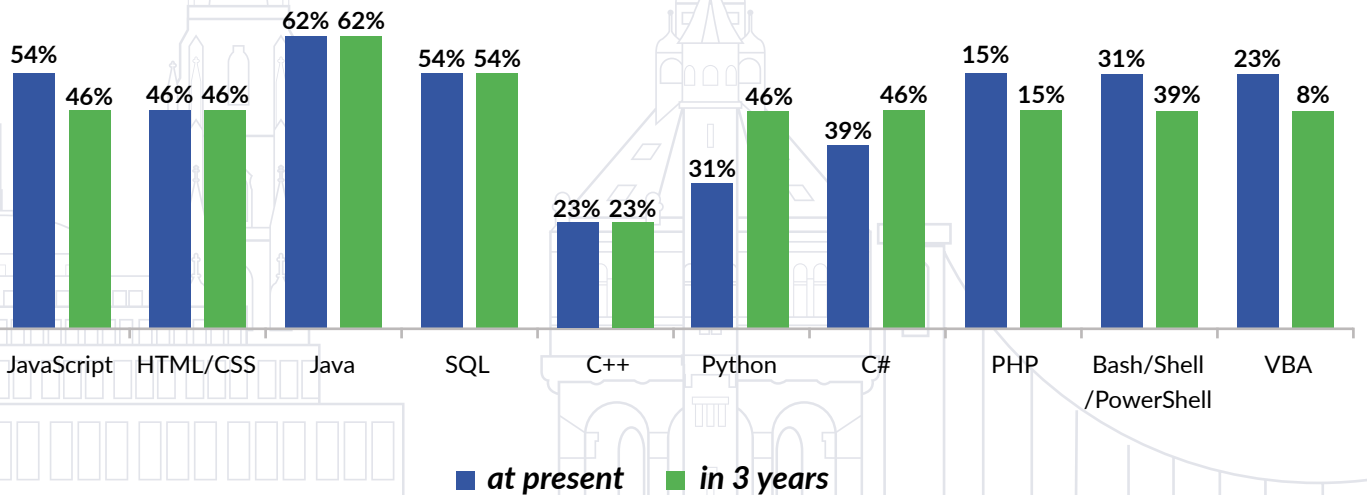
However, the respondents predict a few per cent increase in the significance of products with a fully automated distribution process via a dedicated platform or SaaS (Software as a Service) in the company's portfolio.

Chart 17. Structure of business solutions offered by shared service centres – at present and in three years



The programming languages used by shared service centres will not change over the next three years. These primarily include Java, JavaScript, SQL and HTML/CSS. Python is the only language that will increase quite considerably in popularity (by 15%).

Chart 18. Programming languages used in shared service centres – at present and in three years*



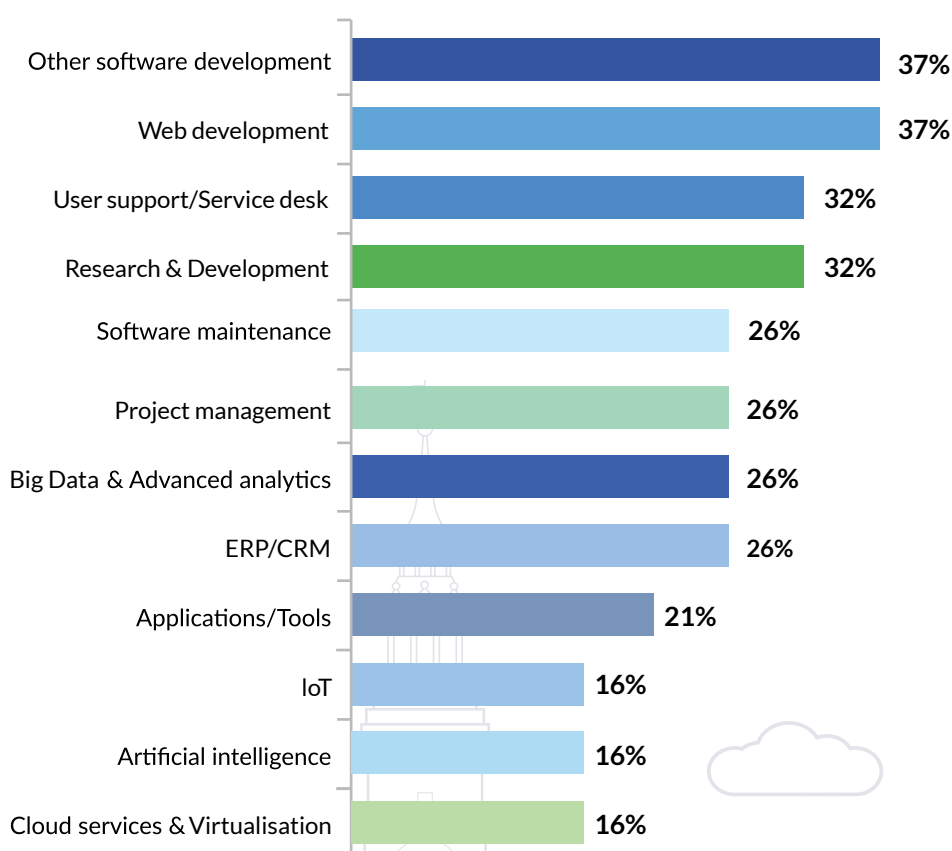
*Multiple answer question

Software producers

The basic areas of activity among software producers are other software development (including desktop applications and systems dedicated to business clients), Research and Development, web development, and user support through service desk operations.

Their high activity in the fields related to Big Data & advanced analytics, the development of ERP/CRM systems, IT applications and tools suggests that the business strategy of software producers focuses on the corporate market (B2B) rather than consumer market (B2C). Less common technologies developed in this group of companies include the Internet of Things, Artificial Intelligence and cloud solutions & virtualisation.

Chart 19. The most common fields of activity among software producers in Wrocław*



Software producers claim that the volatility of the IT market is a significant difficulty in their business operations, since current technology can become outdated, even within a period of 18 months. Therefore, many of them offer a wide scope of solutions and focus on continuous product development.

Currently, we have 30 products in Wrocław that we know and provide service for. These are most often ERP systems of various kinds, in various industries and on various markets: German, French but also global; or dedicated to specific industries. Therefore, not only we create a product, but also develop it and provide services, so in other words - we implement it.

A representative of a large-sized company

A common denominator

Echo Investment's domain is to create places where a man can find space to support them in everyday life. The workplace is one of these places. Here, big ideas become a daily list of tasks, and widely different people sit down at the same table to create something together.



- The office building is just the beginning. Although the form itself may vary, one thing is constant - to find a common denominator between what we offer and what our lessee needs. Only when all floors find their users will we be able to recognise it as our next success. At the end of the day, satisfied employees are the confirmation of a job well done.

Clients, such as Nokia Solutions and Networks, whom we met in Wrocław, have shown us how high the level of cooperation between a developer and a lessee of this magnitude can become - said **Katarzyna Kubicka**, the regional director in Echo Investment's offices department.

How to create space for the world-changing telecommunication technologies?

Step 1. The need for space

The West Gate office building was already at an advanced stage of development. There were ongoing talks with the lessees. At exactly the same time, Nokia were looking for a new place for themselves in Wrocław.

- The key condition that had to be met in order for us to decide on the choice of our new headquarters was the right location. For many years, Nokia has been operating in Wrocław. Our office at Strzegomska street was to remain unchanged. West Gate was built in a suitable place for our next office in Wrocław – recalled **Agnieszka Kowalczyk**, the project manager at Nokia Solutions and Networks.

Step 2. Welcome, adventure!

A building not yet built or completed – the second goal Nokia have set for themselves. Why? The answer was simple, so that it could be still adapted to their needs. The biggest challenge turned out to be the modern Research Laboratory.

Step 3. We did it!

- We focused on the most difficult parts. Our experience, our team of experts and our capabilities were all involved in the project. Nokia did the same. We did not get side-tracked. We knew exactly what had to be done. Our professional approach and experience helped us in finding the best solution - recalled **Katarzyna Kubicka**.

Over 2,000 sq.m. of ceiling was reinforced with carbon fiber tape. This is the first time this solution was used at such a scale. The goal has been reached – 6,000 test devices were locked in 850 telecommunication cabinets.

Step 4. This is not the end of our story

West Gate was to be the only office building finished by Echo Investment in this part of Wrocław. Life, however, writes its own stories. It did not take long for Nokia to present the developer yet another challenge. A completely custom building. Soon enough, West Link was built nearby - 14,000 sq.m of office space reserved for the development of the leader in telecommunications services. Even more jobs, another laboratory, an open space for startups and enthusiasts of new technologies, and a nursery were all included.... a tailor-made office building!

Summing up!

Experience, a professional approach and a steady course towards a common goal create a recipe for success. Echo Investment and Nokia cut the ribbon together, thus opening a new location. At present, Echo Investment is involved in the development of another project codenamed "West", at Na Ostatnim Groszu street. The first phase of West 4 Business Hub, with 15,500 sq.m of office space, will be delivered in Q3 2020.

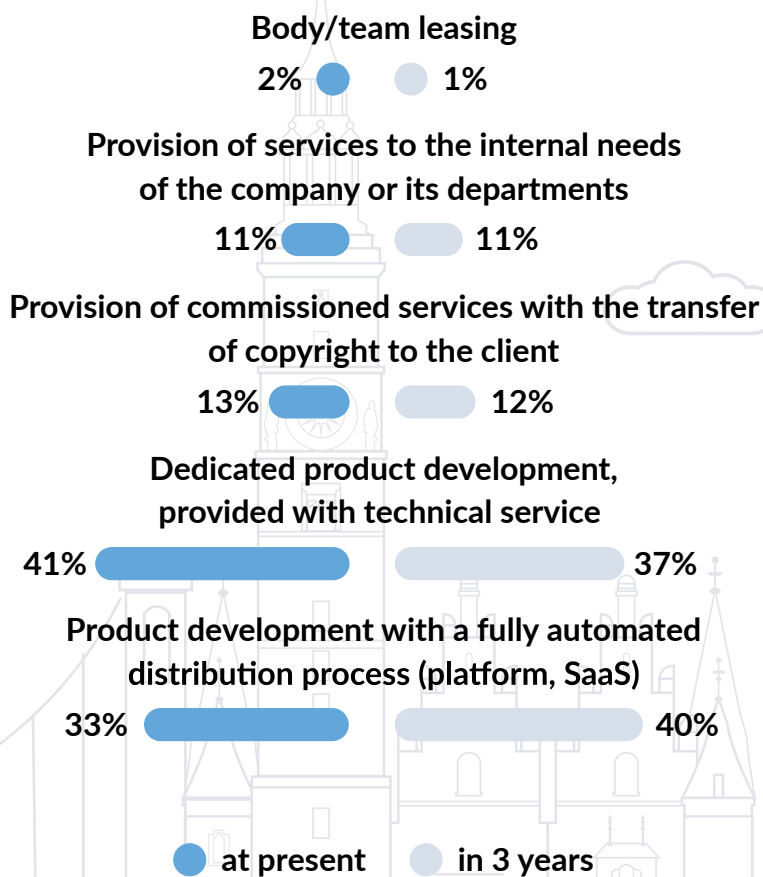
Software producers are active in the most attractive industries in terms of future technologies for economy digitisation. Therefore, to achieve a competitive advantage, they should invest in product innovation dedicated to corporate clients, and provide them with support and implementation consulting services.

What are the industries your clients most often operate in?



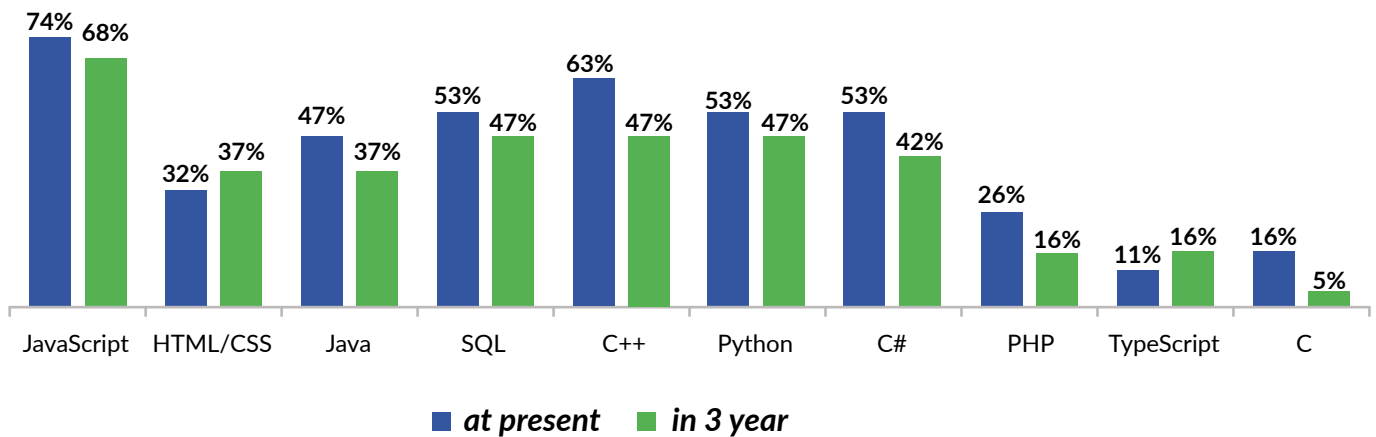
The most common solution offered by these companies is a dedicated product with specialised services. During the next three years it will change in favor of a fully automated distribution process via a platform or SaaS (Software as a Service).

