Silesian
Voivodeship

Analysis of the startup ecosystem in the Silesian Voivodeship

Project titled: "InterGlobal – Internationalisation of SMEs from the Silesian Voivodeship" FE SL 2021–2027, Priority FESL.01 European Funds for Smart Growth, Measure FESL.01.10 Promotion of Export and Internationalisation of SMEs

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Glossary of terms and abbreviations

Accelerator	an intensive program designed to accelerate the development of young companies (startups) and prepare them for market entry, investment, or implementation. It typically includes training, mentoring, access to pilot projects, and financial support in the form of grants and/or loans. Increasingly, an equity component may also be introduced (business angels, seed funds).
Association of Innovation and Entrepreneurship Centre Organisers in Poland (SOOIPP)	a nationwide association bringing together entities that operate technology parks, incubators, and other centres supporting innovation and entrepreneurship; it focuses on representing their interests, facilitating the exchange of experience, and analysing the innovation ecosystem.
Business Environment Institutions (BEIs)	entities operating most often in a non-profit model (companies, foundations, associations). Their services may be provided free of charge, partially paid, or fully paid; they utilise both private and public funds; and they support entrepreneurship, innovation, and the region's economic activity. Examples include innovation and entrepreneurship centres, technology transfer centres at universities, clusters, technology parks, incubators, accelerators, chambers of commerce, and industry associations.
Business angel	a private entity that invests its own financial resources in projects (young, innovative companies and startups) at an early stage. It provides capital, experience, and networks, typically investing at the seed stage – prior to venture capital funds or alongside high-risk seed funds, where its involvement lends credibility to the project. Consequently, it is usually the first source of external capital, in addition to public grant funding.
Business-to-business (B2B)	a market relationship model in which the company's customer is another business (not an individual consumer).
Cluster	a formalised form of cooperation between companies with a defined specialisation in a given area, also involving other important entities from the perspective of the value chain, such as universities, research institutes, and business environment institutions. Unlike industry associations, a cluster pursues objectives related to the development of its members and their products and services, fostering innovation and creating added value, rather than limiting itself to serving as a forum for exchanging experiences and representing the sector externally.
Compound Annual Growth Rate (CAGR)	the average annual rate of growth of a value over a given period, calculated using compound interest (so that the initial value reaches the final value).
Computer-Assisted Web Interview (CAWI)	a quantitative research method involving the self-completion of questionnaires via the Internet.
Connecting Europe Facility (CEF) / Connecting Europe	an EU financial instrument supporting the development of trans-European transport, energy, and digital networks.
Entrepreneurial Discovery Process (EDP)	a mechanism for cooperation between business, science, and public administration, aimed at identifying priority areas of innovation and aligning public support with the real needs of the economy.
European Digital Innovation Hub (EDIH)	a support point for small and medium-sized enterprises and public entities, offering consultancy, the opportunity to test technologies in practice, and competence development.
European Funds for Smart Economy (FENG)	national instruments supporting innovative projects, R&D, digitalisation, and commercialisation
European Funds for Social Development (FERS)	a programme supporting human capital, skills, and social inclusion, referenced as a complement to strictly investment-focused instruments.
European Funds for Silesia 2021–2027 (FE SL)	a regional EU funds programme financing innovation, transformation, and internationalisation; source of grants and financial instruments for enterprises.
European Funds Digital for Infrastructure, Climate, Environment (FEnIKS)	a national programme co-financed by the ERDF and the Cohesion Fund, focused on infrastructure, energy, and environmental investments; significant for innovative projects in the region.
European Funds for Digital Development (FERC)	a programme focused on digitalisation projects, broadband infrastructure, and digital skills; linked to the development of the ICT sector and tech startups.
European Regional Fund (ERDF)	an EU cohesion policy fund that finances investments in infrastructure, innovation, SMEs, and the economic transformation of regions; part of the programmes used in the Silesian Voivodeship.
European Social Fund Plus (ESF+)	an EU fund supporting the labour market, skills, social inclusion, and education.
European Union (EU)	a political and economic organisation uniting European countries, within which cohesion, innovation, and transformation policies are shaped, along with funding programmes.
EUROSTAT	the statistical office of the European Union. An institution that collects and provides comparable statistics for EU member states and a data source used in this report for international comparisons.

Focus Group Interview (FGI)	a qualitative research method in the form of a moderated, focused group interview.
Fund of funds (FoF)	an investment fund that allocates its resources into other funds instead of directly into companies. This approach enables risk diversification and provides access to a broad portfolio of startups through professional fund managers.
Gross Domestic Product (GDP)	the total value of final goods and services produced in an economy during a given period (most often a year), after deducting the costs of intermediate consumption; a fundamental aggregate describing the size of the economy.
Gross Value Added (GVA)	the difference between the value of goods and services produced and the value of intermediate goods and services consumed in the production process; a measure of the contribution of sectors or regions to the creation of GDP.
Hub	a specialised centre (either a physical space or an organisational structure) that brings together businesses, institutions, and experts around a specific industry or topic, enabling them to collaborate, develop projects, and test new solutions.
Information and Communication Technologies (ICT)	a sector encompassing services and solutions in IT, telecommunications, software, data, and digital services..
Incubator	a programme or space designed to support startups in their earliest stages, primarily pre-seed. It provides training, mentoring, office space, administrative and legal assistance, rapid prototyping facilities, and networking with partners. Its purpose is to enable entrepreneurs to test and validate the feasibility of an idea / PoP / PoC; register a business; secure intellectual property rights; and prepare for market entry and for seeking customers and partners (pitching).
Internationalisation	activities aimed at preparing and supporting planned entry into foreign markets. This includes trade missions, certifications, market analysis, networking, identifying and building customer and partner relationships, developing partner networks, and conducting pilot projects with foreign clients.
Just Transition Fund (JTF)	an EU fund supporting regions most affected by the transition towards a climate-neutral economy; in the Silesian Voivodeship, it serves as a key source of financing for restructuring and innovation-related projects.
Katowice Special Economic Zone (KSEZ)	an EU fund supporting regions most affected by the transition towards a climate-neutral economy; in the Silesian Voivodeship, it serves as a key source of financing for restructuring and innovation-related projects.
Living lab / testbed	testing environments in real or controlled conditions; they shorten the time needed to validate project assumptions and prepare for the implementation of new solutions.
Local Government Units	municipalities, counties, and voivodeships carrying out public tasks at the local and regional level
Matchmaking	support in identifying and initiating cooperation with business partners, including clients, suppliers, investors, and partners for participation in consortia, projects, programs, competitions, etc., both in local and national markets as well as internationally.
Metropolis GZM (Górnośląsko -Zagłębiowska Metropolis)	an association of 41 municipalities in the Silesian Voivodeship, established under the Act on the Metropolitan Association in the Silesian Voivodeship. It coordinates, among other things, public transport, funding of joint tasks, collective procurement, and development programmes.
Micro, small and medium -sized enterprises (SMEs)	companies employing between 0 and 249 people, meeting the turnover and balance sheet criteria defined in EU regulations.
National Centre for Research and Development (NCBR)	a Polish investment and reform programme financed by the Recovery and Resilience Facility, focused among other things on energy transition, digitalisation, and business support.
Open Innovation	an operational model in which companies open their innovation processes to external partners. It enables co-creation with universities, startups, business angels, and seed and venture capital funds that invest in high-risk young companies.
Open-Source Intelligence (OSINT)	a systematic review and analysis of open information sources; it complements public statistics and primary research.
Permanent Observatory of the Regional Innovation Strategy (SO RIS)	a mechanism for monitoring the implementation of the Regional Innovation Strategy (RIS) in the Silesian Voivodeship, including research, consultations, and continuous strategy updates.
Polish Agency for Enterprise Development (PARP)	a government agency implementing support programmes for SMEs, innovation, and the internationalisation of enterprises.
Polish Classification of Activities (PKD) version 2007	the official national classification of types of economic activity, used for example in the REGON register, public statistics, and analyses of the structure of entrepreneurship (sections, divisions, subclasses).
Polish Investment Zone (PSI)	a system of tax exemptions for new investments across the entire country; it also includes R&D projects.

PFR Ventures	a fund from the Polish Development Fund Group that invests in venture capital funds financing innovative SMEs and startups at early stages of development.
Proof-of-concept (PoC)	feasibility check of a solution on a limited scale before investing at an early development stage or before implementation, sometimes the term proof-of-principle (PoP) appears, used interchangeably with proof-of-concept or as an even earlier stage preceding it.
Public-private partnership (PPP)	a form of implementing investments and public services in which a public entity collaborates with a private partner – sharing risks, expenditures, and benefits.
Quadruple helix	a collaboration model involving four spheres; it brings together science, business, the public sector, and civil society.
Regional Innovation Strategy of the Silesian Voivodeship 2030 (RIS 2030)	a strategic document of the Silesian Voivodeship defining the principles for the use of European Union funds for the programming periods, indicating investment priorities, areas of support, and mechanisms for implementing cohesion policy in the region.
Regional Operational Programme of the Silesian Voivodeship (RPO WSL)	a strategic document for the Silesian Voivodeship that defines the rules for the use of European Union funds for programming periods, indicating investment priorities, areas of support, and mechanisms for implementing cohesion policy in the region.
REGON	national official register of national economy entities maintained by the Statistics Poland (GUS); the REGON number is used to identify enterprises and other organisational units in public statistics.
Research & Development (R&D)	research and development activity carried out by companies and scientific institutions. It includes work on new or improved products, processes, and services.
Scale-up	a post-early-stage company with a growth rate exceeding the market; it systematically increases sales and employment.
Simple Joint-Stock Company (SJSC)	a flexible legal form of a capital company, often chosen by startups; it facilitates investor entry and share issuance.
Soft-landing	for a local startup: support in expanding into foreign markets or establishing cooperation with international partners; for a foreign entity: support in starting operations in Poland and collaborating with Polish partners.
Startup	a young company developing a scalable product or service with high innovativeness; it operates under conditions of uncertainty and tests its business model.
Startup development stages (pre-seed, seed)	stages of building a company, from concept validation and initial testing to early commercialisation and acquiring the first customers. The pre-seed phase mainly involves refining the idea, building the team, and creating a prototype, while the seed phase focuses on product development, market testing, and beginning to scale sales.
Startup ecosystem	a network of actors, resources, and rules that support the creation and scaling of innovation within the region. It encompasses academia, business, public administration, and civil society, including universities, public administration entities, business environment institutions, and financial institutions. The startup ecosystem also includes public policies implemented by public administration and the support programs carried out within these frameworks, engaging various stakeholders.
Statistics Poland	a central government administration body responsible for conducting public statistics, including the REGON register, business surveys, and macroeconomic data.
Technology Readiness Level (TRL)	a technology maturity scale used for planning commercialisation; it covers the transition from basic research to market implementation. TRL 1 – Observation and description of the basic principles of a phenomenon scientific knowledge without an application concept). TRL 2 – Formulation of a solution concept and potential applications. TRL 3 – Initial proof of concept confirmed by research results. TRL 4 – Verification of the technology in laboratory or laboratory-like conditions. TRL 5 – Verified prototype operating in conditions close to real (integrated environment). TRL 6 – Prototype system demonstrated in a representative, target environment. TRL 7 – Demonstration of a complete system in operational conditions (pilot at the user's site). TRL 8 – Completed and tested system, ready for commercial deployment. TRL 9 – Technology proven in practice, functioning in real market conditions.
Technology Transfer Centres (TTC)	units within universities responsible for protecting intellectual property, commercialising technologies, and connecting science with business.
University special purpose vehicles (SPVs)	separate capital companies established by universities to commercialise research results, manage intellectual property, and take shares in companies founded on university-developed technologies.
Upper Silesian Fund S.A.	a regional financial and development institution, implementing - among other things - business support instruments and international projects for the Silesian Voivodeship.
Venture Capital (VC) /Corporate VC (CVC)	funds that invest in growth-stage companies at various stages; CVCs are capital vehicles created by corporations to invest in strategic innovations.

1.

Introduction

1.1. Purpose and scope of the study

The aim of this study is to summarise key findings from an analysis of the startup ecosystem in the Silesian Voivodeship, including a diagnosis of the current situation, identification of barriers, and an assessment of the region's development potential. The document also includes recommendations for actions that support the development of the startup ecosystem in the region, with a particular focus on the internationalisation processes of young companies.

The intended outcome is to provide tools that support strategic decision-making, enable better use of public funds, and help design support instruments tailored to local needs and the development stages of startups. One challenge is the lack of a uniform definition of a startup – in practice, criteria for innovation, scalability, and company age vary, making precise estimates and comparisons difficult. This study adopts the Polish Agency for Enterprise Development (PARP) definition: "a young enterprise creating a solution based on knowledge and technology, focused on rapid sales scaling, and continuously refining a repeatable business model." The document consists of ten chapters: from the regional context and ecosystem diagnosis, through an analysis of strengths and weaknesses, the potential for internationalisation and financing, to the role of e-commerce, examples of good practices from Europe and around the world, and a catalogue of recommendations. The final chapter provides a concise summary of the key insights drawn from the analysis.

1.2. Regional and national context

The Silesian Voivodeship is located in the southern part of Poland and ranks 14th in terms of area. The region's showcase is a highly developed service sector, industrial traditions, and education tailored to its needs.

According to data from the Statistics Poland for 2023*.