Chart 20. The structure of business solutions offered by software producers – at present and in three years



The most popular programming languages used by software producers are JavaScript, C++, SQL, C# and Python. However, there is a noticeable decrease in the significance of almost all of these coding technologies in the near future, which suggests that these companies might search for new solutions and put emphasis on languages that are currently less available on the market, such as Rust, Elixir, Scala or Go.

Chart 21. The programming language used by software producers – at present and in three years*

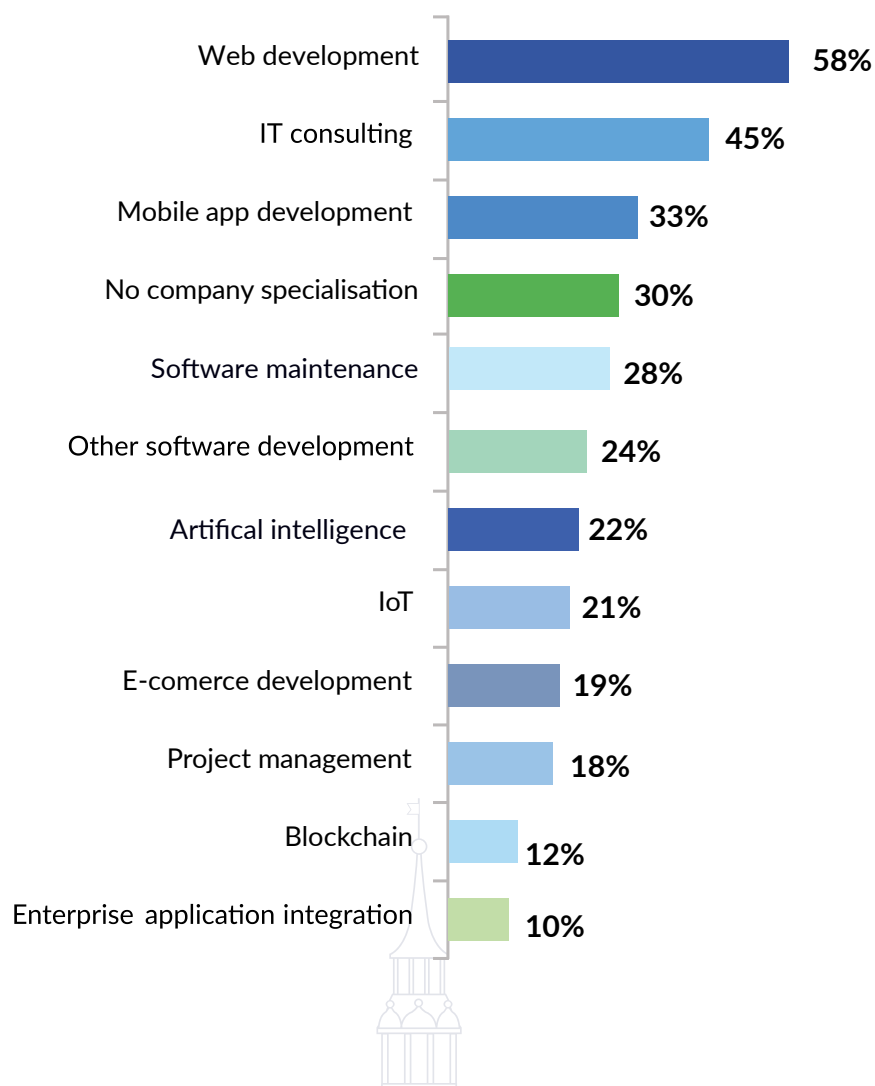


Wroclaw native companies – software house and IT consulting

Historically, Wroclaw software houses have developed thanks to providing body/team leasing services. This model was profitable, both for customers and providers, due to the attractive price-quality ratio. This allowed the local SME sector to develop in IT. The possibility to work for customers from various technology fields (med-tech, smart city, fintech, e-commerce) attracted many gifted programmers, thus enhancing the competences of the entire sector.

Most of the revenues of software houses/IT consulting companies are currently generated in web and mobile development (58% and 33% respectively), as well as in IT consulting (45%). Many respondents admitted no company specialisation (30%) or indicated other software development (24%). This proves that they tend to implement various projects, according to the preferences and needs of external customers. What is important, however, it that nearly a quarter of these enterprises work on future technologies – Artificial Intelligence (22%) and the Internet of Things (20%). Compared to other companies, they are also active in developing blockchain technology and enterprise application integration.

Chart 22. The most common fields of activity among software house/IT consulting companies in Wrocław*

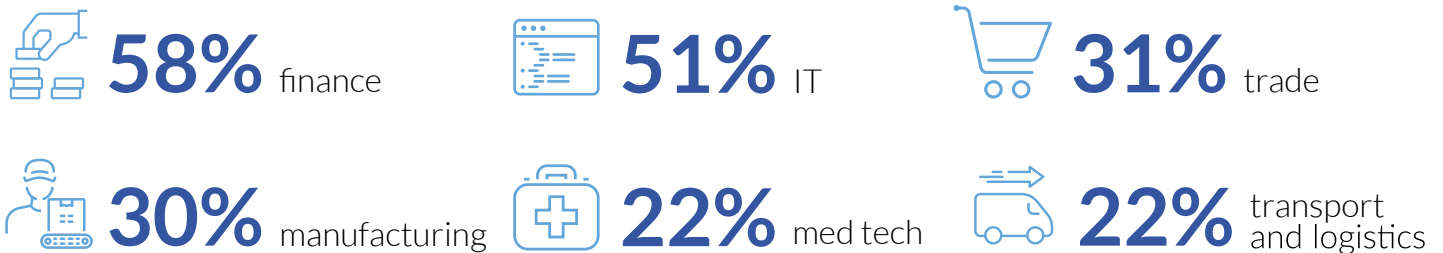


According to our Expert:

The representatives of software houses are aware that, apart from employment, market competition is an important factor influencing company development. We all provide services at an attractive price, of high quality, and delivered by committed team members, but it's not enough nowadays. Due to globalisation and an increase in wages in Poland, these activities stop being an effective strategy on which we can build long-term development. It is necessary to develop a Unique Selling Point (USP) that distinguishes the company in the eyes of our clients, something that will make us stand out globally and that will help increase increase, rather than lower, margins. Hence, there is a great interest and number of investments in AI, IoT, IT consulting and scaled products, as well as a greater focus on industries.

Grzegorz Rudno-Rudziński, Managing Partner at Unity Group

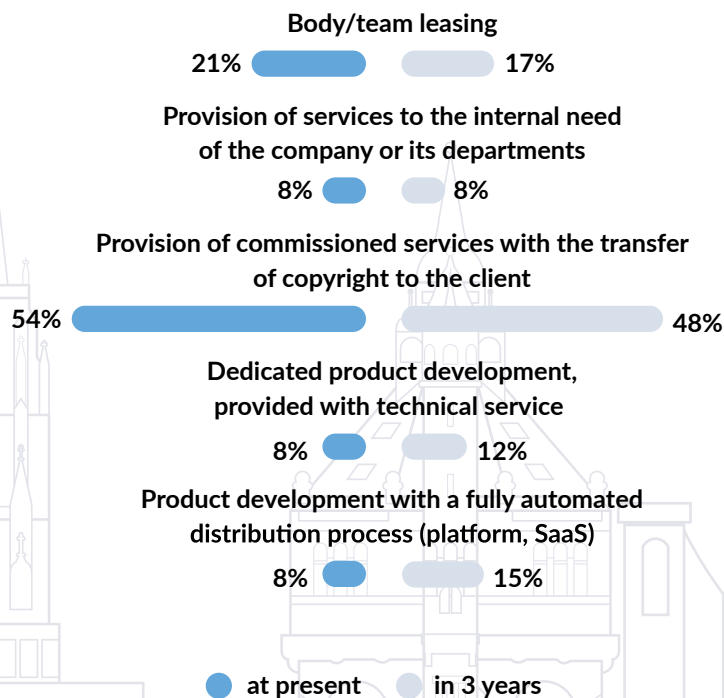
What are the industries your clients most often operate in?



Software house/IT consulting companies operate in several industries simultaneously and provide various services according to individual customer needs. The significant share of IT in their portfolio proves that they often play the role of subcontractors, probably with no access to the end-user. Some of them, however, have found market niches in sectors such as trade, manufacturing and medical services, as well as transport and logistics. By focusing on these, they achieve higher profitability and faster development than companies without a particular field of expertise.

At the same time, the significance of services based on body/team leasing is decreasing. In turn, the share of business relations based on delivering dedicated products, together with the IT service and via a fully automated distribution process (Platform, SaaS), is on the rise.

Chart 23. The structure of business solutions offered by software house/IT consulting companies – at present and in three years





Achieve **ambitious**
office ideas

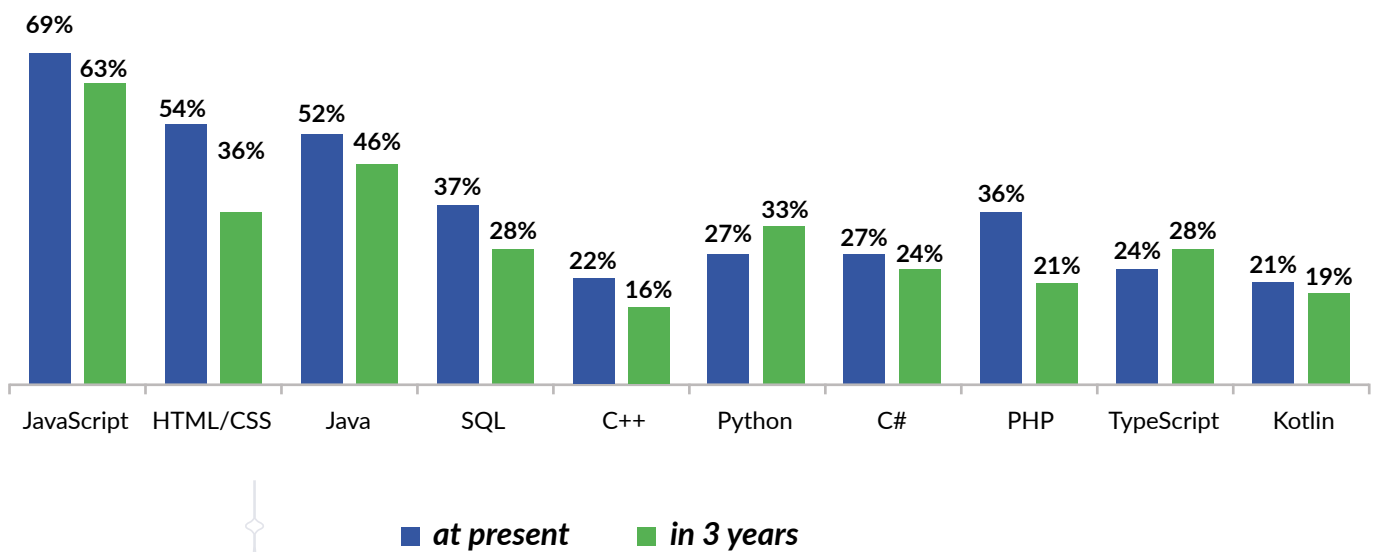
Find an ideal space and location delivering a workplace experience that engages and inspires your people



officefinder.pl

The predominant programming languages used by software house/IT consulting companies are related to the development of applications and websites: JavaScript, HTML/CSS and Java. Over the next three years, Python and TypeScript will increase in significance, which suggest that technologies such as Artificial Intelligence, as well as Single Page Apps or Progressive Web Apps, will be developed. It is worth noticing the decreases of other technologies, indicating increasing fragmentation within the IT market. This will result in the need for employing developers with the knowledge of new and often niche programming languages.

Chart 24. Programming languages used by software house/IT consulting companies – at present and in three years*



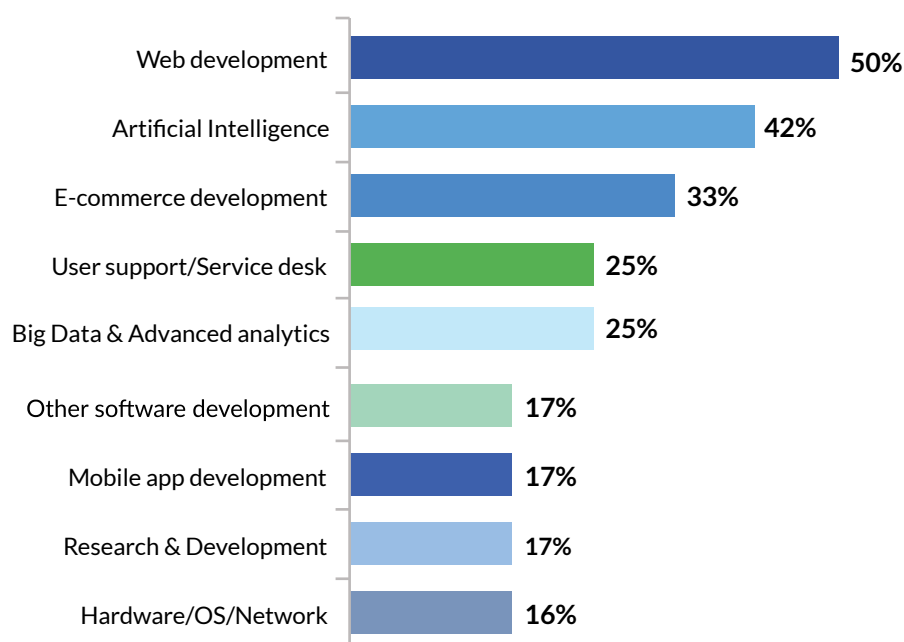
Wroclaw startups

The startup ecosystem in Wroclaw is booming and, to keep it up, emerging companies should strive to develop scalable business models in which IT plays only a supportive role, allowing for groundbreaking innovations. In the meantime, half of the surveyed startups indicate web development as the primary field of their business operations, just before Artificial Intelligence technology (42%). This may result from delivering their product through a web application or taking care of the company's financial security – until their profitability is achieved, startups generate revenue based on operations similar to a software house.

Apart from Artificial Intelligence, emerging Wroclaw enterprises develop solutions for e-commerce (33%), Big Data & advanced analytics (25%) as well as hardware/OS/network devices and systems (17%).

*Multiple answer question

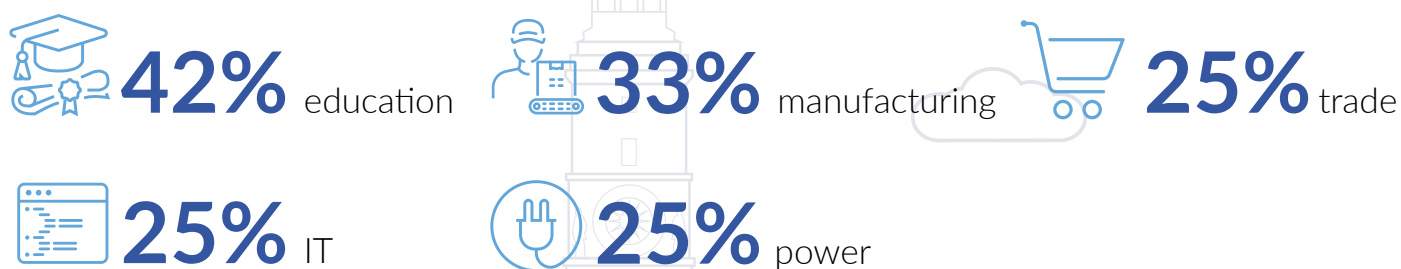
Chart 25. The most common fields of activity among Wrocław startups*



We will invest in IoT and expand this particular business field. At present, we are focused on devices and software development. We want to expand the scope of our operations towards cloud solutions, not only to connect devices to the cloud services, but we also want to provide the customer with comprehensive solutions: from a sensor to cloud application.

A representative of a small-sized enterprise

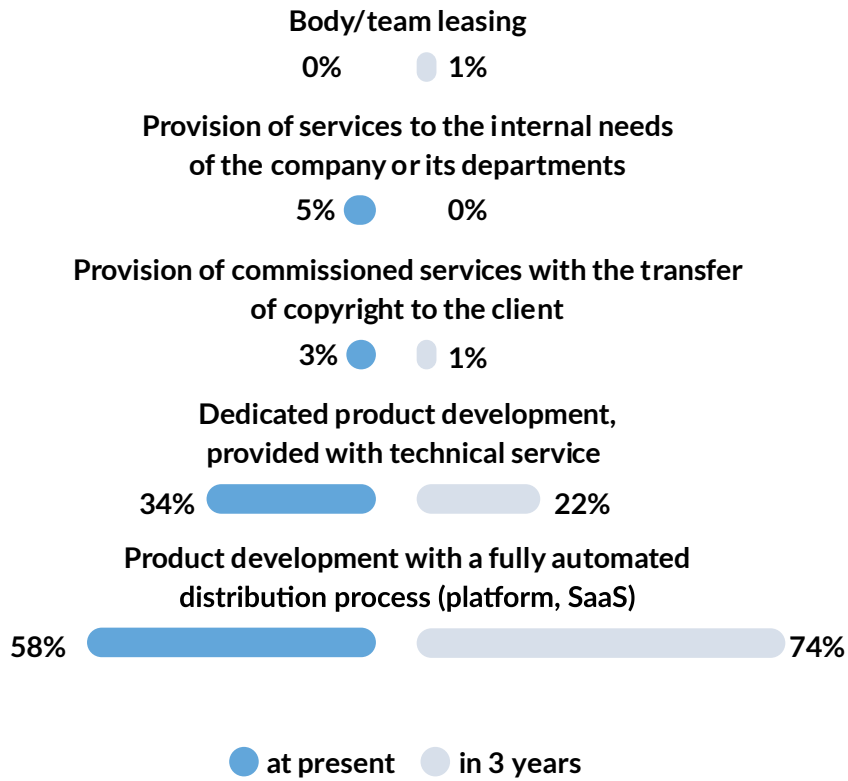
What are the industries your clients most often operate in?



The customer structure of Wrocław startups is dominated by the public sector (education and power industry), along with manufacturing and trade. Medical, as well as transport and logistics services, were the least popular industries (only 8% of indications, combined).

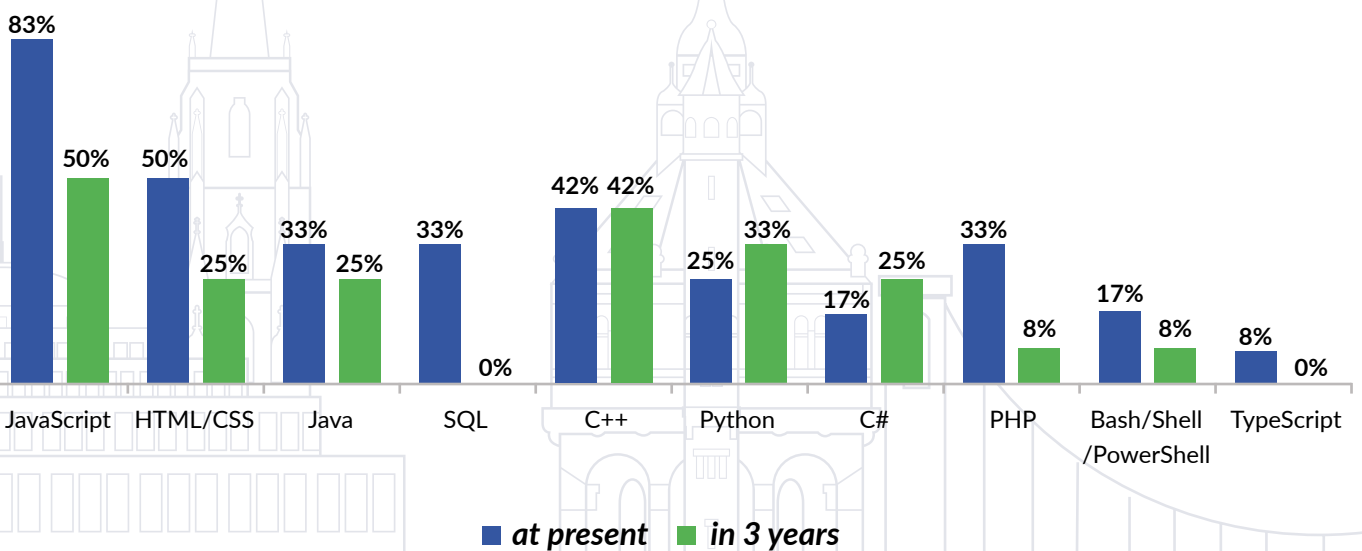
Emerging Wrocław IT companies focus primarily on innovative solutions. The provision of products with a fully automated distribution system (platform, SaaS) mainly dominates, yet its significance on the market is expected to increase from 58% to 74% in the next three years.

Chart 26. The structure of business solutions provided by startups – at present and in three years



The biggest changes in programming languages used is expected to take place among startup companies. The significance of currently dominant coding technologies, such as JavaScript, HTML/CSS, SQL and PHP, will significantly decrease.

Chart 27. Programming languages used among startup companies – at present and in three years*



*Multiple answer question

Opportunities and challenges on the Wroclaw IT market

Why Wroclaw



My company was established here



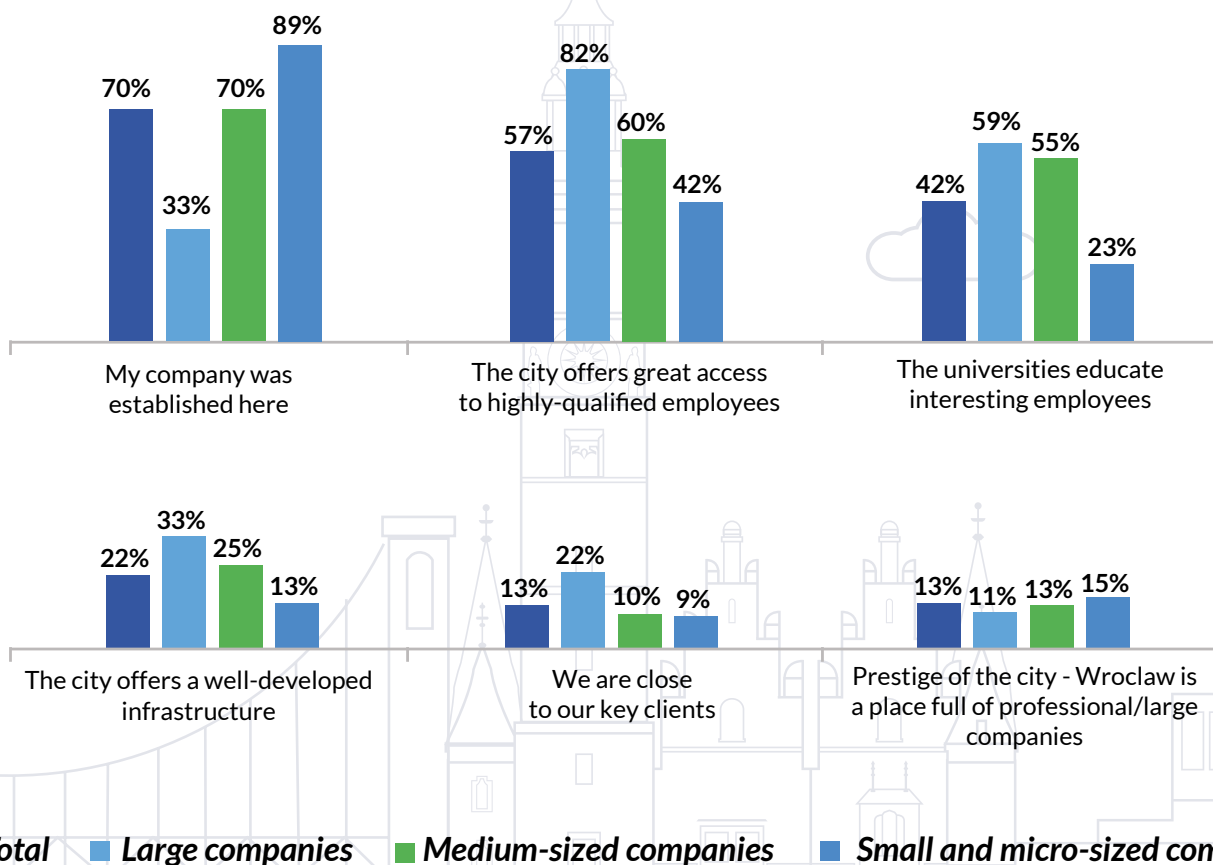
The city offers **great access to highly-qualified** employees



The universities educate **impressive work** candidates

Most of the surveyed business entities, in particular small and micro-sized enterprises, declare that they run their business in the capital of Lower Silesia since their company was established here. The exception are corporations for which access to highly-qualified workers (82%) and universities educating interesting employees (59%) are more important. Medium-sized companies also pay attention to both the labour market and academic potential of Wroclaw, although the percentage of their responses was slightly lower (60% and 55%, respectively). Other dominant indications are related to the city's facilities for investors, such as access to modern infrastructure and key clients, as well as Wroclaw's prestige as a business location.

Chart 28. Reasons for choosing Wroclaw as a place for running a business*



Wroclaw – an IT Mecca in Poland

Wroclaw is widely considered a centre of modern information technologies in Poland. Companies positively assess the city as a place to run business, not least of all in terms of the investment climate, employee skills and competencies of local business entities. They also feel like a part of the ecosystem in which healthy competition takes place. The major problem that such companies have is limited access to employees (especially if they are required to have a niche specialisation and large job experience) as well as high financial expectations of candidates.