4.32 million population	over 11% of Poland's population
167 number of municipalities	49 urban, 24 urbal-rural, and 94 rural municipalities
12.3 thousand km² surface area	3.9% of Poland's area
404.74 billion PLN GDP originating from the voivodeship	second highest GDP in the country**
3.6% unemployment rate	average for Poland: 5,1%
7 225.69 PLN average gross salary	average gross salary in Poland: 7,199.69 PLN

** Statistical tables from Statistical Yearbook of the Śląskie Voivodeship 2024, Statistics Poland 2024.*
*** Preliminary estimates of gross domestic product by region in 2023 r., Statistics Poland 2024.*

Thanks to many advantages and positive growth trend, in terms of economic indicators, the Silesian Voivodeship performs above average compared to all other voivodeships. Nevertheless, there are several areas where where appropriate support will enable the full use potential and increase the region's development dynamics.

In the National Regional Development Strategy 2030[1], the Silesian Voivodeship has been designated as one of the Areas of Strategic Intervention, which provides dedicated funding for the development of innovation and new businesses. The Development Strategy of the Silesian Voivodeship "Silesia 2030" also envisages the use of the Just Transition Fund, creating an important financial base for pro-innovation projects.

The Silesian Voivodeship generated 11.9% of Poland's GDP in 2023, placing it among the top five regions that contribute the most to the national economy. GDP per capita is PLN 93,566, slightly above the national average, and in 2023, GDP reached PLN 404.7 billion. The region is highly diversified – the Katowice subregion generates over a fifth of GDP, with GDP per capita reaching 133.6% of the national average, while in Bytom the income per inhabitant is twice as low. Silesia remains the second-largest region in the country in terms of gross value added.

The REGON register includes over 463,000 entities declaring they run a business, which corresponds to approximately 10.21% of the business population in Poland (as of June 30, 2025, approximately 550,000 business entities were registered), although the entrepreneurship rate is lower than the national average[2]. However, the region has a strong R&D base – 11.6% of domestic R&D entities and almost 28,000 employees, which favours the creation of spin-off comapnies and technological projects[3].

The innovation ecosystem in the Silesian Voivodeship is polycentric. In addition to the main urbanised area of the Silesian Voivodeship, Rybnik, Częstochowa, and Bielsko-Biała, along with their surrounding centres, are important hubs of activity. Together, they create a dense and diverse market of public and private customers, with short paths to universities, institutes, technology parks, clusters, and business environment institutions.

[1] *National Regional Development Strategy 2030 (KSRR 2030), Ministry of Development Funds and Regional Policy, 2019.*
[2] *Quarterly information on entities of the national economy in the REGON register for 2025, Statistics Poland, 2025.*
[3] *Quarterly information on entities of the national economy in the REGON register for 2025, Statistics Poland, 2025.*

1.3. Research tools used

As part of the work on the analysis of the startup ecosystem in the Silesian Voivodeship, the following research methods were used, among others:

- CAWI interviews (Computer-Assisted Web Interview) involving 400 enterprises from the Silesian Voivodeship and regional business environment institutions (BEIs). The aim of the study was to identify the main needs and challenges in the context of developing the startup ecosystem in the Silesian Voivodeship.

- In-depth Interviews (IDI) with key individuals in the startup ecosystem of the Silesian Voivodeship, aimed at deepening the insights from the survey and gaining a better understanding of the experiences, barriers, and ecosystem development opportunities in the region. A total of 21 in-depth interviews were conducted with representatives of startups, SMEs, business environment institutions, and large and medium-sized enterprises cooperating with startups.

- Focus Group Interviews (FGI) with representatives of startups and support institutions, aimed at gathering diverse perspectives on the functioning of the ecosystem. As part of the report preparation, five group interviews were conducted.

- Analysis of the available literature and statistical data relevant to the analysis of the startup ecosystem in the Silesian Voivodeship.

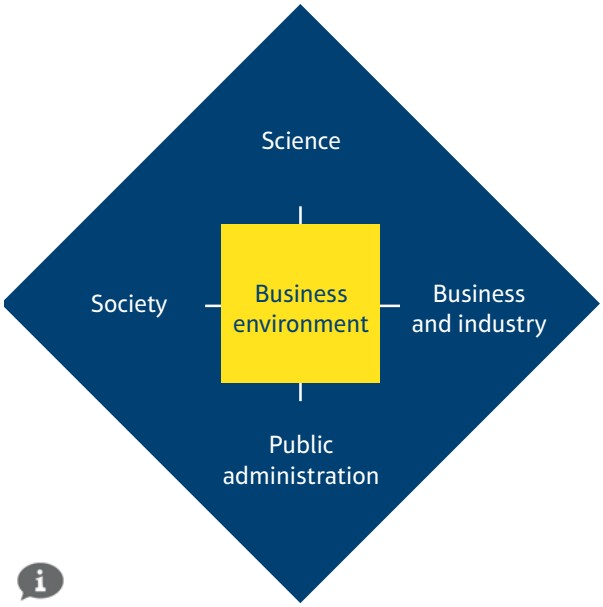
2.

Diagnosis of the startup ecosystem in the Silesian Voivodeship

2.1 Characteristics of the startup ecosystem in the Silesian Voivodeship

The startup ecosystem of the Silesian Voivodeship is best described through the quadruple helix model, within which science, business, the public sector, and civil society collaborate. The region boasts a dense network of active entities – universities and research institutes are sources of talent and innovation, and are surrounded by numerous science and technology parks, incubators, and accelerators. These institutions provide laboratory facilities, advisory services, networking opportunities, and prototyping workshops, supporting the development of ideas at the earliest stages of their commercialisation and the creation of new companies.

Figure 1. Visualisation of the quadruple helix of a startup ecosystem



Source: own elaboration.

The tools and infrastructure mentioned above that enable startup development are available in all major urban centres across the Silesian Voivodeship. In addition to metropolitan hubs, such initiatives operate in Bielsko-Biała, Częstochowa, and Rybnik, as well as in Cieszyn, where the Castle of Entrepreneurship connects creative communities with business and public administration. On the other hand, the research clearly emphasised the need to create a kind of soft-landing – a regional hub that helps startups navigate the available support and connects entities seeking capital with large companies and business institutions. Respondents indicated that the network of parks and incubators is extensive, but there is no single center to coordinate the flow of information, integrating initiatives from local governments, universities, and the private sector.

The network of actors is complemented by financial institutions, venture capital funds, business angels, and social organisations. According to respondents from the SME and BEI segments, the number of support programmes in the region is growing, but there is a lack of long-term stability and complementarity between government programmes and the offerings of universities and funds. A lack of stable, coherent programmes was also noted – young companies often use several small projects instead of a single, comprehensive programme. Strengthening collaboration with large enterprises through joint solution testing and a grant system for pilot projects is essential. The development of the ecosystem requires an active role of local governments in coordinating activities in individual subregions, promoting best practices, and developing an information platform that facilitates access to available support and partners. Such a platform could also encourage leveraging the proximity of borders to expand into the Czech, Slovak, and German markets. The entire system relies on cooperation between science, business, administration, and society – success of the regional innovation environment depends on the synergy of their actions.

2.2 A general overview of the startup ecosystem in the Silesian Voivodeship

Number of startups operating in the Silesian Voivodeship

Due to the lack of existence of one register collecting information on startups operating in individual regions and on a nationwide scale, the analysis uses two complementary methods to estimate the number of startups operating in the region:

- **Top-down method** – Assuming the share of startups in the population of companies in Poland (approx. 0.09%), for the Silesian Voivodeship, where as of June 30, 2025, 550,000 entities were registered, this gives approximately 494 startups[4]. Alternatively, applying the same share exclusively to entities declaring business activity (as of June 2025, this amounted to over 463,000 entities) gives an estimated 417 active startups[5].
- **Bottom-up verification method** – Analysis of databases of support institutions and industry rankings after verification of the companies' activity and elimination of duplicate names indicated 512 entities[6].

Approx. 500

Number of startups in the Silesian Voivodeship

In this study, based on the presented data, an ordinal estimate of approximately 500 startups in the voivodeship was adopted, obtained using two convergent methods, i.e. share estimation based on national data and the proportion of the number of startups to the general population of companies, and bottom-up verification through the analysis of regional and industry databases of entities, eliminating duplicate names. Both approaches indicate the same order of magnitude, which allows the result to be reliably used in planning public activities.

The industry structure of the startup ecosystem

Smart specialisations of the Silesian Voivodeship

Regional smart specialisations prioritise development directions, concentrating public and private resources on areas with the greatest growth potential. For startups, this means access to dedicated financial instruments, infrastructure, and ecosystem of partners that operate across the same value chains. Joining a regional smart specialisation increases young companies' chances of financing, scaling, and internationalisation.

The Silesian Voivodeship has defined five specialisations: energy, medicine, ICT, green economy, and emerging industries – reflecting the region's industrial traditions and research potential. The startup structure shows a concentration in ICT, medical technologies, industrial solutions, and the green economy.

Regional Smart Specialisations: Energy, Medicine, ICT, Green economy, Emerging industries

The Silesian Voivodeship is developing five key areas of innovation that reflect both its industrial tradition and its research and development potential. Energy, as one of the pillars of the region's economy, encompasses technologies that increase energy efficiency, renewable energy sources, energy storage, smart grids, and energy-efficient construction. Medicine benefits from a strong healthcare system and research base, developing biotechnologies, biomedical engineering, telemedicine, and data analytics. Information and communication technologies (ICT) play a horizontal role, supporting the digital transformation of industry and services through cloud solutions, telecommunications, cybersecurity, and systems for Industry 4.0. The green economy focuses on clean process technologies, environmental biotechnologies, water and air purification, and sustainable transport, supporting climate change. Emerging industries include advanced materials, automation, robotics, and sensors, as well as aerospace, space, and automotive technologies, creating new competitive advantages on a global scale.

[4] *Monthly information on national economy entities in the REGON register – June 2025, Central Statistical Office, 2025.*

[5] *Tables on entities of the national economy registered in the REGON register declaring business activity as of June 30, 2025, Statistics Poland, 2025.*

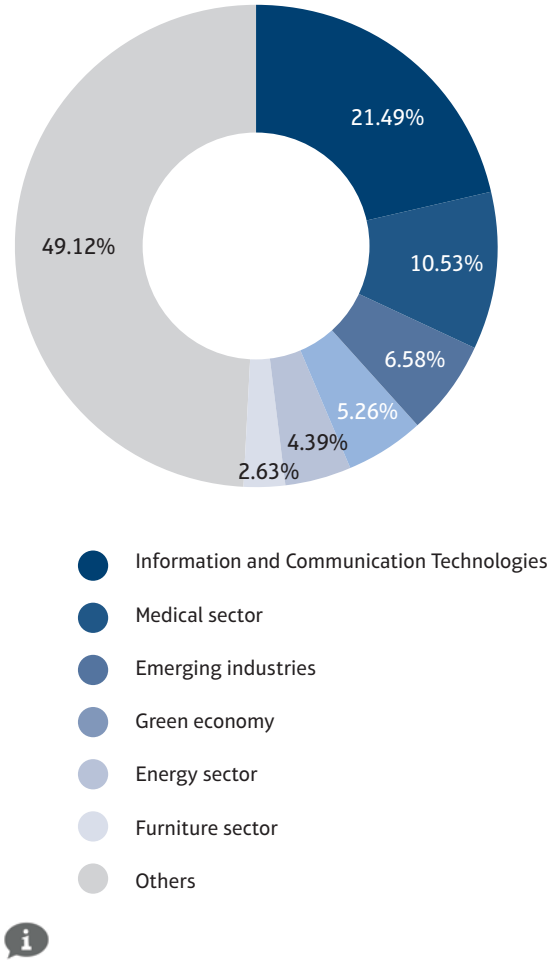
[6] *List of startups based in the Silesian Voivodeship, Innovation Ecosystem Map, Polish Development Fund, available at: https://poland.dealroom.co/companies.startups/f/locations/allof_Poland/slug_locations/anyof_~silesian_voivodeship~?showLandscape=true&filter=income_streams (access: 17.11.2025).*

The synergy between five smart specialisations, supported by dedicated infrastructure and funding sources, makes the Silesian Voivodeship one of the most diversified areas of innovation in Poland. The region remains attractive to both young technology companies and investors seeking projects and solutions in the areas of industry and green transformation.

Startup business sectors in the Silesian Voivodeship

The industry structure is a key element in describing the startup ecosystem, as it highlights the areas where young and small companies are most active. In the CAWI survey, respondents were asked to indicate the main specialisations in which they operate. The chart below presents the distribution of these responses, allowing us to capture the dominant development directions and the region's potential competitive advantages.

Chart 1. Indications regarding industry specialisation among survey respondents



Source: own elaboration based on the survey results.

Startup development in the region is concentrated around several key sectors:

- **Information and Communication Technologies (ICT) – 21.5%** of all responses. ICT remains the foundation of economic digitalisation and serves as a horizontal specialisation.
- **Medical sector – 10.5%.** A field with strong growth potential, especially in the context of an ageing population and the need to improve healthcare efficiency.
- **Emerging industries – 6.6%.** These are fast-growing sectors linked to new technologies and automation.
- **Green economy – 5.3%.** Indicates growing startup interest in sustainable development, energy transition, and the circular economy.

The distribution of activity shows that the Silesian Voivodeship is evolving towards smart specialisations that combine digital technologies with sectors of high social and economic impact. For institutions supporting innovation, this means the need to design programmes that integrate technological competencies with industry-specific knowledge, particularly in the areas of healthcare, Industry 4.0, and the green transition.