I think that, when it comes to running an IT business, it is a very good place on a national scale due to the access to qualified employees. We have relatively good universities here, which are constantly educating and providing new people to the labour market. There are also many IT companies in Wroclaw that have acquired high competences that they are now willing to share.

A representative of a medium-sized company

The advantages of Wroclaw IT market



Size and diversity
of the local market



Recognition
in Poland and abroad



Wroclaw's
transportation
accessibility

The size and diversity of the local market are the biggest advantages of Wroclaw. The variety of companies operating in the city means that employees can switch between them, thanks to which they gain comprehensive knowledge and qualifications. The perception of international corporations by local companies has improved. In the past, the policy of attracting foreign investors, with resources and possibilities unattainable for smaller Wroclaw market players, was particularly feared. Nowadays, their representatives also recognise the advantages of the presence and development of global brands in the city (See also chapter *The characteristics of enterprises*).

The fact that we have more and more big companies, as well as more interesting players on the global market, is certainly a result of something. Before large foreign companies decide to build their R&D centre here, they first must conduct research, check how the labour market works, examine access to the infrastructure, universities, contacts, etc. This confirms that it is necessary and works well here.

A representative of a small-sized enterprise

Thanks to corporations, Wrocław has become a more recognised centre outside Poland, which has positively influenced the opportunities of establishing business relationships with foreign customers by local suppliers. Today, medium and small-sized business entities do not have any hangups, know their business value and are ready to conquer new markets. Most of them support contractors from abroad, thanks to which they achieve higher profitability of running projects and gain knowledge and experience that is then transferred into their organisational culture and business model.

International business requires a broader approach. What's interesting is that one can work with clients from various countries and make business trips. It opens horizons and, thanks to this, we can develop soft skills, learn a different culture, or a different language.

A representative of a small-sized enterprise

The transportation accessibility in Wrocław is also seen as a solid advantage and opportunity for further development. Large entrepreneurs appreciate the activity of the Wrocław's airport, which develops the network of air connections based on business need. Representatives of the SME sector, although they often contact their clients based on remote work, also emphasize the convenient location and transportation between the city and wider locations.

Employers believe that the city should invest in improving public transport, as well as in much-needed agglomeration rail infrastructure. The most convenient solution is to have an office in the city centre, where connections are the best and the most frequent.

Attracting talents and cooperation

Wrocław is a place with great potential for business development and attractive to live and work. To attract more outstanding specialists needed in the industry, these assets must be widely communicated – both domestically as well as abroad. Promotion of the region focused on the absorption of talent is considered extremely necessary, even though Wrocław is the third metropolitan area in Poland, after Warsaw and Krakow, which is distinguished by the largest influx of inhabitants⁷. Research indicates that as many as three-quarters of employees in the modern business sector do not come from Wrocław⁸, while almost half of local IT companies employ foreigners (See chapter *Employment*).

Representatives of the IT market in Wrocław also agree that there is healthy competition among them. They do not rival each other for orders or clients. They transparently run business and want to work with local contractors. They feel the competition the most while recruiting employees. The market is very receptive. The majority of companies declare a continuous increase in sales and, consequently, employment, therefore the lack of programmers is widely noticeable. Managers share a fear of further dynamic wage growth within the sector.

Business entities of smaller size find it more difficult to provide remuneration and working conditions equivalent to corporations, which is why they are trying to compete with them with the specialization of the projects they implement and a flattened and more flexible organizational structure.

⁷ Directions of migration in 2018, Local Data Bank of the Central Statistical Office

⁸ Wrocław Agglomeration Development Agency, JLL, HAYS, „Report: Mobility of employees in the business services sector in Wrocław”, p. 10, <https://invest-in-wroclaw.pl/app/uploads/2018/05/Raport-Mobilnosc-Pracownikow.pdf>

According to our Expert

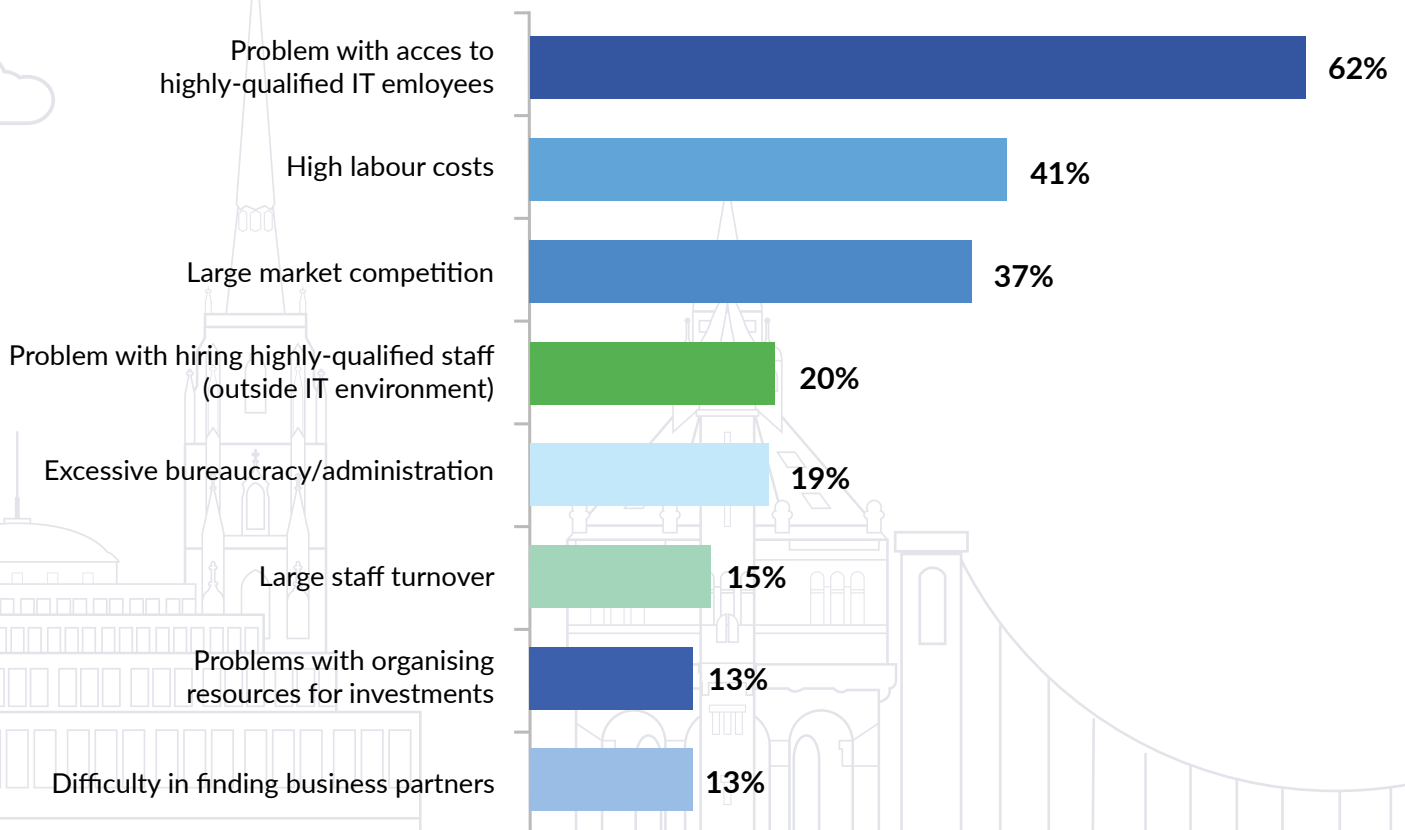
The 'snowball effect' is already occurring in Wrocław, as the presence of many IT companies is attracting other ones. They all want to take advantage of good candidates that have been well-educated by the universities and of a group of experienced experts. Convincing more employees to move to the city is quite simple. They know that there are a lot of IT companies here, so this would be a good step in their career.

Piotr Poprawski, Vice President, Head of Capgemini Software Solutions Center

Main challenges

According to the majority of respondents (62%), limited access to specialists is a challenge for the development of the IT market in Wrocław. The main barriers within the labour market include such factors as high labour costs (41%) or the problem with obtaining qualified staff outside the IT environment (20%). For many companies, growing competition, both for professionals and new business projects, is a noteworthy development barrier (37%). It is worth emphasising that only 15% of companies indicated a high staff turnover.

Chart 29. Main challenges for the IT sector development in Wrocław*

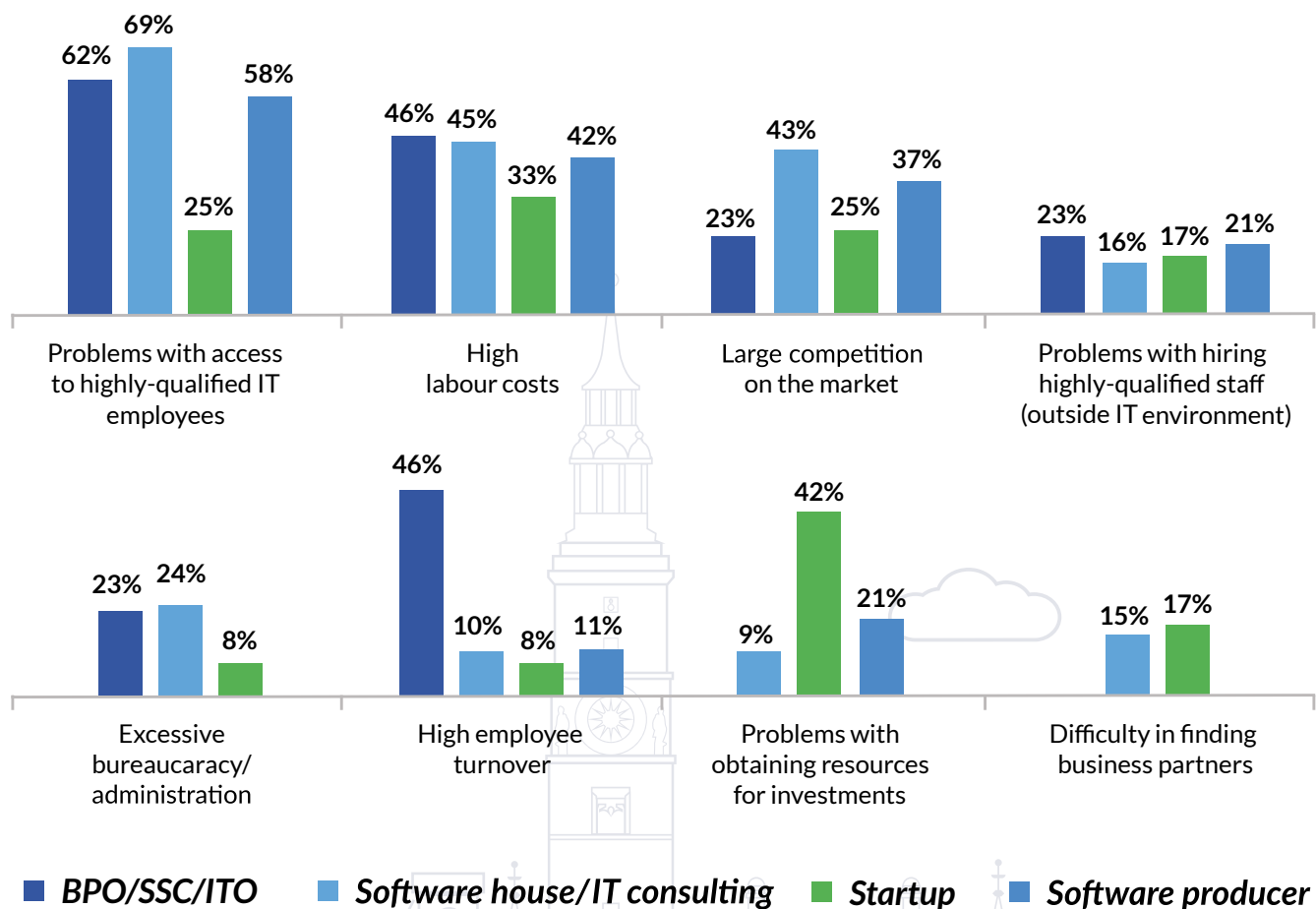


*Multiple answer question

Startups stand out from other companies in Wrocław. Only 25% of them perceive access to highly-qualified IT workers as a challenge, although, when compared to other business entities, they employ the largest percentage of architects. Similarly, few of them complain about excessive bureaucracy procedures or staff turnover (8% respectively). The most serious barrier indicated by startups is the difficulty in obtaining funds for investments (41%), which is over three times higher than all other companies in Wrocław.

In turn, BPO/SSC/ITO enterprises and software producers do not face any difficulties related to finding business partners (no indications). In addition to the limited availability of IT specialists, a major challenge for shared service centres is company staff turnover (46%) and, for software developers, it is labour costs (42%). Software house/IT consulting enterprises responded similarly, while also indicating a high level of competition (43%).

Chart 30. Main challenges for IT sector development in Wrocław - by the nature of business operations*



The challenge for the future of IT companies in Wrocław is to build a strong brand, which, thanks to its recognition, will become a magnet attracting experts not only in the local environment but also on a national or international scale. Although most respondents believe that their company brand is distinguishable in the region (53%), they are not convinced that it helps them attract new employees or be better perceived.



54% of entrepreneurs **consider their company brand distinguishable on the local market**



36% of entrepreneurs state that **new employees choose their company due to its brand**

The role of the city and business environment institutions

Managers of large companies admit that, during the recruitment process, they sometimes call the corporation in which the potential candidate is currently working to inform them about the intention to employ this person before submitting the offer. Such practices take place thanks to the active operation of business support institutions in Wrocław. For large business entities, the most important one is ABSL – the Association of Business Service Leaders – which strongly motivates its members to joint local initiatives, thus working in favour of the integration of the business environment.

Among small and medium-sized business entities, the activity and commitment of the ITCorner association, which is the largest IT cluster in the region of Lower Silesia, is valued the most.

ITCorner is certainly a prominent organisation, which has no equivalent in the national scope (...). „It helps a lot in knowledge sharing, general market understanding, as well as supporting particular business activities. It is a great institution.

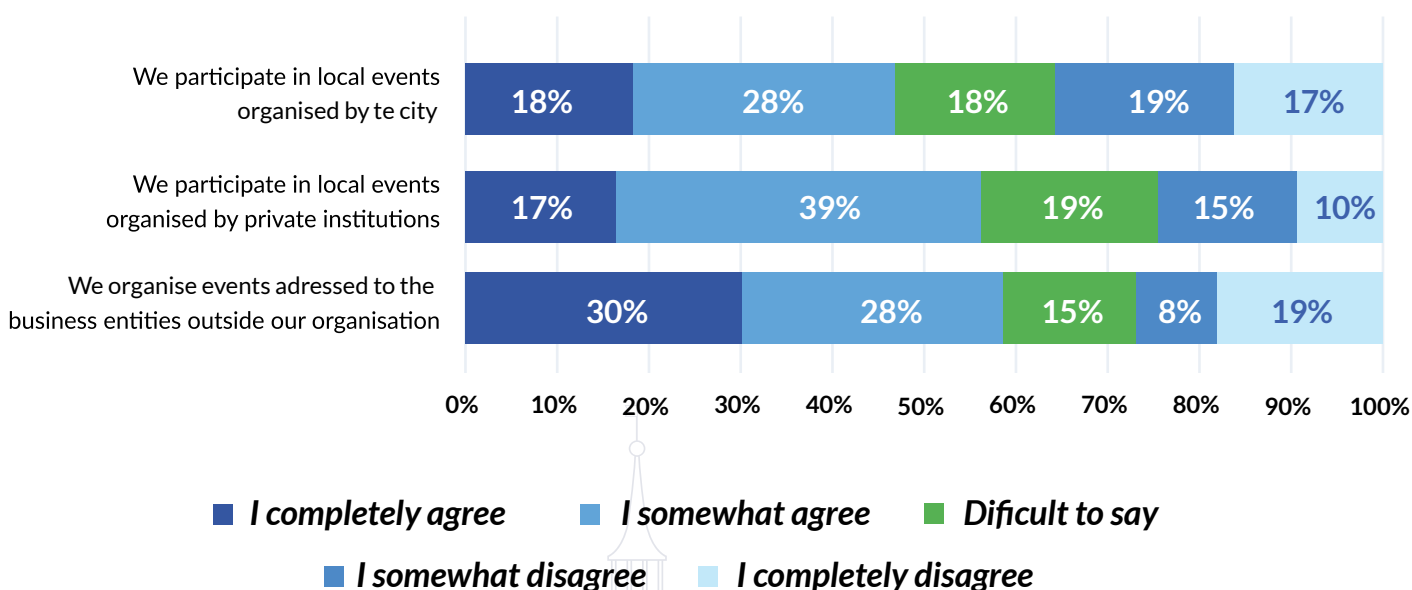
A representative of a medium-sized company

The initiatives of Wrocław authorities, represented by Wrocław Agglomeration Development Agency (ARAW), which performs tasks in the field of economic and investment promotion in the region, are also positively received. Foreign companies consider city support obvious, whereas small and medium-sized business entities expect greater involvement of local authorities, as well as a desire to be treated on an equal basis with large entities. Therefore, recent changes of the city's policy towards the development of the startup ecosystem and opening to the SME sector in the modern technology industry has been positively perceived. Wrocław companies want this direction to be followed further in the future.

Although the Wrocław Technology Park operates in the city, small and medium-sized enterprises express the need to expand the infrastructure in Wrocław by building an “innovation hub” or develop “urban co-working”. These would be managed from the bottom up and provide access to inexpensive, comfortable office space, as well as facilitate the transfer of knowledge among local companies operating in the innovation sector.

Local companies willingly participate in events oriented in the business sector and aimed at establishing business relationships and sharing experiences. 46% of respondents declare their participation in initiatives organised by the city, while over half attend events organised by private institutions. As many as 58% of respondents independently organise events addressed to the IT environment.

Chart 31. Participation in the ecosystem



Business-academia cooperation



42% of companies **cooperate with universities in Wrocław**; every third of them to a large extent



25% of companies **do not cooperate** with any university in Wrocław

Wrocław IT market and universities educating future employees constitute a system of connected vessels. Currently, less than half of the respondents declare cooperation with universities, and the dynamic cooperation of the business with the academic community is indispensable for the further development of the industry in the city.

The quality and potential of universities in Wrocław are perceived as one of the strongest advantages of the local ecosystem. For most large and medium-sized companies, the fact that universities educate attractive employees was one of the main reasons for starting their business in Wrocław (see Chart 28).

Business representatives positively assess the basic professional skills and command of foreign languages among graduates. This transfers into young people finding themselves easily in an international environment and cooperating effectively with foreign customers. Such graduates also have thorough theoretical knowledge and well-developed hard competencies, but their skills in the so-called non-technical fields, related to business analysis, teamwork, project management or customer contact, requires further training already at the workplace. It looks similar when it comes to education in the technologies, namely Machine Learning Artificial Intelligence or data management.

Currently, there is a trend at Wrocław University of Technology that a lot of people start their career in the third year of their studies, so they gain experience during their university period. Such graduate often has 2-3 years of experience, so they acquire both soft skills and hard competences. I can't identify a single, underdeveloped area of competence, although I would rather lean towards soft skills.

A representative of a small-sized enterprise

Due to the activity of enterprises, the competencies of students and graduates are expanding. In cooperation with the university, employers are involved in the education process by conducting dedicated classes and courses, guiding students regarding their theses or participating in scientific conferences. A common practice is providing a university with a free license for software produced or developed in Wrocław or providing support to scientific associations in developing projects related to day-to-day activities of local companies. Such cooperation is also developing on research and development ground – it is about using the scientists' expertise in solving technological problems of businesses.

At present, distrust associated with the fear of potential loss of academic staff in favour of enterprises stands on the way to cooperation between universities and business. Another difficulty is the long decision-making process of university authorities and their slow reactions to changes in the field of technologies used within the IT market.

In Wrocław, the “Mozart” program has been operating since 2012, which creates the opportunity to initiate cooperation in the business-academia field. It involves the city to co-finance the employment of a chosen scientist in a company to implement an annual research project. Experience shows that, after this period, cooperation between the entrepreneur and the university employee can be continued and further developed.

A very nice example is when we came across a man who was, first of all, a great scientist. He is very committed to making science have a practical aspect. We've been cooperating closely since then, conducting classes at the University and implementing internships organized together with the University every year.

A representative of a medium-sized enterprise

Entrepreneurs also address their offer directly to students through participating in academic job fairs, offering paid internships, organising trainings in leading technologies. As a result, many of them subsequently employ these young people in their companies.

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Directions for developing Wrocław's IT market

Innovativeness is the key to the growth of Wrocław's IT industry. Raising its level will allow companies to increase revenues, acquire new clients and maintain a strong market position.

What can decide about the strong position of companies on the market in the future? Innovation. In Poland, innovation, because we will never be inexpensive again. It is over.

A representative of a large enterprise

Innovation will also enable IT business entities to reach for greatest talents. Not only from Wrocław, but also other parts of Europe or even the world. Nowadays, the bargaining chip in the rivalry for the best professionals is not only high pay rates but, above all, interesting, authorial projects that challenge the programmer, that change the lives of many people.

According to our Expert

In the future, a good organisation of the company, high competencies of its employees and high quality of offered solutions will be the key points in determining a strong position on the IT market. IT companies will have to be more holistic in their approach to business, be ready for change and create a high value-added incentive for customers from various branches, e.g. industrial or automotive.

Piotr Krzysztofik, President of the Board at GlobalLogic Polska

Innovativeness in the opinion of Wrocław IT companies



An innovative way to solve problems



Creating groundbreaking technological solutions



Building a unique organisational culture

Dimensions of innovativeness

Currently, many local companies operate in a service or service-product model, which means that they must be particularly effective in recognizing customer needs and innovatively solving their problems with the use of advanced technologies.

It seems to me that the maturity of the IT service market requires not only hard but also soft skills. The better we are connected, the more we understand the customer's real needs, (...) and the better we can provide accurate services. We will be very effective, I think, if the whole industry goes in this direction. And innovation? If we don't want to lag and provide primitive services, then we must engage in the latest technologies.

A representative of a medium-sized company

Representatives of large and medium-sized companies are aware that the future requires a broader perspective, an understanding of the customer's business and greater flexibility. Small-sized enterprises see their chances in specialisation and building niche competencies. Most respondents point out that customers already expect from them not only to provide a programming service but also to provide them with technological support and consulting. In the future, this requirement will be even more popular.

Customers want an industry expert, technology expert and/or project management expert who will quickly understand their problems and (with the use of the latest technology) will be able to guarantee that what we implement today will be still valid in 10 years.

A representative of a large enterprise

Within the next few years, IT companies will have to remain competitive in price. They will operate under greater time pressure, due to the dynamically changing needs of their customers and the use of the latest technologies (Artificial Intelligence, Machine Learning, advanced data analysis or cloud systems). It is noticeable that local enterprises are already investing in raising competencies in this field, especially when it comes to providing solutions and management in cloud services.

Everything we create needs to be delivered fast. The times when we were implementing projects in the time-span of two years are gone now. Today, the customer requires it to take three months - maximum six since, after that, it does not make sense anymore.

A representative of a large enterprise

A great number of managers connect the innovativeness of their business to the level of R&D spending. It is well stated that creating groundbreaking solutions requires investment, patience and openness to the risk of failure. It is important to remember that, in case of potential failure, the overall company condition should not be at stake. In turn, success could scale up the business and distinguish it on a highly competitive international market.

An innovative organisational culture is extremely important as well. This is achieved by working in agile methodologies, extending team autonomy and, above all, opening up towards ideas coming from employees. Companies, regardless of their size, want to attract active and creative people to whom they should give a higher value than just an attractive salary. Ensuring proper freedom of action reduces staff turnover and allows for better use of the existing potential within the organisation. It is very important in the reality of competition for professionals.

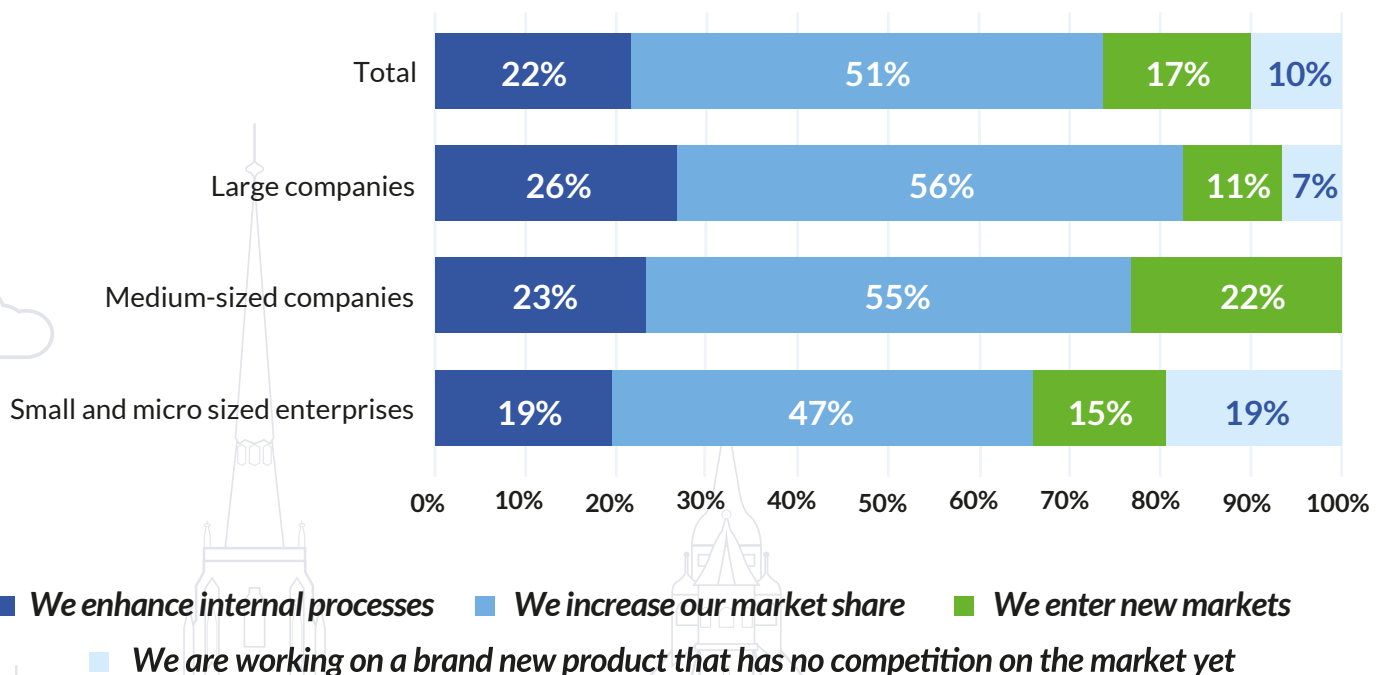
Organisational culture certainly allows you to create a nice team and stand out among other employers. The truth is that the majority of companies in Wrocław have done a great job over the past few years and have a good organisational culture. Everyone in the IT market is working hard to ensure that their work and company culture is at a high level.