The identification of the industry structure of startups from the Silesian Voivodeship can be supported by data from the PFR Innovation Ecosystem platform – a map of startups operating in Poland based on the Dealroom database. According to available data (as of 17 November 2025), startups in the enterprise software sector dominate in the Silesian Voivodeship – as many as 66 entities, which confirms strong demand for digital solutions supporting business. In second place is the health sector with 36 startups, indicating the significant importance of medtech and innovation in healthcare. Marketing (30), fintech (27), and transport (26) follow. This structure confirms that the region combines traditional industries with new technology areas, creating broad opportunities for innovative projects.

Figure 2. Main sectors of startup activity in the Silesian Voivodeship

Source: own study based on the PFR Innovation Ecosystem map.

The scale of operations and financial condition of startups from the Silesian Voivodeship

The scale of employment in small companies and startups reflects their current operational capacity and potential for scaling. In the CAWI survey, respondents independently declared employee number ranges, which makes it possible to capture differences between early-stage entities and more established ones. The chart below presents the employment distribution within the surveyed sample, indicating which categories dominate and the share of the smallest teams. This data serves as a starting point for an initial assessment of how well the support instruments in use are tailored to the prevailing scale of these companies' operations. It should be noted that the figures reflect the situation at the time of conducting the CAWI survey and may differ from general statistical data.

The analysis results indicate that most companies are micro-enterprises, confirming that the ecosystem consists mainly of young, small companies that are just beginning to build teams and scale their operations.. The second key indicator is the level of gross revenue in 2024, which reflects economic health of startups and the degree of commercialisation of solutions. The revenue distribution figure allows us to identify companies operating with a minimal level of revenue and those operating at a larger scale. The findings are important in terms of designing financial support and assessing growth capital needs.

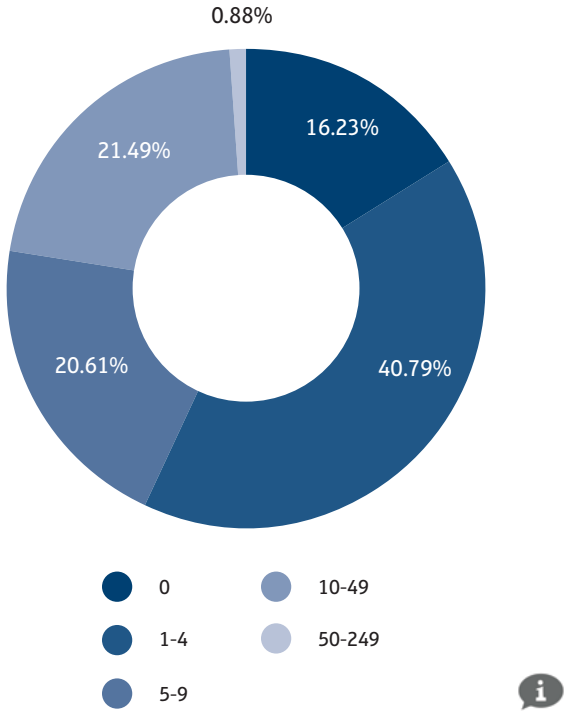
Sectoral structure of new business registrations

The analysis of 2024 data on companies' classification under PKD sections confirms significant changes in the entrepreneurial structure of the Silesian Voivodeship, which have a direct impact on startup support policies and the development of the innovation ecosystem in the region. The highest number of new registrations was recorded in the specialised construction works sector.

Recent trends indicate a decline in registrations in retail (-17%) and IT (-19%), which may indicate the fading of the pandemic-driven e-commerce growth wave and that the IT market is maturing, while real estate services show growth (+12%). E-commerce remains the leading PKD sub-category (1,107 registrations), but its decline confirms a post-pandemic normalisation. IT (738 registrations) is shifting towards specialised B2B models.

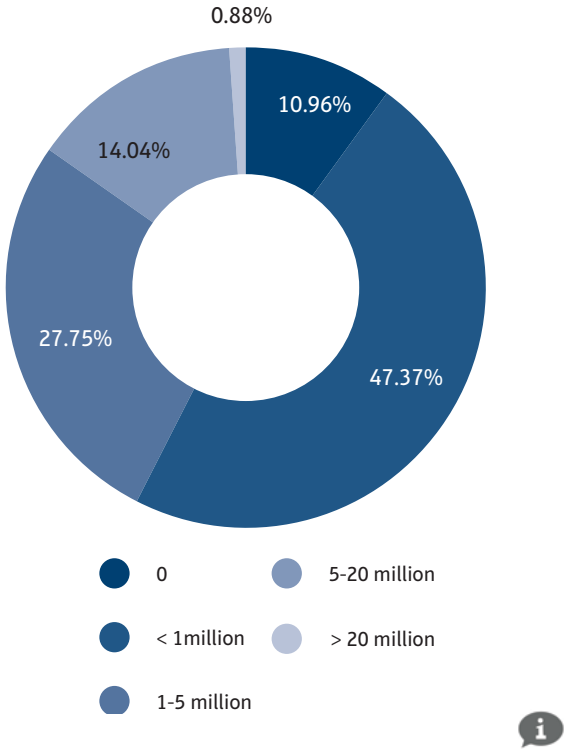
These changes don't mean a weakening of technological potential, but rather its evolution – the market requires more advanced solutions and collaboration with industry. Growth in the real estate, health, and construction sectors indicates that these are areas where it is worth launching pilots, i.e., testing ideas in the fields of proptech, healthtech, and green building. In the transport sector, there is expanding scope for innovation in logistics and data-driven services. It is crucial to combine incubation and acceleration with industry clusters and testing centres, which will enable young companies to scale sales more quickly.

Chart 2. Employment in small enterprises, including startups, as declared by survey respondents



Source: own elaboration based on the survey results.

Chart 3. Gross revenue in small businesses, including startups, as declared by survey respondents



Source: own elaboration based on the survey results.

Financing research and development as a basis for further development of the startup ecosystem in the region

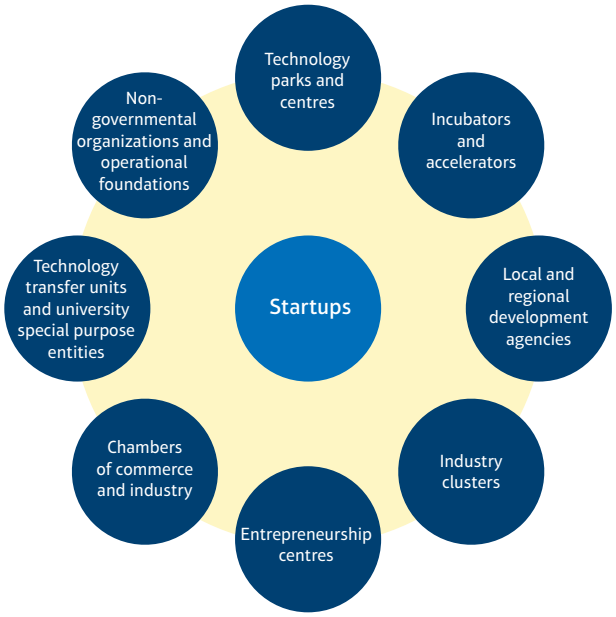
R&D expenditures are one of the pillars of the Silesian Voivodeship's innovation and create conditions for startup development. In 2023, internal expenditures on R&D activities[7] amounted to PLN 4.04 billion (7.6% of the national total, 6th place in Poland), with a growth rate of +16.5% year-on-year. Per capita, this figure was PLN 932 (+17.3%). Companies' own funds dominated (53.4%), with the corporate sector accounting for 68.9% of expenditures. Current expenditures accounted for 86.8%, and capital expenditures for 13.2%, indicating the ongoing nature of work and well-developed infrastructure.

A comparison with other regions shows slower growth than average for the whole country (19%), which increases the importance of instruments supporting implementation and collaboration between science and business. A high share of current expenses in R&D expenditures – alongside a relatively lower, yet still significant, investment component – suggests that ongoing research and development work is continuous and operational in nature, and that the infrastructure is largely already in place. From a startup perspective, this means more potential service and pilot project contracts, as well as a lower infrastructure barrier on the part of large partners. At the same time, the level of investment in R&D, amounting to 10-15%, may indicate ongoing upgrades of certain equipment and competencies, which could potentially facilitate the absorption of external technologies.

In 2024, the business investment dynamics were lower than the national average (87.4 vs. 93.3), indicating a more selective demand for solutions with a quick return and pressure for cost-effectiveness. Despite this, the region maintains a strong R&D base and industrial density, ensuring high potential for innovation recipients.

2.3 Institutions supporting the development of the startup ecosystem in the Silesian Voivodeship

The startup support ecosystem in the Silesian Voivodeship is a network of business environment institutions with diverse roles, characteristics, and scopes of operations. **Although each of them has a different function, their activities are complementary and directed towards a common goal: the development of innovative companies.** Key elements of this ecosystem include technology parks and centres, incubators and accelerators, development agencies, chambers of commerce, technology transfer units, and non-governmental organisations. Together, they form a system that provides startups with access to space, knowledge, financing, and partnerships. Furthermore, local governments play a crucial role, often providing funding for these entities.



Business environment institutions (BEIs) in the Silesian Voivodeship connect entrepreneurs, universities, and government, provide infrastructure, offer technological and business consulting services, support intellectual property protection, and prepare for market implementation. Most centres operate in the central, highly urbanised part of the region, but subregional centres also play an important role, limiting the concentration of support solely within the metropolitan area.

[7] *Internal expenditures on R&D activities include all current expenses and gross capital investments in fixed assets related to R&D activities carried out within the statistical unit during the reporting period, regardless of their sources of financing.*

2.4 Startup support infrastructure in the Silesian Voivodeship

Business infrastructure of the Silesian Voivodeship

Business infrastructure, including coworking spaces, incubators, and innovation hubs, often constitutes the first operational environment for startups, enabling them to begin operations without incurring high fixed costs. The region boasts a vast network of coworking spaces, incubators, innovation centres, and conference facilities. These enable businesses to start without high costs and provide access to consulting, industry meetings, and business partners.

Key centres include Technopark Gliwice and Rawa.Ink in Katowice. Regional event facilities, led by the International Congress Centre, facilitate the organisation of large events and project presentations. The modern business services sector is also significant, creating a market for digital solutions.

The infrastructure supporting innovation is polycentric and includes technology parks, entrepreneurship centres, and pilot initiatives such as living labs. Clusters, including those in the automotive, ICT, and medtech sectors, play an integrating role, supporting collaboration between companies, universities, and research institutes

R&D infrastructure of the Silesian Voivodeship

A well-developed research and innovation infrastructure is also of key importance. It plays a crucial role in the growth of knowledge-based startups, particularly in sectors that require access to advanced equipment and specialised expertise, such as biotechnology, photonics, electronics, medtech, and material technologies. Startups operating in knowledge-based sectors may benefit from an extensive database of universities, laboratories, test beds, and technology transfer centres. The region is distinguished by a large concentration of R&D entities and high-value research equipment.

The Silesian University of Technology has the strongest infrastructure base, operating Industry 4.0 laboratories, and numerous laboratory units available to external partners. These competencies are complemented by institutes of the Łukasiewicz Network and other research centres.

Science and technology parks, prototyping facilities, and specialised laboratories enable rapid prototyping and pre-implementation testing of solutions. Support for digital transformation is provided by, among others, the European Digital Innovation Hub Silesia Smart Systems (EDIH SILESIA).

Administrative infrastructure of the Silesian Voivodeship

Administrative infrastructure is an important component of the institutional environment for startups, providing access to information, advisory services, and formal support essential at various stages of a company's development. A wide network of public institutions operates in the region, providing legal, advisory, and informational support. It includes, among others, free legal aid points, European Funds information points, employment offices, and centres supporting internationalisation.

The Main Information Point for European Funds in Katowice and its subregional branches help companies find appropriate forms of support. Employment offices provide data on the labour market, recruitment programmes, and financial instruments related to employment. The Enterprise Europe Network and the "Business in Silesia" programmes offer export consulting and enable networking with foreign partners.

3.

Strengths and weaknesses of the startup ecosystem in the Silesian Voivodeship

3.1. Analysis of the strengths and advantages of the startup ecosystem in the Silesian Voivodeship

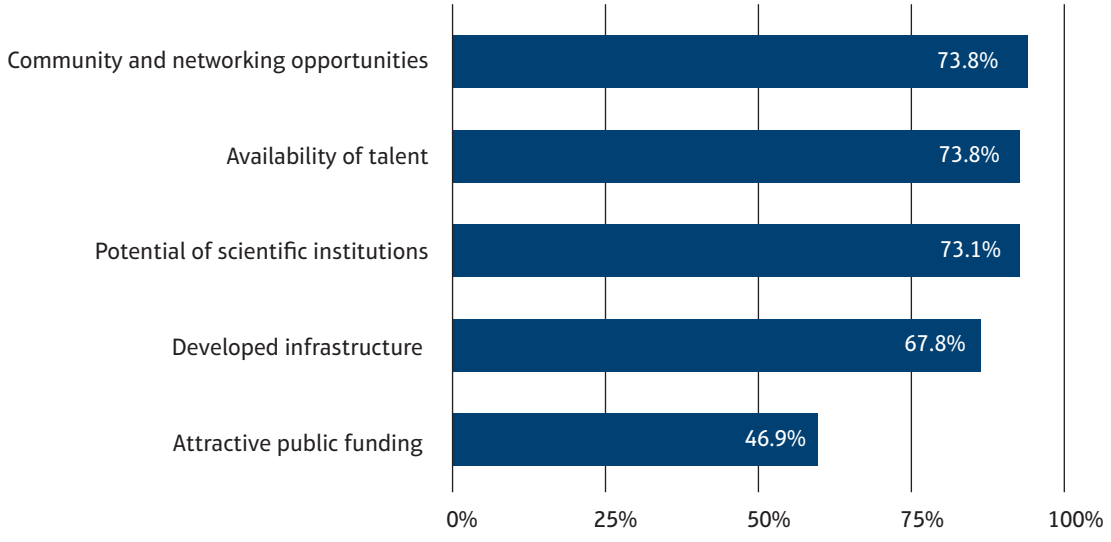
This section analyses the strengths of the startup ecosystem in the Silesian Voivodeship, identifying key areas for further growth and internationalisation. It was developed using quantitative data (including survey results among companies in the voivodeship) and qualitative data (conclusions from in-depth and focus group interviews with key stakeholders).