A representative of a small-sized enterprise

Strategies and plans for future

Most Wrocław IT companies build their development strategy on expansion and sales growth (52%). The most active are medium-sized enterprises, of which almost every fourth plan to conquer new markets. On the other hand, it is the least innovative group since none of its representatives work on new, groundbreaking products. This situation is balanced among small and micro-sized business entities, which not only plan to expand into new markets (15%) but also work on innovative solutions that are ahead of the competition (19%).

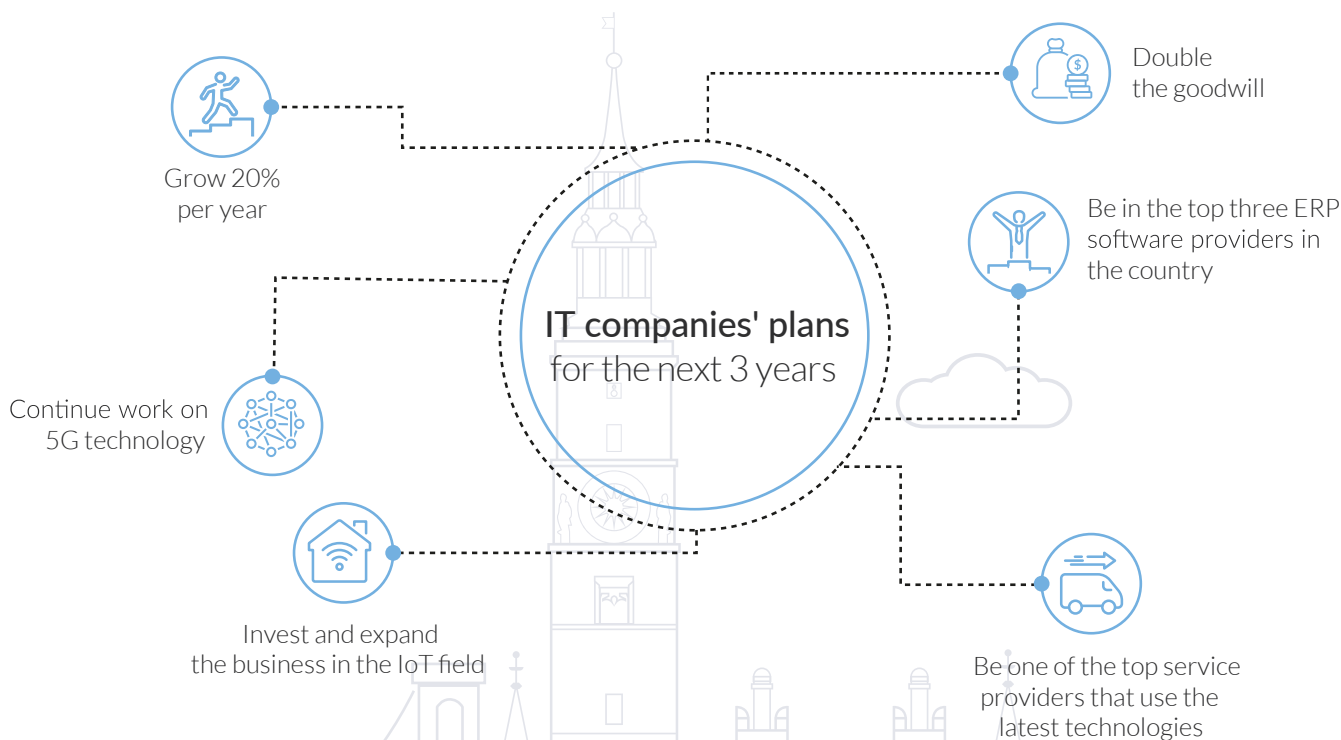
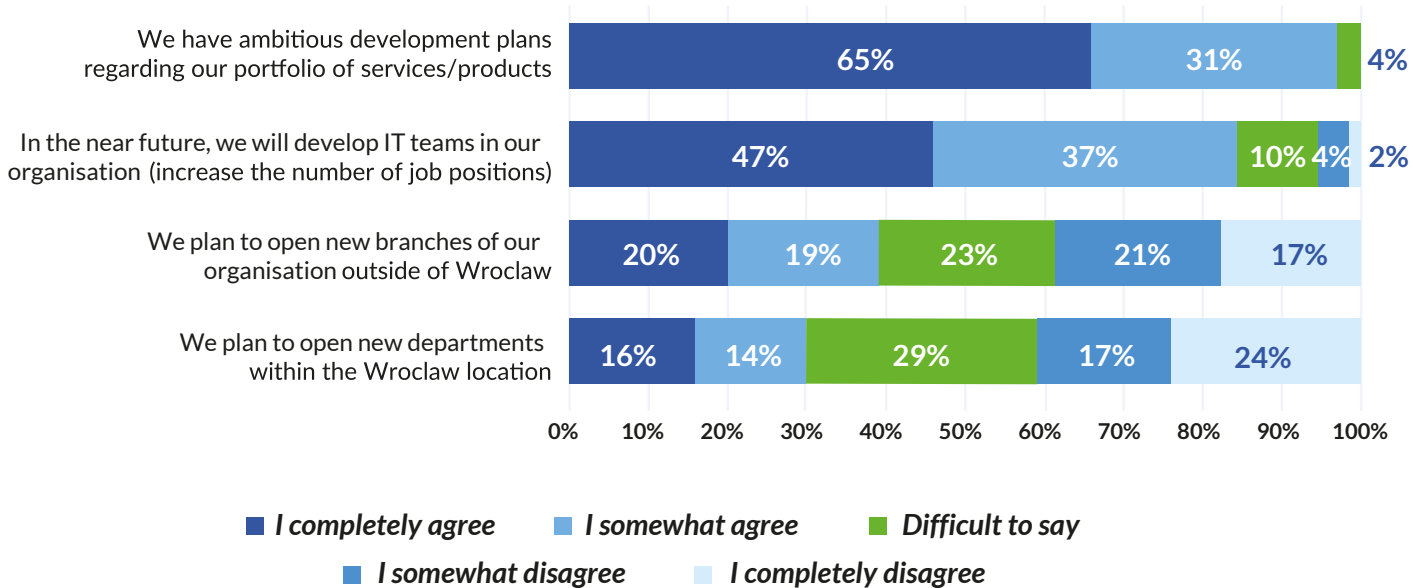
Chart 32. Development strategies of Wrocław IT companies



The research shows that Wrocław's IT environment is not homogeneous, but is highly diversified. There is no specific direction that the industry follows. Certainly, higher specialisation associated with the development of a product directly delivered to the customer would allow consolidation and better continuity of the business being run here.

Nevertheless, IT companies are looking boldly into the future. Nearly all respondents (95%) have ambitious development plans regarding the portfolio of solutions they offer. At the same time, the vast majority of them (84%) intend to increase employment and develop teams within their companies. For some, this would involve an investment due to the opening of new branches both in and outside Wrocław.

Chart 33. Companies' plans for the future



Investment financing

The financial situation of an organisation is the basis for achieving the established goals. Over 80% of IT companies in Wrocław define their situation as stable.



89% of companies state that their financial situation is stable



Almost a half of IT companies are fully convinced of it

The overwhelming majority of companies declare that their operations are financed primarily with their own resources (95%). Therefore, startups stand out from the rest, as they often use the support of a strategic investor. In this group of business entities, which develop innovative products and enter new markets, obtaining scientific grants is a much more popular form of financing operations than in other organisations (17% vs 8%).

Sources of investment financing by Wrocław IT companies



95% of companies finance their own resources



42% of startups finance their investments with the funds obtained from strategic investors



17% of startups use scientific grants



Looking into the future

The Wrocław IT market does not only grow every year but it also becomes more and more mature. Companies implement projects with a constantly increasing complexity, often including innovative technologies and solutions. This is not surprising, however, since the environment of local companies has changed radically over recent years. The dynamically developing global competition imposes a faster pace of change and immediate adaptation to customers' ever higher expectations.

A few years ago, foreign customers cooperated with Wrocław companies mostly due to the low cost of services. Thanks to this, local businesses could quickly scale up their activities, expand their customer bases and implement a larger number of projects. Nonetheless, the perception of Wrocław as a "cheap and good" location is no longer used. While nobody doubts the quality of services and products delivered by local IT companies, the profitable price difference has become blurred when compared to the offers from Western European companies⁹. Therefore, in order to continue the dynamic growth, entrepreneurs from the IT sector should focus on developing new business strategies, including the development of modern business competencies, applying modern approaches towards sales and marketing, and providing comprehensive customer service. Strengthening cooperation within the IT services sector and the local ecosystem will also be important for building a significant position in the global market.

Evolution of business model



Building
global business
competencies



Modern approach
towards **the sales**
and marketing



Comprehensive
customer service



Strengthen cooperation
with other IT companies
and local ecosystem

⁹ Source: In-depth interviews carried out within report; salary reports Antal and Sedlak&Sedlak
<http://www.qbusiness.pl/uploads/Raporty/antalplace12019.pdf>
<https://wynagrodzenia.pl/raport-placowy/raport-placowy-sedlak-amp-sedlak-dla-branzy-it-2019>

Technological development, which eliminates communication barriers, and ever faster and better-organised transport have provided companies with the opportunity to effectively cooperate with clients and contractors from other continents from the very first day of their activity. They can now offer their products worldwide, the largest players on the global market included. Moreover, with access to the global talent pool, they can hire employees from abroad, include remote work options. There are many examples of thriving companies which build successful teams of specialists scattered around the world. At the same time, the global scale and struggle for the international market (customers and employees) will also mean international competition and exposure to worldwide trends. As a consequence, the awareness of these new conditions and their skilful application within business operational activities become an essential element of the strategy and business model for every company from the IT sector.

Evolution – if not revolution – can also be expected in the field of sales. Nowadays, the expected time to close a contract is much shorter and interpersonal contact with the client is replaced by a relationship based solely on digital channels (e.g. e-mail marketing, content marketing, social media, etc.). The offer must be as much personalised as possible, and the payment ought to be possible without having to interact with the sales representative. Ventures which neglect to equip their sales department with the above skills may face stagnation and slowdown in acquiring new customers, or even the loss of existing ones, in favour of the competition.

Companies may already observe the transition from the traditional approach to customer support to focus more deeply on the full “Customer Journey”, which covers all channels of interaction with the product or service, both standard and digital. Furthermore, the approach towards data analysis based on static reports is being replaced by advanced on-demand analytics of the entire Customer Lifecycle giving immediate insights into how to acquire and retain the client. Such broadly developed real-time analytics across the entire organisation ensures the optimal and almost immediate selection of appropriate digital channels for customer support, providing one of the greatest benefits for any company, which focuses its strategic business model on international sales and cooperation.

What will affect the competitive advantage?



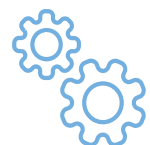
High **technical** competencies



Knowledge **of trends**



Innovative **approach**



Effective implementations **in client's industry**

Nowadays, the IT sector customers perceive the role of their contractors in a much more holistic way. They are focused on long-term cooperation and are primarily seeking a technological partner able to offer a business solution that would be efficient and well-adapted to market conditions. Therefore, it seems natural that IT companies will gain a competitive advantage only if they skilfully combine high technical competencies and practical knowledge of current trends with an innovative approach towards developing of a product or service and their effective implementation in the customer's industry. These organisations would have the chance to supersede the role of a contractor and become a technology advisor or even a strategic business partner to their clients.