Among the strengths of the Silesian Voivodeship, respondents ranked "community and networking opportunities" first with 73.8% of responses, followed by "availability of talent" with 73.3%, and "potential of research units" third with 73.1%. This indicates minor differences, with only less than a percentage point of difference between individual responses. Fourth place went to "developed infrastructure". The lowest rating was given to "attractive public funding", with 46.9% of responses. Below is a description of the individual strengths identified by survey participants and identified through desk research.

Community and networking opportunities

The strength of the community and networking opportunities are crucial elements supporting enterprise development, and their importance was also emphasised during in-depth interviews. This is the highest-rated strength of the Silesian Voivodeship's startup ecosystem according to respondents, while the extensive and dense innovation support infrastructure and network of business environment institutions constitute a strong pillar of the region's startup ecosystem. In qualitative research, interviewees also emphasised that the ecosystem's strength is built on numerous hubs and initiatives, well-developed collaboration with universities, access to mentors and industry experts, and a growing selection of startup competitions and events.

*Chart 4. Strengths of the startup ecosystem in the Silesian Voivodeship**



* *The chart shows the percentage of respondents who answered, "rather yes" or "definitely yes" in response to the question "Is the indicated factor a strength of the startup ecosystem in the voivodeship?"*
Source: own elaboration based on the survey results.

> *Access to a broad network of business partners is crucial for the development of both startups and innovation-supporting organisations. This allows for not only acquiring new customers but also knowledge exchange, joint projects, and rapid testing of solutions. Supporting the region in this regard could contribute to the creation of lasting collaborative ecosystems, which are the foundation for the development of innovative enterprises.*

The latest study indicates that by 2025, the region will have 22 science and technology parks and centres[8], confirming the critical mass of BEIs and their accessibility to entrepreneurs and R&D teams. The region's specialisation profile is consistent with megatrends, and ecosystem coordination is supported by strong regional institutions, including the Silesian Centre for Entrepreneurship and industry networks[9].

Talent availability

The Silesian Voivodeship boasts a large, diverse workforce and a high level of professional services, which fosters the development of technology companies and growth companies. This advantage is supported by the functioning of the Górnośląsko-Zagłębiowska Metropolis, which comprises 41 municipalities and creates one of the largest labour markets in Poland and fosters specialisation in the IT, medical, automotive, and green technology sectors. The region benefits from a dense network of cities, infrastructure supporting SMEs and startups, the activity of the Katowice Special Economic Zone, and good transport links. Non-central locations, such as Częstochowa and Bielsko-Biała, also play a significant role, providing a source of young talent.

Access to qualified personnel is crucial for the development of the ecosystem. In the CAWI survey, 73.3% of respondents considered the availability of talent to be a strength of the region, confirming the importance of the infrastructure of technical and medical universities, R&D institutions, and the concentration of IT and engineering services as a foundation for the growth of innovative companies.

73.3%

of enterprises believe that the availability of talent is a strength of the Silesian Voivodeship

[8] *Resource, Regional Platform and Innovation Observatory of the Silesian Voivodeship, available at: https://ris.slaskie.pl/resource/705/2025-04-30_NANO%2Braport%2BSO%2BRIS%2B2023-2024.pdf (accessed 20.08.2025).*

[9] *Silesia – the power of attraction, PwC, 2022.*

The potential of scientific units

The Silesian Voivodeship has a strong knowledge and R&D activity, evidenced by increased investment and the growing role of businesses in research financing, which fosters science-business cooperation and technology commercialisation. This potential is strengthened by a network of research centres and technology parks, including the Silesian Medical Technology Park Kardio-Med Silesia, which integrates clinical and implementation research for medtech companies. The patent activity of universities and institutes (e.g. the University of Silesia, the Silesian University of Technology, and KOMAG) is a foundation for the development of spin-offs and technology transfer to enterprises. Data indicates that exclusive rights and implementations are regularly obtained, increasing the commercialisation potential of local solutions.

73.1%

of enterprises believe that the potential of scientific units is a strength of the Silesian Voivodeship

Scientific institutions are an important element of the innovation ecosystem. In the CAWI survey, most respondents rated their resources as a strength of the region. Qualitative interviews confirm universities' openness to consultations and mentoring, and greater access to laboratories and collaborative projects with scientists is expected in the future.

Developed infrastructure

Developed infrastructure is a strength of the Silesian Voivodeship, as confirmed by the CAWI survey results. The region boasts a dense network of technology parks and R&D centres, as well as stable coordination within the RSI WSL 2030 framework. At the same time, interviews indicated a lack of readily available resources for companies at the technology readiness stages (TRL) from 3 to 5, which explains why some respondents perceive limitations despite the overall supply of resources. It is necessary to integrate laboratories and fab labs into a pre-implementation offering with clear rules of use.

> *I think that if someone has an idea, because a startup is simply about an idea, there is sufficient infrastructure here in the Silesian Voivodeship, not only because infrastructure is one thing, and it is quite adequate from my perspective, but also an institutional and supportive environment in the form of other startups, but also other entrepreneurs who provide services for startups, for example accounting services or other specialised services related to research.*

The attractive location of the Silesian Voivodeship is a significant advantage for business development. According to respondents, the proximity of Katowice, the Katowice International Airport, and foreign markets, combined with the opportunity to benefit from export support programmes such as Go to Brand, favours companies' expansion into international markets.

Availability of specialist services

A key element of the ecosystem's strength is the level of development of the modern business and professional services sector, which ensures demand for knowledge-based services and feeds the talent market. In 2024, Katowice and the GZM Metropolis were among the five most important locations for this sector in Poland, with approximately 36,000 jobs and over 150 BPO, SSC, IT, and R&D centres. Between 2018 and 2023, employment in the sector increased by approximately 60%[10]. The 2023 and 2024 editions of the Association of Business Service Leaders (ABSL) reports confirmed the rapid pace of employment growth and the growing specialisation of knowledge-based services, which strengthens the demand for innovation and cooperation with startups in the region[11, 12]. The high saturation of professional services and the diversification of competencies are therefore a constant advantage of the Silesian Voivodeship compared to other parts of the country.

Startup financing policy

The stable financial framework of the 2021-2027 perspective strengthens the innovation ecosystem. The European Funds for Silesia 2021-2027 programme has a total allocation exceeding EUR 5 billion, of which approximately EUR 2.2 billion comes from the Just Transition Fund. These funds are aimed at modernising the economy, investing in innovation and human capital, and diversifying the economic structure of post-mining areas, which directly strengthens the conditions for startup projects in the region[13]. From an operational perspective, updated Detailed Priority Descriptions indicate dedicated actions for enterprises, including research, development, and competence transformation. Long-term ecosystem coordination, including the development of the Regional Innovation Observatory under the PPO WSL 2030 project, ensures monitoring of the specialisations and innovation needs of the economy and involves SO RIS Network partners in the process of designing development instruments for the years 2023-2025[14].

The Marshal Office of the Silesian Voivodeship also has funds returned from previous EU perspectives, which can be used to implement support programmes and selected projects important for the region.

Enterprises, including startups from the region, also have access to funds at the national and European level, from FENG (European Funds for Modern Economy), FENiKS (European Funds for Infrastructure, Climate, Environment), FERC (European Funds for Digital Development), FERS (European Funds for Social Development) and others at the national level run by PARP, ARP, NCBR, PFR, KUKE, BGK, and other institutions.

The assessment of public funding as an asset is conditional. From the interviewees' perspective, instruments are fragmented and poorly suited to early-stage and hardware projects, and procedures can be time-consuming. Findings from primary research suggest greater emphasis on the availability of implementation grants and vouchers for rapid pilots with industrial customers, as well as simplified paths for small teams and advisory support at the start.

[10] *Key sectors, Investors assistance department, available at: https://invest.katowice.eu/en/key-sectors/ (access 25.08.2025).*
[11] *Business services sector in Poland 2024, ABSL, available at: https://2024.abslsummit.com/files/settings/20240613144141-business-services-sector-in-poland2024.pdf (accessed 25.08.25).*
[12] *The modern business services sector in Katowice, ABSL, available at: https://invest.katowice.eu/wp-content/uploads/2023/11/Raport_Katowice_2023_PL_ABSL.pdf (accessed 25.08.2025).*
[13] *Basic information, European Funds for Silesia 2021-2027, available at: https://funduszeue.slaskie.pl/web/guest/w/podstawowe_informacje_ (accessed 25.08.2025).*
[14] *PPO WSL 2030. Establishment of the Regional Innovation Observatory, European Funds for Silesia 2021-2027, available at: https://funduszeue.slaskie.pl/web/guest/w/ppo_wsl_2030_utwarz_regionalnego_obserwatorium_innowacji (accessed 25.08.2025).*

3.2. Main conclusions and summary

- One of the main advantages of the startup ecosystem in the Silesian Voivodeship is the strong community and networking opportunities. Respondents indicated that access to a broad network of business partners, mentors, and industry experts is crucial for the development of innovative companies.

- The region boasts a large talent base and a high level of professional services. Numerous technical and medical universities, a dense network of R&D institutions, and specialisation in IT, medical, and green technology sectors support the development of the startup ecosystem.

- There is also a strong potential of scientific units and research and development infrastructure. Patent activity at universities and institutes, access to laboratories and technology transfer centres, and science-business cooperation are among the strengths of the region's ecosystem. Other advantages include a well-developed business and transportation infrastructure – a dense network of technology parks, conference centres, modern offices, and the region's excellent transport accessibility.

4.

Weaknesses and barriers to the startup ecosystem in the Silesian Voivodeship and the possibilities of overcoming them

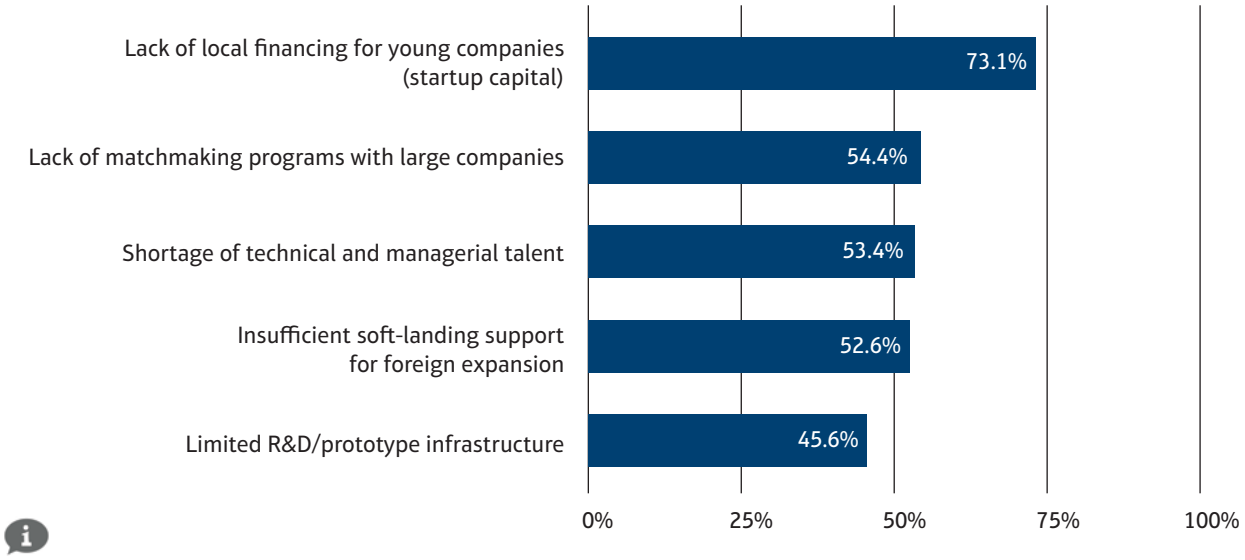
4.1. Weaknesses and barriers to the startup ecosystem's operations

The purpose of this section is to present the weaknesses of the startup ecosystem in the Silesian Voivodeship and the barriers limiting its development and internationalisation of companies. Areas hindering growth are identified, based on quantitative data (surveys of companies in the voivodeship) and qualitative data (in-depth interviews, group interviews, and desk research).

The most significant barrier to the development of the startup ecosystem in the Silesian Voivodeship is the lack of local financing for young companies (73.1%), which hinders access to capital at an early stage. Other barriers include the lack of matchmaking programmes with large companies (54.4%), a shortage of technical and managerial talent (53.4%), and insufficient support for international expansion. Limited R&D infrastructure was cited least frequently (45.9%). Interviews also highlighted the concentration of initiatives in large cities, omitting other parts of the region, and the reluctance of large companies to cooperate with startups due to the risk of failure.