The results of the research discussed in this report clearly show that a large number of companies already follow the latest trends. An interesting and promising fact is that almost 45% of Wroclaw software houses already include IT consulting services as part of their offering. This means they consciously decide to go beyond and above on-demand software development. Among small and micro-sized companies, almost a quarter of employees deal with IT consulting services. Additionally, over 80% of medium and 50% of small companies indicate the combination of IT technical competence with economic/business knowledge as the most desirable set of skills for future employees. This forward view proves the importance of the ability to properly recognise and identify client demands in the context of their business, which certainly requires cross functional skills.



45%

of Wroclaw software houses
offer consulting



25%

of employees from small and
micro-sized enterprises **deal**
with IT consulting services

Collaboration with local institutions, universities and within the IT sector itself will also play a crucial role for the further development and specialisation of Wroclaw's IT industry. Through active cooperation within academic, business and metropolitan ecosystem, the local IT sector will be able to maximise the benefits from the solid fundamentals worked out so far, such as qualified and experienced staff, infrastructure and, most of all, an approach which considers technology to be a strategic area of contemporary economies.

The role of large and small companies in shaping the local IT market

Large companies have played an important role in the development of the IT services market in Wroclaw for the past 15-20 years. Their activities and investments significantly contributed to the dynamic development of the industry. For example, the growing demand for highly qualified employees enabled universities to open many degrees related to IT, which educate future specialists in a variety of IT fields. At the same time, the implementation and deployment of projects for foreign clients and the need to maintain close contact with them contributed to connecting Wroclaw with the largest air hubs in Europe. In order to continue their positive influence on the local IT market's development and contribute to building Wroclaw's strong recognition as a global IT hub, large IT companies should take the role of expert knowledge incubators and innovation leaders – both on the technical and business sides.

It is surely achievable considering the capital, wide customer base, extensive network of business partners and available suppliers, as well as relatively easy access to global talents these companies have. It will definitely be a success to see Wrocław considered the very first location to implement strategic projects by senior leadership in the majority of large IT companies that have opened offices here.

Therefore, large companies can consider intensifying the number of activities aimed at building a well-educated base of experts, capable to combine the latest technology trends with business competencies and industry knowledge. Such combination of skills within teams will enable the transformation of these companies' relationships with their customers from strictly executive towards partner-like. At the same time, the increasing level of trust between clients and IT companies will enable the latter to convert into valuable business advisors. Thanks to this, they will be able to proactively provide their clients with perspectives on new development directions and the implementation of strategic and innovative projects.

Wrocław is also one of the most dynamically developing cities in terms of the number of new IT companies within the SME sector. The Wrocław Agglomeration Development Agency estimates that there are over 200 startups in the city¹⁰. According to Startup Poland, the city was the second startup centre in the country, after Warsaw, in 2017 and 2018¹¹. Local startups mainly specialise in the e-commerce, e-health, edutech and software house sectors. Year by year, many of them are at the forefront of international ranking reports, such as the Deloitte Technology Fast 50 Central Europe¹².

Specialisations of Wrocław start-ups



e-commerce



e-health



edutech



software engineering
(software house)

To continue the growth over the coming years, IT companies in the SME sector should focus on developing new skills (e.g. Customer Success), adapting and optimising current and new digital support, as well as sales channels, along with creating and applying advanced analytics. Lastly, the operational agility of small and medium enterprises should not be underestimated. The swift pace of decision-making process and relatively low operating costs significantly reduce the time needed to verify market hypotheses on innovative products and services, as well as their profitability. This also contributes to the fact that, more and more often, SMEs are able to provide business solutions which are more favourable to the client than proposals presented by large and well-established IT companies.

¹⁰ Wrocław Agglomeration Development Agency, Wrocław.Startupyour life, p.5.,

https://www.wroclaw.pl/startupy/files/news/8873/Wroclaw_Startup_online_2018.pdf

¹¹ Startup Poland: www.home.startuppoland.org

¹² Deloitte, Deloitte Technology Fast 50 Central Europe 2018,

<https://www2.deloitte.com/content/dam/Deloitte/ce/Documents/about-deloitte/ce-technology-fast-50-2018-report.pdf>

The above mentioned trends will influence business models of many small and medium enterprises. A simple model based on offering only technical competences, either through hiring programmers (Body Leasing) or entire teams, will be replaced by the comprehensive product development service (Product Responsibility), or even by the most complex form of service integration, Product Partnership, which implies joint business responsibility.



Final quality



Final business productivity



Finding a global niche

In terms of required skill sets, this leads to an interdisciplinary education and transition from strictly engineering or process proficiency to product and industry expertise. Awareness of the reasoning and motivation behind client requirements, in tune with the ability to identify opportunities on their market, will become one of the most valued competences. Taking into account cooperation and contracting models, it will enable the progression from consulting and T&M (time and materials) contracts, which assume only technical risk on the supplier side, to purely service contracts (SLA/KPI based/FixedPrice) or even to risk and revenue sharing partnerships. In the latter model, the supplier shares the business risk of creating a new business solution, which not only needs to be fully operational, but also best suited to the given market, customer and their needs. Instead of service efficiency and low costs, the distinguishing factors will be the final quality and ultimate business productivity. The majority of companies have already mastered many of the above-mentioned elements, yet the key to success lies in their skilful combination into a coherent strategy while finding a relatively narrow global niche.

Close cooperation with universities

The capital of Lower Silesia is the 'first choice' study location for up to 61% of surveyed people. For comparison, Warsaw was indicated by 36% of respondents, and Krakow by 29%. It can be stated, therefore, that Wroclaw has a solid image as a student-friendly city, which attracts thousands of ambitious young people¹³ every year. Furthermore, although the statistical data on the number of students and graduates from IT field places Wroclaw third place in Poland (after Warsaw and Krakow)¹⁴, the local sector is fully convinced of its strength and potential and refers to it as a hub, i.e. the most developed IT centre in the region.

¹³ Wroclaw Agglomeration Development Agency „The image of Wroclaw as an academic city”
<https://www.wroclaw.pl/wroclaw-miasto-przyjazne-studentom>

¹⁴ Central Statistical Office, Local Data (Number of students and graduates)



Adapting teaching content
to the business needs



Supporting scientific
associations and B+R initiatives



Developing students'
soft skills



Diverse
university offer



Modern approach
to entrepreneurship

Nevertheless, the role of universities should not be limited only to providing specialised education. Universities constitute a bridge between studies and the first job of a graduate. They have enormous potential to support students and graduates to successfully enter the chosen career path. The key element is the continuous expansion of collaboration with both local and wider businesses. This is an activity that Wroclaw universities already successfully perform. The next step would be to scale up current activities by constantly improving the efficiency of initiatives and extension of their scope.

It should be emphasised that a lasting and effective cooperation depends on the proper alignment between the teaching content and the current expertise demanded on the IT employment market. Working closely with businesses, while developing lists of major subjects and their corresponding syllabuses, followed by their annual validation, is just one of many areas of potential cooperation. Universities also very often decide to consult and adapt the topics of engineering and master's theses to the needs of local companies. Students are encouraged to carry out projects (e.g. under grants or EU subsidies) under the supervision of employees from the companies collaborating with the university. It would be worth considering ways to further develop these type of initiatives, since they allow a prospect graduate to establish a relationship with a potential employer at an early stage of his or her career and adjust their developing skill set to the expectations of the market.



Another possible form of cooperation would be the activity of scientific associations, including those of non-technical universities. In addition to research activities in a given field, these groups could support R&D initiatives at local enterprises, both in terms of content (access to expert knowledge) and experimental factors (conducting research and prototyping). This would create an area for verification of many innovative ideas within truly interdisciplinary teams and could further help companies create teams for new ventures.

Universities can also play an important role in developing students' soft competencies. In the age of intensive digitisation that, after all covers all industries, the multidisciplinary approach and a skill set linking knowledge from several fields are both gaining significant value. Already, many IT companies in Wrocław emphasise the versatility of their employees' who combine technical knowledge with science (such as mathematics and mechanics) and economic expertise. Resourceful and interdisciplinary teams promoted by agile methodologies (cross-functional teams) constitute the basis of modern enterprises focused on innovation and operating on the concept of design thinking. In this kind of cooperation, soft skills related to effective communication and smooth collaboration with business representatives including other people from the outside of the IT branch, such as subject matter experts or colleagues from other cultural circles, are becoming essential competencies.

The presence of various universities in Wrocław is a great opportunity to develop a wide range of projects within fields where technology (IT) plays a key role in developing scalable solutions. The initiator of such projects could be the academic associations themselves, first by enabling and promoting individual and interdisciplinary courses of study for people interested in this type of education and, secondly, by conducting thematic workshops at partner universities (e.g. technical training at business and natural sciences degrees, economics and managerial training at technical fields). Thirdly, they could also organise inter-university competition covering multidisciplinary topics. Such events would facilitate cooperation in an integrative team consisting of students from various fields or even different universities. What's more, it could constitute a great opportunity for establishing phenomenal startups.

Lastly, universities should promote a modern approach to entrepreneurship. This could evolve into a commitment of academic centres to provide students with integrated education, which prepares them to become future business leaders that are capable of operating under conditions of high uncertainty, as well as the considerable dynamics of modern markets. Such markets not only evolve at an unusual pace but are actually often revolutionised by the latest technologies. The knowledge of how to establish a startup, manage business risk, invest effectively, run an innovative sales department, or how to choose or even design an effective business model, form a highly intrinsic part of the modern markets' know-how and their effective development. Colleges can provide their graduates with a solid base in this area.



Cooperative activities with the city

The city and its institutions function as a bridge between enterprises, the IT community, universities and potential investors. This wide network of connections facilitates the implementation of projects aimed at attracting both potential workers and employers (investors), with a goal of connecting them with each other.

Role of the city



Promotion of the city as **a technology hub** in Poland and abroad



Inexpensive and well-organised **office and co-working space**



High quality of life in the city, implementing **Smart City** solutions



Well-developed **city air service**



Dialogue between all **elements of the ecosystem**



Organising **meetups and conferences for the Wrocław** technological ecosystem

In order to develop a new brand for Wrocław, a wide promotion of Wrocław as an IT-friendly city, supportive towards innovation and modern technologies, needs to be carried out both domestically and abroad. It should underline the advantages of the city itself, such as location, infrastructure, talent cluster, and the achievements of local entities. It should also emphasise the cooperative nature of the local IT sector itself, which not only aspires to, but has already achieved the status of a technological business partner among many of its clients. This will drive Wrocław's advantage over other competitive locations.

Assuming that the IT and modern technology sector is perceived as strategic for Wrocław development, the city has many opportunities to provide it with support and conditions for further growth.

Small and medium-sized companies will appreciate the inexpensive and well-organised office and co-working spaces, along with fast and reliable ICT infrastructure. A central place for meet-ups and logistic support in their organisation, as well as a platform for arranging and announcing them, would certainly delight Wrocław's IT community. Startups and innovators will be happy to take advantage of the opportunity to present their ideas in the national forum and contact potential investors, including foreign representatives. Employees, on the other hand, will focus more on the high quality of daily life in the city: efficient public transport (including suburban transportation), a citizen-friendly municipal office, the quality of the environment (numerous verdant areas, clean air, and low urban noise), attractive recreational areas and a rich cultural offering.

Undoubtedly, another important factor for improving the quality of work regarding Wrocław's location which cannot be overlooked, is the easiness of travel between Wrocław offices and foreign locations. Expanding the network of air connections with other large urban centres in both Europe and the wider world will reduce the travel time for local experts visiting their clients abroad, and likewise of representatives of foreign companies coming to meet their Wrocław technology partners.

Above all, consideration should be given to large initiatives requiring the involvement of significant resources, which certainly cannot be implemented by individual organisations, but would rather require collaboration and coordination of municipal institution and business parties. An example of such could be a few-day thematic conference on innovation and modern technology. It would be considered an undoubted success if Wrocław managed to organise such an event, or a series of events, and effectively promoted them in the region, or even on a European or global scale. Yet inviting a recognised international conference organised in a rotational model to run one of its edition in Wrocław, would definitely increase the city's prestige on the map of global IT centres.

Wrocław aspires to be called a "Smart City"¹⁵ and undertakes a number of initiatives aimed at implementing this development strategy. These projects in the field of economy (Open Data, CityLab, promotion and education in terms of culture and entrepreneurship), infrastructure (urban Internet, LoRaWAN – wireless communication system), transportation (Vozilla, Wrocław Electric Vehicle Charging System, Smart Trip) and management (Spatial Information System, Mobile Resident Assistant) are just a few of the many examples of activities supporting the idea of an Intelligent City.

Unquestionably, the city of Wrocław has the opportunity to develop a modern ecosystem, supporting entrepreneurship and innovation, and is already effectively using many tools to achieve this goal. The IT sector itself, along with its community, will be providing new ideas for improvement and further development. This is why the dialogue between all elements of this ecosystem is so important. A great chance for the city would also be to design comprehensive programs supporting the use of talent potential and technological knowledge. This could involve contacting young innovators with investors as part of acceleration programs or contests and competitions, for example. The city could also consider signing and promoting these programs both nationally and globally, in order not to only bring up talents but attract those from abroad.