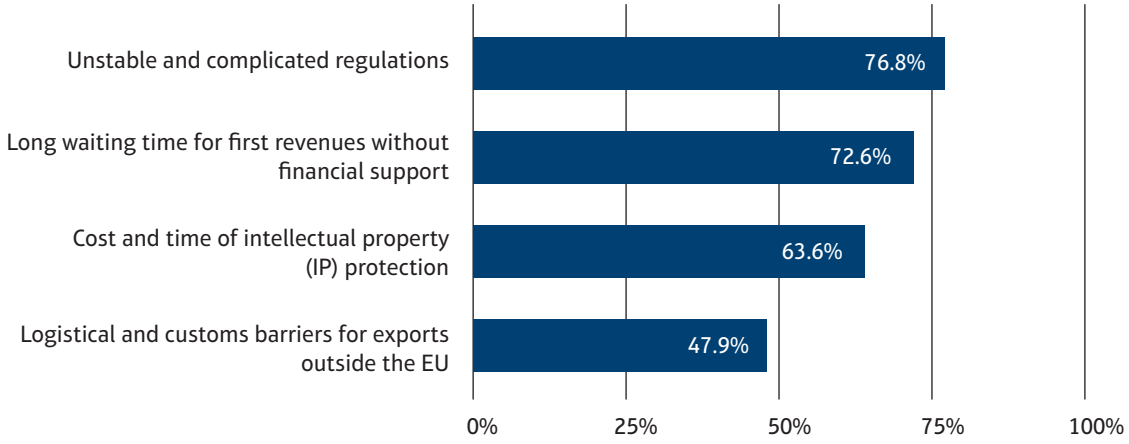
At the national level, the key barriers are unstable and complex regulations (76.8%). Other barriers include: long waiting times for initial revenues in the absence of financial support (72.6%), the cost and duration of intellectual property protection (63.6%), and logistical and customs barriers when exporting outside the EU (47.6%). The following were also highlighted In qualitative studies: excessive bureaucracy, complicated administrative procedures, limited access to early-stage capital, and a fragmented support system, which makes it difficult to navigate available programmes.

*Chart 5. Barriers to startup activity in the Silesian Voivodeship – regional level**



* *The chart shows the percentage of respondents who indicated the answer "moderate barrier" or "strong barrier" in response to the question "How do you assess the barriers to startup activity at the provincial level - which can be addressed with regional policy?"*
Source: own elaboration based on the survey results.

*Chart 6. Barriers to startup activity in the Silesian Voivodeship – national level**



* *The chart shows the percentage of respondents who indicated the answer "moderate barrier" or "strong barrier" in response to the question "How do you assess the barriers to startup activity at the national level - which can be addressed with national policy?"*
Source: own elaboration based on the survey results.

Financial and capital barriers

Financial barriers are the most frequently cited limitation to startup development in the Silesian Voivodeship. Access to early-stage capital remains a key challenge for new companies – local financing sources are limited, and available debt instruments and mezzanine funds[15] require high entry thresholds (approximately PLN 10 million), which excludes most young companies. The capital gap slows the transition from prototype to sales and limits the financing of pilot projects. This problem is exacerbated by the low share of investment in R&D expenditures (13.2% compared to 15.5%[16] in the Masovian Voivodeship), which limits the development of research and prototype infrastructure, especially in the hardware and medtech industries.

Startup representatives pointed to a concentration of investors in Warsaw, a lack of local VC funds and business angels, and insufficient access to mentoring. The Polish VC market is characterised by a predominance of large deals and a decline in the number of rounds, which makes raising seed capital difficult.

This diagnosis is supported by data from PFR Ventures and MamStartup, which show a decline in the number of active local VC funds from over 140 to approximately 30 and a drop of over 60% in the number of seed rounds, while the value of individual deals remains high and investors are concentrated in hubs such as Warsaw and Krakow[17, 18]. A long period without revenue, associated with validating solutions and building sales, increases risk. The primary research strongly emphasised the need for informational and advisory support at the early stages of company development, as well as financing for mini-pilots that reduce risk during initial contracts.

Additional barriers include high security requirements in public instruments, lengthy application evaluations, companies' limited legal forms, and weak ties to foreign investors. Scaling companies face difficulties accessing testing infrastructure and cultural barriers in relationships with large corporations which prefer established partners.

Legal and procedural barriers

Unstable and complex legal regulations significantly increase operational risk and operating costs. The CAWI study identified them as one of the main barriers at the national level. Regulatory volatility hinders rapid testing in urban environments, despite availability of EU funding.

[15] *Mezzanine financing is a hybrid form of business financing that combines the features of debt and equity.*
[16] *Research and development activities in Poland, Central Statistical Office, 2023.*
[17] *Map of Polish active VC funds. July 2025 edition, MamStartup, 2025, available at: https://mamstartup.pl/mapa-polskich-aktywnych-funduszy-vc-edycja-lipiec-2025-pawel-maj/ (accessed 12.11.2025).*
[18] *Accelerating the expansion of Polish startups – key actions for the technological ecosystem after reading the Dealroom report, Polish Development Fund, 2025, available at: https://pfr.pl/artykul/przyspieszenie-ekspansji-polskich-startupow-kluczowe-dzialania-dla-ekosystemu (accessed 28.10.2025).*

Qualitative studies recommended the creation of regulatory sandboxes (legal frameworks that allow businesses to operate in a secure testing environment to experiment with a given project or service under relaxed regulations) and so-called testbeds (i.e., specially designed spaces or environments where new solutions, technologies, or services can be tested and evaluated before full implementation) with simplified procedures and clear accountability rules, which would accelerate solution validation and market entry of startups.

An additional challenge is the risk associated with industrial property protection. Costly and lengthy procedures for obtaining IP protection (patents, trademarks) delay commercialisation – particularly in medtech and hardware – where certification and testing are required. Interviewees advocated for strengthening contact points at universities, shortening advisory paths, and funding for IP applications.

Transitioning from TRL 6 to TRL 9 requires meeting a number of legal requirements: compliance with EU standards, certification, securing intellectual property rights, and meeting safety and project accountability requirements. For SMEs, these processes are costly, time-consuming, and require specialised consulting[19].

Competency and technological barriers

Competency gaps primarily concern rapid prototyping, product management, and B2B sales. The most effective are mentoring programmes with practitioners and short industry courses for small teams, supplemented by offerings from universities and business institutions. Such initiatives improve team quality and shorten the time from concept to first implementation.

In the area of practical education, gaps in vocational education are diagnosed[20] – insufficient facilities, a lack of specialised equipment, and limited use of laboratories. International cooperation in education is often fragmented, limiting access to modern technologies and practices. A skills gap slows the development of startups, particularly in the areas of automation, data processing, and software engineering, as well as in the medtech and hardware industries, which require skills related to certification, testing, and system integration. Below are the key areas of skills and technological barriers facing the Silesian Voivodeship.

1 Limitations in R&D activities

Problem causes
- Low intensity of R&D work causes by insufficient funding
- Share of R&D personnel in employment below 1%
- Dominance of researchers (69.7%) with a very low share of technicians and laboratory support
- Limited access to infrastructure for testing and prototyping

Effects
- Lower number of prototypes, validations, and protected IP results for clients
- Extended product development cycle in startups

Consequences for the region
Slow diffusion of innovation inSMEs, high technical barriers and certification costs

2 Limited level of digital transformation in the SME sector

Problem causes
- Low share of companies employing ICT specialists (24.4%), creating a competence gap
- Insufficient integration of ICT systems and structures supporting digitalisation
- Lack of systemic programs supporting digitalisation

Effects
- Slowed digital transformation
- Limited scaling of business models based on digital solutions
- Reduced competitiveness of SMEs in value chains and international markets

Consequences for the region
Risk of losing competitive advantage due to poor digital infrastructure

3 Education misaligned with startup and new economy needs

Problem causes
- Decline in student numbers (-0.7% annually)
- Universities mainly educate specialists, not entrepreneurs
- Limited and ad hoc support for student entrepreneurship
- Lack of systemic cooperation between universities

Effects
- Limited talent pool in key technology startup areas
- Lower dynamics of innovative firm creation in the academic sector

Consequences for the region
Possible weakening of the innovation ecosystem in the future and increased of competence gaps for the new economy

[19] *Regional Innovation Strategy of the Silesian Voivodeship 2030, Regional Innovation Platform and Observatory of the Silesian Voivodeship, 2021.*
[20] *Silesia – the power of attraction, PwC, 2022.*

Institutional and structural barriers

Innovation activity rates in the Silesian Voivodeship remain low – in 2022, innovation expenditures were incurred by 18.9% of industrial companies and 13.9% of service companies[21], which does not ensure a critical mass of recipients of startup solutions. Reducing the number of innovation centres[22] reduces the availability of consulting services and weakens networking at the national level, hindering the matching of startups with investors and technology partners.

There is a lack of programmes that facilitate collaboration with large enterprises, which limits the ability to implement pilot projects and obtain references. Although open innovation initiatives exist, they require strengthening. Respondents point to the need for a regional programme aimed at mapping of entrepreneurs' needs, conducting rapid thematic calls, and oferring support for pilots combined with procurement.

Some entrepreneurs outside metropolitan areas perceive support offerings as concentrated in large centres, and formal requirements in competitions as a significant barrier to accessing programmes. Respondents point to a lack of clear recruitment rules and document lists. The solution is development of a first point of contact for the entire voivodeship, simplified paths to programme entry, and activities that enhance competencies in absorbing funds.

Limited startup support infrastructure

In recent years, the infrastructure supporting innovation has weakened – the number of innovation centres has decreased by eight, and entrepreneurship centres by three[23]. This reduces companies' access to development, internationalisation, and technology transfer services. Innovation centres in the Silesian Voivodeship are also less well-represented in national surveys, which may indicate limited visibility and cooperation at the national level. The lower density of the support network increases the risk of disruptions in development paths and hinders establishing contacts with technology partners and investors.

Survey participants pointed to the lack of simple first-line contact mechanisms for new businesses and the fragmented information about available programmes, which more often reaches businesses in the central part of the voivodeship. They pointed to the mismatch between incubation programmes and the needs of young companies, administrative barriers to hiring foreign specialists, and difficulties in obtaining basic startup financing. Companies outside the metropolitan area highlighted the shortage of talent and the migration of young specialists to larger centres such as Krakow and Warsaw. Large companies, on the other hand, reported difficulties in finding reliable partners in the region and the high perceived risk of collaboration.

[21] *Innovative activity of enterprises in 2020-2022, Statistics Poland, 2023.*
[22] *Innovation centres in Poland: potential and development directions, SOOIPP, 2024.*
[23] *Innovation centres in Poland: potential and development directions, SOOIPP, 2024.*

4.2. Main conclusions and summary

- **The biggest barrier to the development of the startup ecosystem in the Silesian Voivodeship is the lack of local financing for young companies (startup capital).** Limited access to capital at early development stages and an insufficient number of local VC funds and business angels hinder business scaling. In this context, the development of seed funds, activation of business angels, grant instruments and micrograntsas well as advisory support in raising capital, are desirable.

- **The lack of matchmaking programs with large companies limits opportunities for pilots and implementations.** Startups from the Silesian Voivodeship report difficulties in establishing cooperation with large enterprises, which hinders solution validation and acquiring first customers. Potential solutions to this barrier include creating collaboration platforms, first customer programs, as well as supporting regional accelerators and pilots with industrial recipients.

- **The complexity and instability of regulations, along with the high costs of intellectual property (IP) protection** – costly and time-consuming legal, certification, and patent procedures, especially in regulated industries. In this context, strengthening contact points at universities and technology transfer centres, providing legal advisory services, and subsidizing patent applications are desirable.

- **Among the barriers to the development of the startup ecosystem in the Silesian Voivodeship is also the limited R&D and prototyping infrastructure** – the lack of easily accessible laboratories that enable work on projects. A solution could be mapping and sharing R&D infrastructure as well as developing so-called living labs.

- **Additionally, the dispersion of information about support programs was highlighted, as well as regional inequalities in access to services provided by business support institutions and public administration.** Interviews and surveys indicate that some entrepreneurs outside the metropolitan area perceive the support offer as primarily targeted at the metropolis. Many respondents express uncertainty regarding recruitment rules and the list of required documents. A solution is the establishment of a One-Stop-Shop for the entire voivodeship, clear entry paths to programs, and actions aimed at improving competencies in absorbing funds.

5.