Many years ago, the city of Wrocław decided to support the development of the local sector of modern information technology and it launched many initiatives encouraging IT companies to invest here. During this time, a multi-element ecosystem was created in which the city, universities, companies and, above all, the entrepreneurs operating in the IT field work together to create an environment for the dynamic development of this sector. These entities provide modern IT solutions both to the local and global market, effectively building Wrocław's reputation as an IT centre. Strengthening and intensifying cooperation within this ecosystem and, most importantly, a sense of shared responsibility for shaping the city's image as a centre of innovation and modern technology will allow Wrocław to achieve the status of a XXI century technological brand worldwide.

¹⁵ <https://www.wroclaw.pl/smartcity/>

Wroclaw

IT labour market

In Wroclaw, as in any other city in Poland, the IT market is one of the most dynamically developing industries – next to large production and warehouse investments, it is IT that constitutes one of the largest pillars of business development in the country. It is influenced by several aspects, first of which is, the scale of the Polish economy and thus the potential of human resources, along with their education and professional experience. IT industry employees, who work either in local IT companies or global corporations, are often members of large international development or maintenance teams, working on a product or service together with colleagues from the Philippines, India or the United States.

Strong competition on the IT labour market forces the companies to constantly develop their recruitment process and work on employer branding. For an IT specialist, the most important factor while choosing a new employer is still the salary and non-wage benefits package, followed by the technological stack and organisational culture, company values, office location and professional development and promotion.

Currently, the challenges for employers depend first and foremost on the company specifics. Often, the problem lies with the technologies applied in the organisation and difficulties in finding appropriate specialists with necessary competences. Another challenge usually comes in the form of internal regulations or corporate stands, such as no approval to hire B2B contractors, so the number of available candidates is certainly limited, in particular regard to those with highly valuable competencies.

Benefit packages in IT companies often differ when compared to companies in other industries. The competition on the IT employee market, especially on local markets, requires employers to constantly come up with new ideas for employee benefits. Company trips, often abroad, sponsorship of technical and soft training, fruit days, joint outings for a beer or a private masseur every week – these are rather no longer impressive ideas. Currently, one of the trends noticed is the creation of a job position in the company that deals with constant work regarding employee satisfaction – the so-called ‘employee experience’ specialist.

One of the noticeable trends in recruitment processes is their simplification and limitation of the number of stages. This results mostly from the fact that candidates are not particularly willing to participate in long and labour-intensive processes – they simply choose those employees that inform the candidate about the process in advance, including how it will work and to what extent it will be adapted to the specific candidate. Increasingly, during recruitment for programming positions, the skills of candidates are verified via online tests, which check their technical competencies at low cost during the first stage of the process.

Salary - key positions (PLN/month)

Application development

application architect

12 800 14 400 17 600

business analyst

8000 11 200 14 400

system analyst

8000 11 200 14 400

developer java

8800 13 200 18 000

developer .net

8800 12 800 17 600

QA manual

4400 6000 9 600

QA automated

5600 10 400 12 800

Management

team leader

9600 12 800

software manager

12 800 16000

product owner

8000 9600 13 200

project manager

9600 13 600 17 600

CIO/CTO

24 000 32 000

data center director

20 000 25 600

R&D director

20 000 28 000

chief information security officer

22 400 27 200

Cloud, data & DB

cloud architect

22 400 25 600 28 800

cloud developer

20 000 22 400 25 600

DWH admin

9600 12 800 14 400

DWH architect

11 200 14 400 17 600

DB admin

8800 11 200 13 600

DB architect

9600 15 000 17 600

data analyst

8800 12 000 17 600

SAP

SAP consultant

14 400 17 600

SAP project manager

14 400 19 200

system analyst

4000 5600 8000

Infrastructure & security

information security architect

12 800 14 400 17 600

security engineer

12 800 14 400 19 200

security manager

17 600 19 200 22 400

helpdesk / servicedesk

4000 4800 6400

IT admin

8000 10 400 12 800

network architect

12 000 14 400 17 600

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Tax incentives for the IT sector

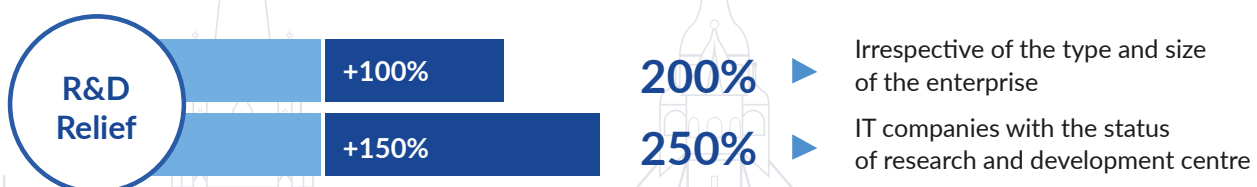
The Polish tax law offers certain tax measures aimed at boosting the innovativeness of the Polish IT sector. These solutions provide substantial savings for companies conducting research and development (R&D) activities and may be boosted even more if such companies sell certain intangible goods (eligible for IP Box). It's not just companies that can take the advantages of potential tax incentives - the tax savings are also available for their IT employees, as long as their work has some creative features.

Double your tax savings with R&D tax relief

R&D tax relief allows taxpayers conducting R&D activities an additional "deemed" deduction.

How much can you gain?

As long as the IT company conducts activities aimed at providing new functional value for users of the products and the offered products have unique and unprecedented features on the market, the company can take advantages of this relief.



In practical terms, the company can save up to 190 PLN on every 1,000 PLN spent on R&D (or as much as 285 PLN in the case of the R&D centers).

How are “R&D activities” defined under the Polish CIT Act?

Research and development activities are “creative activities involving scientific research or development work undertaken in a systematic manner in order to increase knowledge resources and use the resources to create new applications”.

What types of costs qualify for the purposes of R&D tax relief?

Costs that qualify for the purposes of R&D tax relief are the costs incurred in relation with R&D activities that are then deducted from the taxpayer’s tax base. The deduction is allowed as long as the qualified costs have not been refunded to the taxpayer in any way (e.g. via grant) or have not been otherwise deducted from the tax base.

The catalogue of qualified costs includes:

- + Employees’ wages and social security contributions.
- + Purchase of commodities and raw materials directly connected to R&D activities.
- + Purchase of the scientific equipment not treated as fixed assets for tax purposes.
- + Opinions, advisory services, and research results purchased from the qualifying scientific units.
- + Fees for the use of scientific equipment paid to unrelated entities.
- + Costs of obtaining and maintenance of the protection of the intellectual property (IP) rights.
- + Depreciation and amortization of the fixed and intangible assets used for the purposes of the R&D activities with the exception of cars and real estate.

How can you benefit from the R&D relief – main rules

- + To benefit from the R&D tax relief, the taxpayers should keep records of the qualified costs incurred in relation to R&D works in a given year.
- + The relief applies regardless of whether the R&D works are successful or of how innovative the results are.
- + The tax relief is also available for qualifying projects in progress.
- + The annual deduction of eligible expenditures cannot exceed the amount of income in a given tax year, however, the excess of tax relief available may be utilised by the taxpayer within 6 consecutive tax years.

Innovation box (IP Box) - preferential 5% rate of taxation of income

The Innovation Box tax relief allows companies to apply a 5% tax rate (instead of the standard 19% rate) to the income derived from the qualified IP rights (QIPR). One of the QIPR's is copyright to computer programs.

How can you benefit from the Innovation Box – main rules

- + The tax preference applies provided that a taxpayer conducts R&D activity related to development, creation or improvement of a given intellectual property component.
- + It may be applied irrespectively from the legal form of conducting the activities.
- + The reduced CIT rate of 5% may be applied to revenues from licensing of computer software, sale of copyrights to computer software, any compensations for breach of the copyrights and also from sale of goods and services in the part resulting from QIPR used. It may be also applied to licenses sold by distributors, as long as the distributor contributed to the licensed QIPR by conducting R&D works.
- + The amount of income that will be subject to the preferential 5% tax rate i.e. the qualified IP right income (QIPRI), corresponds to the amount calculated as the income obtained from the qualifying IP right, multiplied by a so called nexus as per specific formula provided under the Polish CIT Act. The nexus formula refers to the costs actually incurred by the taxpayer to conduct R&D activities related to the QIPR, as well as costs incurred for the acquisition of the results of R&D. The higher the cost of R&D activities, the more favorable result of the formula. However, it should be noted that the maximum value of the formula may be equal to 1.
- + The biggest tax relief may expect taxpayers who develop innovative solutions independently or in association with unrelated parties.
- + The taxpayer is obliged to run separate accounts recording revenues and costs related to income from QIPR.

Advantages of the Polish tax incentives for innovation

A taxpayer is allowed to apply both R&D tax relief and IP Box tax relief together (provided that the underlying criteria for both tax reliefs outlined above are met), however, they may not be applied jointly with respect to the same QIPR.

Higher tax deductible costs for creative IT employees

As follows from the Polish PIT Act, individuals deriving employment revenues in return for creative activities may benefit from higher tax deductible costs of 50%. The possibility to apply such higher tax deductible costs is limited to revenues earned from, among others, creative activities in the area of computer programs and computer games.

What impact does it have on the company?

As a result, organisations employing individuals performing activities outlined in such areas should be allowed to recognise 50% tax deductible costs for such individuals.

This is subject to the following conditions:

- + The individuals create a copyrightable work (creation) as defined by the Polish Copyrights Act, which is unique and original.
- + The employment contract provides specifically for the transfer of copyrights for the copyrightable work.
- + The individual's employment contract specifies the portion of the remuneration payable in return for the transfer of copyrights for the copyrightable work (royalties).

In practice, the employer should also collect supportive documentation evidencing the actual transfer of copyrights regarding the employees' creations.

The amount of tax deductible costs to be recognised in one tax year is capped at 85,528 PLN. The maximum benefit per employee (i.e. increase of net remuneration with no impact on employment cost for employer) may amount to ca. 27,000 PLN per annum.

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JP Weber

supporting decision makers

Selected IT companies **in Wrocław**



3M	Btech	Divante	GlobalLogic
AB	Business Reporting Solutions	Dolby	Gorilla Group
Accenture	byteLAKE	Dook Pro	Grinn
Accesto	Callstack	Droids on Roids	HCL
Acturis	Capgemini	Duco	Hicron
Ada	CD Projekt Red	DWG Design	HP Inc.
Agile Force	CDQ Poland	EARP Integration	HPE
Alfa-Net	Ceneo	Empirica	IBM
All In Mobile	ChallengeRocket	Epam Systems	IDEACTO
Altimi Solutions	Ciklum	Epiq Systems	Identt
Amsterdam Standard	Clearcode	Etteplan	infinIT Codelab
Antologic	Kodilla	Eurobank	Infor
Appformation	CodeRunner	Explain Everything	Infosys
Aptitude Software	Cogniance	Exso	Infusion
Arkency	Comarch	EY GDS	InsERT
Asseco	CrazyCall	Fibertide	Inteca
Astek Polska	Credit Agricole	Fingo	Intive
Atos	Credit Suisse	Flash Robotics	IT Kontrakt
Avra	Cryptomage	FrameLogic	iteratec
AXA XL	CSS Corp	Fream	ITMation
AxiomSL	Cypherdog	Funmedia	Kadromierz
Better Software Group	DataArt	Gemotial	Kruk
Birlasoft	Datarino	Geosoft	Lama Media
Blebox	DataWalk	Getin Noble Bank	LeanSpin
BNY Mellon	Devinity	GiantLazer	Liga Niezwykłych Umysłów
Brand24	Diehl Controls	Gigaset	LiveChat
		GISPartner	



LogicalTrust	Piwik PRO	Sofomo	Vialutions
Look4App	PPG	Softserve	Viessmann
Look4IT	Proa Technology	Spyrosoft	vm.pl
Luxoft	ProxiGroup	Stermedia	Volvo IT
Mahle	QAD	Studio Software	VR Global
Meeting Application	QBICO	STX Next	Vratis
Micro Solutions	Qiagen	Sygnity	Vsf-experts
Mindz	Quality Task Force	Synexus	Wilabs
Mirumee Software	QuantUp	Talex	Woodpecker
Mobile Vikings	Ratio Web	Techland	Yuma
Mok Yok IT	Red Embedded	Ten Square Games	Zone IT
Monterail	Rocket Media	Tequila Mobile	zrzutka.pl
Mphasis	RST	TestArmy	
MT Silesia	Ryanair Travel Labs	Thaumatec	
Naturally	S3 Group	Tieto	
NBC	Santander Global	Tigerspike	
Netia	Operations	TimeCamp	
Neurosys	Satlan	Tooploox	
Nokia	Sente	Transition	
Nomtek	SI Consulting	Technologies	
Objectivity	Sienn	Trapeze Poland	
Ocado	Sii	UBS	
Opera Software	Silicon & Software	Unic	
OpsTalent	Systems	UNIT4	
Optiva	Smabblers	Unity Group	
PGS Software	SmartHomify	Var Unit	
Picadilla	Smith & Nephew	Vazco	



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