Internationalisation potential

5.1. The potential of foreign markets for startups from the Silesian Voivodeship

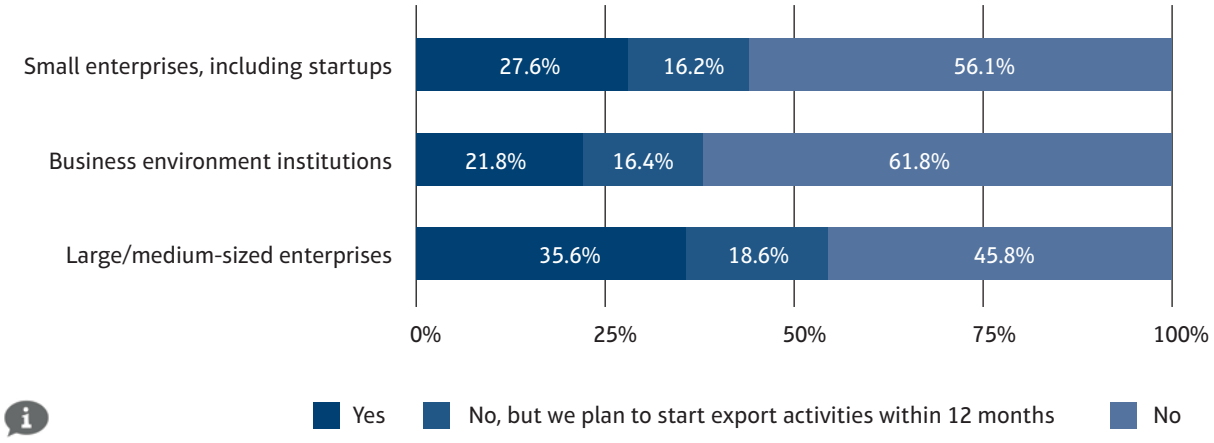
Data on the value of exports from the Silesian Voivodeship confirm the region's strong position in foreign sales. In 2022, the region accounted for 11.1% of Poland's foreign sales (ranking second nationally). In exports to countries outside the EU, its share was 7.32%, ranking it third in Poland, while in intra-EU deliveries, its 12.33% share secured first place, tied with the Masovian Voivodeship[24]. The largest recipients of products from the voivodeship are primarily Germany, with an export value of approximately PLN 43.75 billion, followed by Czechia with PLN 23.58 billion, Italy, and France. Slovakia, Austria, Hungary, the UK, Spain, and the Netherlands also make up the top ten[25].

Internationalisation is a key factor in the maturity of the startup ecosystem and the competitiveness of companies in the market. The CAWI study examined which categories of entities conduct international sales and to what extent they do so. The chart below presents the results, allowing for a comparison of the export activity of startups, small businesses, and other ecosystem participants. Analysis of this data allows for an assessment of which groups of entities are most open to international markets, and which require additional support in this area.

The structure of the responses indicates that nearly 44% of small businesses, including startups from the Silesian Voivodeship, are either already selling abroad or plan to begin exporting within the next year. The scale of internationalisation is significantly lower than in the case of large and medium-sized companies, which indicates the need for further competency-based and operational support for startups in preparing to enter foreign markets. Qualitative research (individual interviews and focus groups) also confirms the need to equip small businesses with practical competencies enabling internationalisation.

When designing support instruments for startup internationalisation, it's worth segmenting pro-export activities. For SMEs and startups with high export intensity, it's worth developing operational support and matchmaking with foreign partners. Companies at an early stage of expansion need rapid pilots with initial clients and certification services. Consulting service packages and programmes connecting entrepreneurs with foreign customers will be appropriate for business environment institutions.

Chart 7. Foreign sales by particular types of entities



Source: own elaboration based on the survey results.

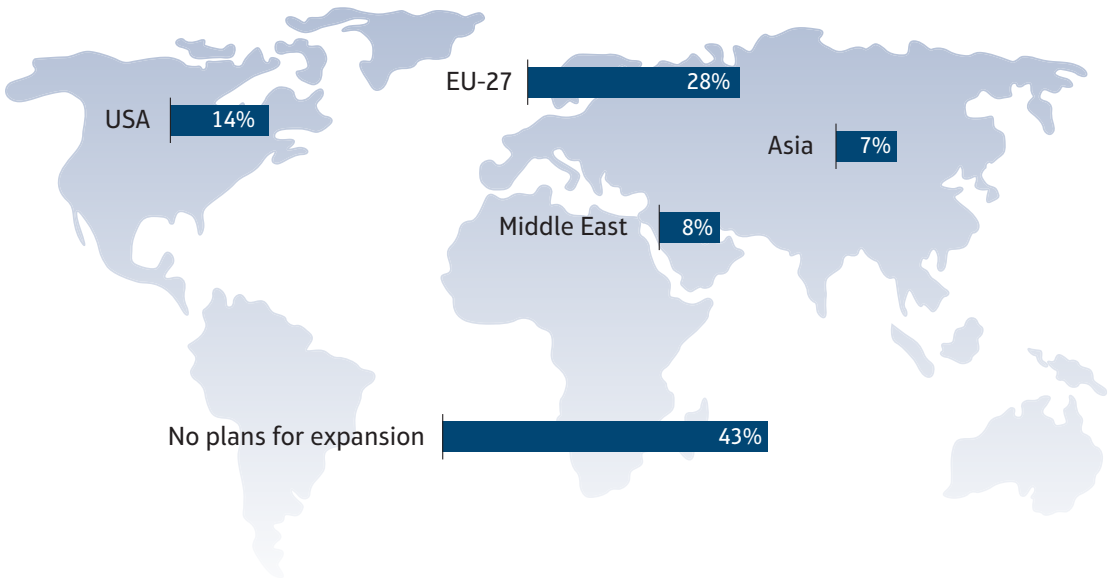
[24] *Report on the state of the voivodeship for 2024, Marshal Office of the Silesian Voivodeship, 2025.*
[25] *Report on the state of the voivodeship for 2024, Marshal Office of the Silesian Voivodeship, 2025.*

Geographical directions of expansion

As part of the survey, businesses in the Silesian Voivodeship were also asked about their geographic expansion priorities. Respondents indicated whether they planned to enter foreign markets and which areas they considered their top targets. Potential destinations included the EU, the US, Middle Eastern markets, and selected Asian countries.

The survey showed that 43% of small enterprises, including startups, do not plan expansion into the indicated markets. EU markets dominate among those planning expansion, followed by the US, the Middle East, and Asia. For the administration, this means two paths: (1) supporting startups and small businesses in their international expansion into EU markets through advisory services on regulations, logistics, and B2B sales; (2) preparing less active companies through export pre-incubation, matchmaking with large customers, and support in initial transactions.

Figure 2. Survey responses from representatives of small enterprises and startups regarding planned directions for international expansion



Source: own elaboration based on the survey results.

5.2. Opportunities and barriers to foreign expansion

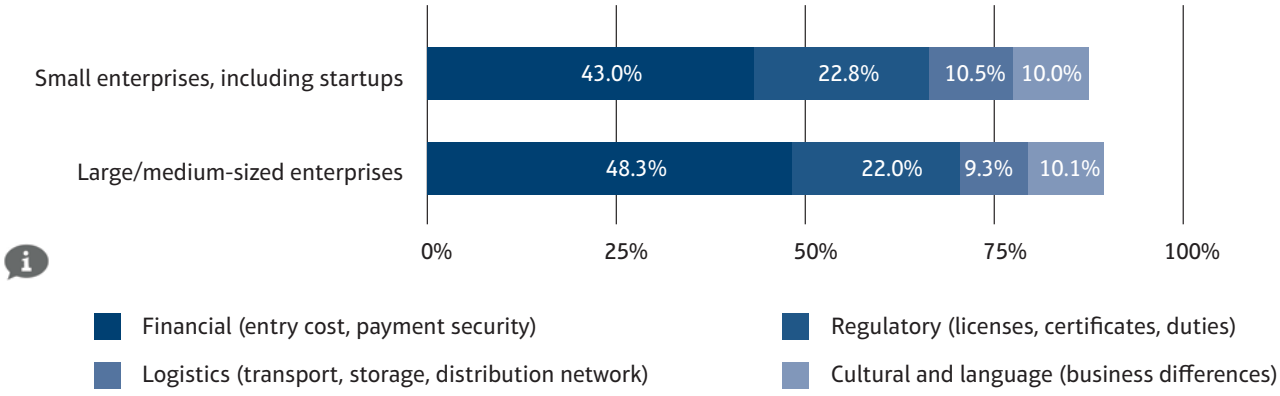
The Silesian Voivodeship has an extensive internationalisation support system. The core of the project is the InterGlobal project, implemented by the Upper Silesian Fund (UF) and the Silesian Voivodeship as part of the European Funds for Silesia programme. It includes export workshops, an Internationalisation Academy, export vouchers, trade missions, and a network of foreign advisors, creating a coherent package of services for SMEs and young technology companies. Among the region's strengths that foster internationalisation are its transport infrastructure – the TEN-T hub and the Katowice International Airport, which is experiencing growing cargo traffic.

On the other hand, to fully exploit the potential of international expansion, actions aimed at counteracting barriers to foreign expansion are necessary. The study divided barriers to foreign market entry into financial, regulatory, logistical, and cultural/linguistic barriers, separately for different types of companies.

Financial barriers (entry costs and payment security) remain the biggest barrier for both startups and small businesses, as well as large and medium-sized enterprises – with 43% and 48.3% of responses, respectively. Regulatory barriers (licenses, certificates, customs duties) rank second – with 22.8% and 22%, respectively. In this context, it is recommended to strengthen bridge financing during the export preparation phase, along with advice on certification, intellectual property protection, and compliance with target market regulations. Logistical barriers (transport, warehousing, distribution network) and cultural and language barriers rank third and fourth (approximately 10% of responses in both groups). To address logistical barriers, it is worth connecting companies with partners operating in supply chains within and outside the EU, including through the Enterprise Europe Network and trade missions. In the area of cultural and language barriers, soft-landing support and short, highly practical training sessions for owners and managers on customs procedures, documentation, and trade negotiations will be useful. Such needs were widely articulated in qualitative research and surveys, including by respondents from the SME and startup sectors.

Another barrier to internationalisation for startups is the shortage of experienced employees in the field of foreign trade. This limits the ability to independently design entry strategies, conduct contract negotiations, and manage currency and regulatory risks.

Chart 8. Assessment of individual export barriers among survey respondents



Source: own elaboration based on the survey results.

> *We would most appreciate training – specific and "for entrepreneurs". I see mostly postgraduate studies and soft skills in the offers, but we need practical experience: how to develop a marketing strategy in foreign markets, what export procedures are, what certificates and documents to submit to customs, what to look for during inspections.*
>
> *This involves training for smaller companies that are truly venturing into exports, led by people in the industry (in our case: furniture) who understand the practicalities of the process. At first, I struggled through the formalities myself – no one was clear about what would be needed and when.*

5.3. Support for public institutions in the internationalisation process

A key initiative supporting the international expansion of entities from the Silesian Voivodeship is the InterGlobal project, titled "Internationalisation of SMEs in the Silesian Voivodeship". InterGlobal is currently one of the key, systemic projects supporting the internationalisation of SMEs in the Silesian Voivodeship. It is jointly implemented by the Silesian Voivodeship and the Upper Silesian Fund under the European Funds for Silesia 2021-2027 programme (Priority FESL.01: European Funds for Smart Growth, Measure 1.10: Export Promotion and Internationalisation of SMEs). Its goal is to develop and strengthen the internationalisation processes of companies in the region, and the project itself is a continuation of two previous initiatives: InterSilesia and GlobalSilesia. The financial scale is significant – the total value reaches approximately EUR 24.9 million (approximately PLN 108 million), of which over EUR 21.1 million (approximately PLN 91 million) comes from the European Regional Development Fund (ERDF). The core of the InterGlobal Project is a comprehensive export development programme for SMEs – from companies just considering exporting to those already present in foreign markets. It includes, among other things, the services of foreign advisors, informational meetings, export workshops, the Internationalisation Academy, participation in international and domestic trade fairs, trade missions, specialised consulting services, and extensive networking and promotional activities. One of the key instruments of the project is support in the form of export vouchers, intended primarily for participation in international trade fairs and exhibition events.

From the perspective of businesses, InterGlobal significantly lowers the barriers to entry into foreign markets by financing the costs of trade fair stands, travel, logistics, and promotional materials, while also providing expertise in law, logistics, certification, international marketing, and building relationships with partners. The project has a strategic dimension for the entire region, supporting the reconstruction and strengthening of the Silesian Voivodeship's position in domestic exports, counteracting the trend of the region's declining share in key economic indicators, and systematically building the brand of Silesian enterprises in foreign markets. InterGlobal can be described as the region's flagship export initiative, as it combines financial instruments (vouchers), substantive activities (training, consulting), analytical tools (foreign trade observatory), and intensive foreign promotion, creating a coherent, high-value ecosystem supporting the internationalisation of SMEs from the Silesian Voivodeship[26, 27].

The amount of funding under the export vouchers from the InterGlobal project may amount to as much as

PLN 180,000

[26] *InterGlobal Project, Business in Silesia, available at: https://invest-in-silesia.pl/content/projekt-interglobal (accessed 24.11.2025).*

[26] *InterGlobal – internationalization of SME enterprises from the Silesian Voivodeship, European Funds for Silesia 2021-2027, available at: https://funduszeue.slaskie.pl/web/guest/w/interglobal (accessed 24.11.2025).*

5.4. Main conclusions and summary

- **The Silesian Voivodeship has strong export and internationalisation potential.** The region is the second-largest exporter in the country, has a well-developed transport infrastructure (road network, logistics centres), and its proximity to foreign markets (Germany, Czech Republic, Slovakia) also supports exports. The internationalisation of startups and SMEs is crucial for increasing the region's competitiveness.

- **The main barriers to internationalisation for startups in the voivodeship are a lack of export competencies, regulatory complexity, and logistical challenges.** Companies point to a lack of export experience, difficulties with certification, customs barriers, and limited access to advisory services and financing for export activities. Effective internationalisation requires developing export competencies among entrepreneurs and employees. Training, consulting, mentoring, and support in certification, legal matters, and international market marketing are needed.

- **The region has an institutional framework supporting internationalisation, but it requires better coordination and promotion.** In the Silesian Voivodeship, projects and initiatives such as InterGlobal and Enterprise Europe Network operate, but companies' awareness and use of these tools are limited.

- **A high level of digitisation and the development of e-commerce facilitate entry into foreign markets.** Cross-border e-commerce enables testing new markets without the need for physical presence, and marketplace platforms are an effective sales channel. For more on this topic, see Chapter VII: E-commerce as a catalyst for the development of the startup ecosystem in the Silesian Voivodeship.

6.

Financing opportunities for startup development in the Silesian Voivodeship

6.1. Sources of financing

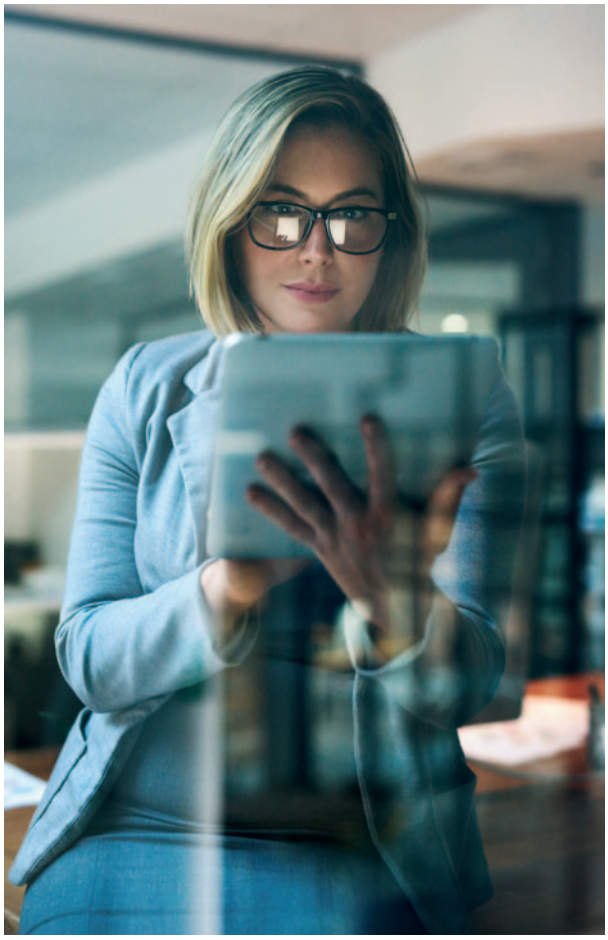
Financing for innovation and business development can come from various sources – public, private, or hybrid, combining both models. Public funds offer large budgets and a broad range of topics, supporting research, digitisation, and infrastructure, among other things. Private financing provides flexibility, quick decisions, and access to capital and know-how, often through venture capital funds or business angels. Blended instruments, on the other hand, enable risk diversification and support the development of growth-phase projects, combining the benefits of both approaches.

The startup financing ecosystem in the Silesian Voivodeship relies primarily on EU and national funds, supplemented by private capital. Programmes managed centrally by the EU (including Horizon Europe and CEF), nationally (FENG, FERC, FERS, FEnIKS, KPO), and regionally (European Funds for Silesia 2021-2027) create a coherent map of instruments for companies, universities, and local governments. They combine funding for research, digitisation, infrastructure, energy transformation, internationalisation, and skills development.

	Public financing	Private financing	Instruments combining public and private financing
Available sources and programmes	• Horizon Europe (EIC Pathfinder, Accelerator, EIT) • CEF (infrastructure projects) • National programmes: FENG, FERC, FERS, FEnIKS, KPO • Regional: European Funds for Silesia 2021-2027 (ERDF, ESF+, JTF)	• VC funds • Business angels • Corporate investment funds (CVC)	• PFR Ventures funds (Starter, Biznest) • Silesian Voivodeship Transformation Fund • Accelerators (e.g. Gliwice ASI) • Partnerships within Horizon Europe
Advantages	• Large budgets, wide range of topics • Repayable and subsidy instruments • Lower cost of capital	• Access to mentoring and networking • Flexibility, quick decision-making • Access to know-how • Scalability and swift access to global markets	• Risk diversification • Access to capital and know-how • Public funds attract private capital
Challenges	• Complex procedures, high formal requirements • High own contribution and security • Low flexibility in changing the scope of the project	• Shortage of local early-stage VC funds • Preference for companies with revenues • Higher pressure for rapid growth and exit	• Decrease in the number of active funds after investment periods • Complicated structure of contracts and settlements

Public financing

The Horizon Europe programme is a key source of support for R&D and innovation projects, particularly for consortia implementing demonstrators and pilots. The European Innovation Council (EIC) - Pathfinder, Accelerator and European Institute of Innovation and Technology (EIT) instruments play an important role, strengthening cooperation between science, business, and education. The Connecting Europe Facility (CEF) instrument supports large infrastructure projects in transport, energy, and digitisation. At the national level, FENG finances research and technological transformation, FERC finances the digitisation of public services, FERS finances competence-based projects, and FEnIKS finances infrastructure investments. KPO complements these activities in the areas of energy, digitisation, and economic resilience. The regional European Funds for Silesia 2021-2027 programme (approximately EUR 5.14 billion) supports R&D, digitisation, innovation in SMEs, and innovation infrastructure, also offering financial instruments implemented by BGK and the EIB. Experience from the previous perspective demonstrates the strong support of the ERDF and POIR for R&D, infrastructure, and innovation in SMEs.



Private financing

The region is home to a group of active private and corporate investors, including the TDJ Group and its TDJ Pitango Ventures fund, as well as business angels. The presence of such entities provides access to capital, mentoring, and a network of contacts, while local ecosystem events facilitate the establishment of relationships. At the same time, research indicates a shortage of local VC funds and angel investors investing at very early stages, as well as relatively low individual investment amounts in public-private funds. Startups representatives are often forced to seek financing outside the region, and even outside of Poland, and investors prefer companies with revenues. As a result, projects at the idea and prototype stages have limited opportunities to raise market capital. In response, there is a call for the establishment of a regional seed fund, which would operate closer to the business and adopt a more flexible approach to risk, as well as for simplifying the regulatory environment for corporate funds.

Instruments combining public and private financing

RSI WSL 2030 emphasises the importance of seed-stage venture capital, supported by technology parks, accelerators, and university special-purpose vehicles. The Gliwice ASI Technology Accelerator operates at the regional level, whereas the PFR Starter seed fund operates at the national level. Following the decline in the number of active vehicles, capital supply has decreased, but access to VC has a nationwide scope, with funds present in the region (e.g. TDJ Pitango Ventures). The Silesian Voivodeship Transformation Fund and PFR Ventures programs offer co-investments and convertible loans, increasing the availability of financing paths from the proof-of-concept stage to growth rounds. Business angels operate primarily in nationwide networks (COBIN Angels, Polish Angels). The importance of building relationships between business angels, funds, and startups is reinforced by events held in Katowice, such as the European Economic Congress and its accompanying EEC Startup Challenge.

6.2. Credits and loans for business development

The Silesian Development Fund and the Upper Silesian Fund are regular providers of repayable instruments and advisory services in the region, offering loans, guarantees, and substantive support, particularly for companies planning growth and international expansion. These instruments complement activities implemented under the regional programme.
The FI4INN project aims to tailor new loan and equity products to the needs of innovative SMEs and startups.

BGK lines and instruments, as well as financial instruments within the regional programme managed by the EIB Trust Fund, play a significant role in the structure of repayable funds.

Preferential loans co-financed by the EIB, as well as guarantees and financing under InvestEU, reduce the cost of capital, increase the availability of investment loans and leasing, and complement regional grants. From the entrepreneurs' perspective, specific guarantee agreements concluded by the European Investment Fund with banks operating in Poland are of key importance. The EIB Group's activity in Poland, including infrastructure and energy projects, also improves investment conditions in the Silesian Voivodeship.

6.3. Problems with access to capital in early stages of development and crowdfunding as an alternative form of financing

The largest capital gap in the region concerns the transition from R&D to implementation (TRL 6-9), where proof-of-concept work funding, research service vouchers, intellectual property protection support, and coverage of certification costs are needed. Without these elements, projects fail to achieve the technical and organizational maturity required by capital investors, which delays market entry and reduces the quality of the investment project pipeline in the region.
The ecosystem suffers from a shortage of local funds and business angels, and in regulated industries (e.g. medtech), high certification costs further raise the entry barrier.

Crowdfunding, based on EU and Polish Financial Supervision Authority regulations, is becoming an alternative – primarily through share issues and loans on licensed platforms.
In the region, the optimal approach is to combine crowdfunding campaigns with legal and investment advice, as well as instruments from the Silesian Development Fund and the Upper Silesian Fund. This allows for streamlining the ownership structure, preparing the company for subsequent rounds with larger capital, and simultaneously utilising crowdfunding as a tool for testing market interest and building a community around the product.

6.4. Main conclusions and summary

- **In the Silesian Voivodeship, a wide range of funding sources for startup development is available, including EU, national, and regional funds.** These include programs such as: European Funds for Silesia 2021–2027, FENG, FERC, Horizon Europe, KPO, as well as regional and metropolitan instruments.

- **Public support instruments, however, are fragmented and often poorly aligned with the needs of the smallest companies as well as hardware and medtech projects.** Entrepreneurs report issues such as high own-contribution requirements, time-consuming procedures, and a preference for projects with a ready prototype or existing revenues.

- **At the same time, the biggest financial barrier for startups is the capital gap at the early stages of development (pre-seed, seed).** The lack of local VC funds and business angels, high formal requirements in grant programs, and limited access to micro-capital for idea validation and hiring the first employees hinder business growth.

- **More effective use of available resources requires better coordination of instruments and advisory support for startups.** Information points, mentoring, document templates, assistance in preparing applications, and integration of regional programs with private funds are needed.

7.

E-commerce as a catalyst for the development of the startup ecosystem in the Silesian Voivodeship

E-commerce has become one of the main drivers of digital economy growth in Poland and worldwide in recent years. Changes in consumer behaviour, accelerated by the COVID-19 pandemic, have led to a rapid increase in the importance of online sales. Solutions such as omnichannel sales, artificial intelligence, process automation, and offer personalization are being used more and more frequently.

Poland is one of the fastest-growing e-commerce markets in Europe, fostering the emergence of new companies and business models. In the Silesian Voivodeship, thanks to its strong technological base and the large number of enterprises using digital solutions, e-commerce can support innovation and improve the competitiveness of the region's economy. For young companies, this means a shorter path from idea to initial revenue and the opportunity to conduct international sales. For government and business institutions, it is a tool for accelerating the digitisation of SMEs.

The Polish e-commerce market continues to grow, albeit at a slower pace than during the pandemic. The share of online sales in retail is steadily increasing, necessitating further investment in digital channels and improved customer service. Forecasts suggest that the e-commerce market is expected to reach PLN 192 billion by 2028, creating favourable growth conditions for companies across the country, including those in the Silesian Voivodeship. Key trends include the growing importance of mobile shopping and the integration of online and traditional channels, the increasing use of data and artificial intelligence in offering and service, the development of sales through large retail platforms, and increased consumer attention to environmental issues and payment methods.

73%

residents of the Silesian Voivodeship ordered or bought online in 2024

The Silesian Voivodeship offers favourable conditions for the development of e-commerce: a high degree of urbanisation, well-developed transport infrastructure, strong logistics resources, and access to skilled workers in the digital sector. A key element is the Silesian Regional Backbone Network, which improves the availability of high-speed internet in smaller towns, facilitating the launch of warehouses, customer service offices, and other functions, not only in the largest cities. The region's residents are heavily using the internet and digital services: over 70% shop online, the vast majority of households have internet access, and a significant portion of residents use e-government services.

These data show that online shopping has become an everyday practice, which is fostering the development of digital sales for businesses in the region.

In terms of the percentage of companies selling online, the Silesian Voivodeship ranks 8th in the country, with approximately 16%[28] of businesses selling electronically. Eurostat data indicates that Polish companies frequently use large trading platforms, which is also an important indicator for SMEs in the Silesian Voivodeship: selling via platforms allows for faster verification of interest in the offer and increases the number of orders without the need for significant investments in in-house technical and marketing resources.

Global e-commerce and logistics leaders recognise the strategic potential of the Silesian Voivodeship as a hub for digital sales and internationalisation. The operations of DHL[29] and Amazon[30] logistics centres, as well as investments by companies like Panattoni[31], confirm that the region is perceived as a key point in the European supply chain. Importantly, the presence of global operators enables local startups to benefit from modern fulfilment services and distribution networks, significantly lowering entry barriers to foreign marketplaces, shortening delivery times, and allowing them to test new markets without the need to establish local subsidiaries. As a result, the Silesian Voivodeship serves as a true internationalisation hub for innovative companies seeking to flexibly scale online sales.

Internationalisation through e-commerce is becoming the shortest and most effective route for startups in the Silesian Voivodeship to expand beyond their domestic markets. The cross-border sales model enables rapid testing of new markets, scaling demand, and revenue diversification without the need to establish local companies or store chains. The growing demand for online shopping in Europe, simplified EU regulations (e.g. the OSS VAT package), and the availability of digital tools supporting the automation of logistics, customer service, and marketing further reinforce this trend. Benefits include risk diversification, building a global brand, and access to new customer segments. Challenges such as regulations, certifications, logistics, and digital competencies can be overcome with export support programmes, consulting, and the region's logistics infrastructure. All of this makes e-commerce a strategic path for internationalisation for companies from the Silesian Voivodeship in the digital age.

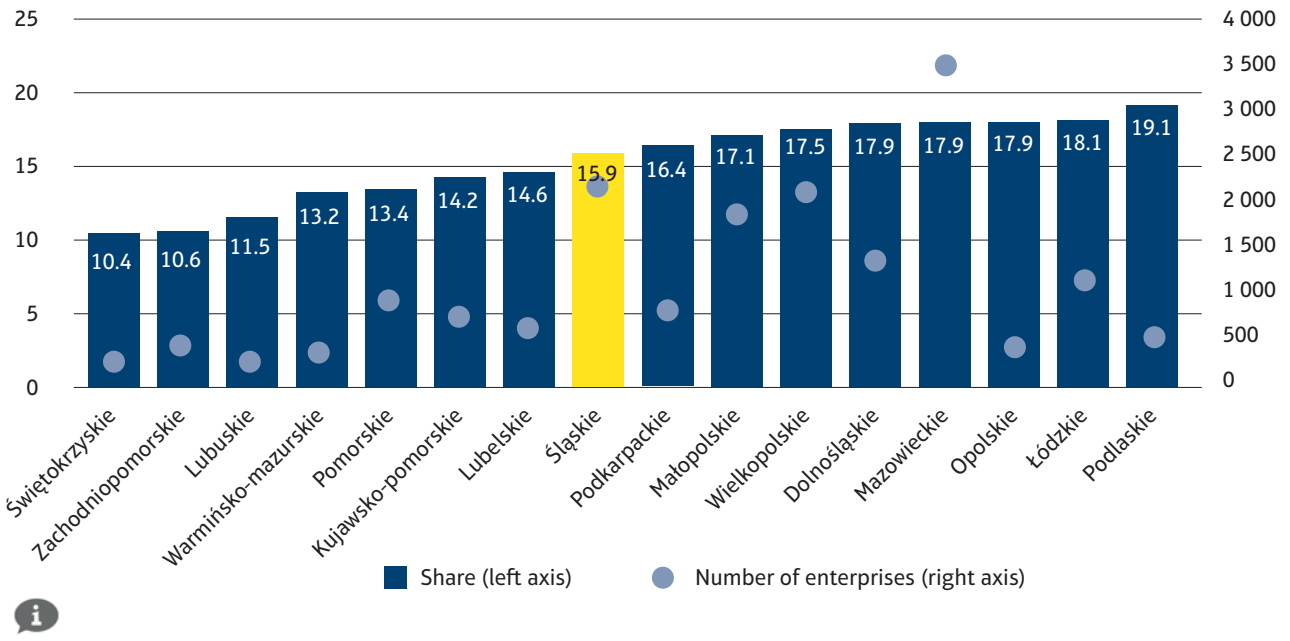
[28] *The use of information and communication technologies in enterprises in 2024, Statistics Poland, 2024.*

[29] *DHL, "Terminals and locations – DHL Freight", available at: https://www.dhl.com/pl-pl/home/transport/centrum-pomocy/dhl-freight-terminale-i-lokalizacje.html (accessed 24.11.2025).*

[30] *Amazon, "Centra Logistyki", available at: https://biuroprasoweamazon.pl/O-Amazon-w-Polsce/Centra-Logistyki.html (accessed 24.11.2025).*

[31] *Panattoni Europe, "Find a property", available at: https://panattonieurope.com/pl-pl/znajdz-nieruchomosc?region=sillesian (accessed 24.11.2025).*

Chart 9. Enterprises conducting e-commerce sales via websites, mobile applications, and trading platforms in 2023



Source: Use of information and communication technologies in enterprises in 2024, Statistics Poland, 2024.

Expanding the regional offer in the field of cross-border e-commerce support

The initiatives implemented at the Silesian Voivodeship level, mentioned in the previous sections (including InterGlobal and networking initiatives), provide a solid foundation for the development of digital exports in the region. However, to fully leverage the potential of **cross-border e-commerce**, it is necessary to implement dedicated activities focused on this specific area. The proposed solutions include: 1) preparing specialised training for **e-commerce** companies on SEO, marketing automation, and **marketplace** integration, led by industry experts; 2) organising periodic events that would connect startups with logistics operators, sales platforms, and internationalisation advisors; and 3) implementing a programme providing financing for services such as online sales readiness audits, **cross-border** strategy development, and marketing campaigns in foreign markets. Such initiatives will not only increase the number of companies from the region present on global platforms but also build a sustainable ecosystem supporting internationalisation through digital sales. When designing these solutions, it is worth examining selected activities implemented elsewhere in the world, presented below.

United Kingdom

"E-Commerce Exports Week 2025"[32] – an event organised by the Department for Business and Trade (DBT) and the E-Commerce Trade Commission, which focuses on intensive training, networking sessions, and advice for companies planning to sell cross-border.

Italy

Support for the digitalisation of enterprises in the Lombardy region[33] is provided through two main instruments: digital 4.0 vouchers (financing the implementation of Industry 4.0 technologies, automation and system integration) and a programme dedicated to the development of e-commerce, including co-financing the creation of sales platforms, integration with marketplaces, logistics solutions, and digital marketing.

[32] *Institute of Export & International Trade, „E-Commerce Exports Week 2025 to help firms overcome online trade barriers", available at: https://www.export.org.uk/insights/trade-news/e-commerce-exports-week-2025-to-help-firms-overcome-online-trade-barriers/ (accessed 24.11.2025).*

[33] *Unioncamere Lombardia, "Bando voucher digitali 4.0 Lombardia 2025", available at: https://www.unioncamerelombardia.it/bandi-e-incentivi-alle-imprese/dettaglio-bando/bando-voucher-digitali-40-lombardia-2025 (accessed 24.11.2025).*

8.

Good practices from abroad — internationalisation, ecosystems and financing

8.1. Examples of successful startup ecosystems

This section presents best practices in startup internationalisation and the development of startup ecosystems, taking into account the role of public administration. The analysis includes selected examples from Europe and the world, with a particular focus on regions with economic characteristics comparable to the Silesian Voivodeship, such as the Ruhr Area in Germany and the Moravian-Silesian Region in Czechia. Both areas are characterised by industrial heritage, economic transformation, and strong regional government involvement in building startup ecosystems. Ecosystems with different characteristics, located in other parts of the world, were also identified, which could serve as a source of inspiration for initiatives undertaken in the Silesian Voivodeship.
A total of seven ecosystem models were presented, focusing on their distinctive success factors and ways to support startups operating in different industries and at different stages of development.

Ecosystem	Key elements of the innovation environment	The role of public administration	Main conclusions
Ruhr Area Germany	The Western German Ruhr area, once a center of heavy industry, is now transforming into a modern innovation ecosystem based on repurposing post-industrial sites as infrastructure for startups.	The administration of North Rhine-Westphalia (NRW) and the cities in the region implement a comprehensive institutional support policy that includes both infrastructure investments and skills development.	Successful transformation requires long-term, multi-level financing and strong public-private partnerships (PPPs) that combine infrastructure, innovation, new jobs and a new economic identity.
Moravian-Silesian Region (Ostrava) Czechia	The MSIC (Moravian-Silesian Innovation Centre) in Ostrava serves as a regional hub supporting the development of startups and SMEs. The center offers comprehensive services ranging from grant advisory and digitalization support to sustainability programs, matchmaking, and access to office spaces and laboratories.	Regional and national administrations of the Czech Republic play an active role in the region's transformation by supporting entrepreneurship through the creation of dedicated investment funds, support programs for startups and SMEs. The authorities of the Moravian-Silesian region are implementing the RE:START strategy, which integrates governmental, local, and EU actions to achieve economic and social revitalization.	The example of the Moravian -Silesian region shows that effective industrial transformation requires an integrated approach combining financial, educational, and infrastructural support. MSIC is an example of a well-functioning innovation hub that, through collaboration with universities and the private sector, effectively fosters entrepreneurship development.
Paris (STATION F) France	Paris' STATION F is one of the most recognized hubs of the European startup ecosystem and the largest startup incubator in the world, located in a renovated Parisian railway station.	In France, public administration plays a key role in building and coordinating the startup ecosystem at all levels, from local to national. The central element of this system is Mission French Tech, a government agency operating under the Ministry of Economy and Finance, which acts as the coordinator of startup policy across the entire country.	The French model demonstrates that an effective startup policy requires collaboration at national, regional, and local levels, ensuring consistency of actions and broad access to support. The example of STATION F shows that investments in modern startup campuses, supported by both public administration and the private sector, can become key hubs for concentrating talent, capital, and knowledge.

Ecosystem	Key elements of the innovation environment	The role of public administration	Main conclusions
Helsinki and Espoo (Maria 01, Slush) Finland	The Finnish ecosystem Helsinki+Espoo+Vantaa Innovations, based on collaboration between universities, student organizations, and the city, demonstrates how to combine urban infrastructure with social capital. Located in Helsinki, the Maria 01 campus brings together young companies, investors, and corporations, and its community numbers over 1,500 members. The annual Slush conference in Helsinki is one of the most recognized startup events worldwide.	The authorities of Helsinki have played a key role in creating the local startup ecosystem by investing in infrastructure, support programs, and testing spaces. In addition to local initiatives, public administration in Finland is also involved in the development of startups, among other things, through the government agency Business Finland.	Actions by institutions such as Business Helsinki and Business Finland demonstrate that engagement by public administration at various levels can deliver lasting results, provided that appropriate support instruments are developed and tailored to local needs and the potential of a given ecosystem. From municipal grants, through the regional Smart Specialisation strategy, to the national entrepreneurship strategy – Finland is building a coherent system that supports startups at every stage of development.
Tallinn Estonia	The Estonian ecosystem is distinguished by the consistent development of digital public services and platforms that support entrepreneurship. E-Residency is a program that enables people from all over the world to obtain a digital identity. It is a government-issued digital identifier that lowers entry barriers for foreign entrepreneurs and facilitates doing business within Estonian structures.	Estonian public administration consistently shapes a startup-friendly environment. The state invests in the development of digital services, streamlining administrative processes and enabling entrepreneurs to quickly establish and manage businesses online. Institutions such as Startup Estonia and the e-Residency team act as specialised units supporting innovation, internationalisation, and skills development, with their activities closely aligned with government policies and EU funding.	E-Residency is a model example of how digital services can support the development of an economic ecosystem and foster startup growth by removing administrative barriers and encouraging company formation. With institutional support, Estonian startups have the opportunity to participate in attractive acceleration programs, networking events, and investor presentations coordinated by Startup Estonia.
Munich (TUM, UnternehmerTUM) Germany	The Munich ecosystem, centered around the Technical University of Munich and the UnternehmerTUM organization, is currently among the highest-rated in Europe. In international rankings, this hub consistently holds top positions. A key component of the ecosystem is the specialised innovation center Venture Labs, which supports the creation of technology-based enterprises across multiple scientific fields, as well as the open MakerSpace workshop that accelerates product iterations.	In Munich, public administration plays a multifaceted role in developing the innovation ecosystem around UnternehmerTUM. It not only invests in infrastructure and coordinates activities but also actively supports access to financing, fosters digital skills, and promotes the ecosystem internationally. Acting as a strategic partner, it integrates science, business, and society within projects such as Munich Urban Colab.	A technical university as the core of the system and consistent public support at the state; city and federal levels make it possible to build a mature environment for advanced technological projects.

Ecosystem	Key elements of the innovation environment	The role of public administration	Main conclusions
Zurich and Lausanne (ETH, EPFL) Switzerland	Swiss hubs around ETH Zurich and EPFL Lausanne demonstrate how strong academic institutions build urban and regional ecosystems. The EPFL Innovation Park hosts hundreds of companies and several thousand specialists working in close proximity to the university, while networks of local innovation parks create a national infrastructure for science–business collaboration. There are also robust programs supporting academic entrepreneurship (Innosuisse and university-led initiatives).	Public administration in Switzerland supports the development of innovation parks through federal credit guarantees, land leasing, and the financing of office and laboratory infrastructure by the cantons. Innosuisse, the federal innovation agency, facilitates knowledge transfer from science to the economy by funding R&D projects, startups, and SMEs, as well as offering modular training for entrepreneurs. Programs such as FIT provide additional regional support in the form of grants, loans, and incubation for young technology companies. In this way, the administration creates a coherent ecosystem that combines education, mentoring, and innovation financing.	The physical and organisational proximity of universities and innovation parks, combined with the active role of cantons and federal agencies, accelerates the transfer of knowledge to the economy and allows support to be tailored to local specialisations.

Analysis of ecosystem models shows that, despite economic and cultural differences, effective startup systems share common characteristics: efficient coordination of activities at the local, regional, and national levels, active public entities supporting startups, strong private sector involvement, and the key role of universities and research institutions as sources of talent and knowledge. An approach that considers market needs, global trends, and directions of economic transformation is also crucial. These elements can inspire the development of the ecosystem in the Silesian Voivodeship.

9.

Recommendations for the future

Vision: The Silesian Voivodeship is a leading innovation hub in Central and Eastern Europe, creating an integrated and globally oriented startup ecosystem based on collaboration between business, academia, and public administration. This ecosystem not only attracts talent, capital, and technologies but also supports the internationalisation and foreign expansion of regional enterprises, generating lasting value for the economy.

The development policy for the startup ecosystem in the Silesian Voivodeship should focus on actions that foster the growth of innovative enterprises in the region and support the vision of positioning Silesia as a leading innovation hub in Central and Eastern Europe.

The key objectives of startup policy in the Silesian Voivodeship include:

- **Integration of the ecosystem and development of cooperation:** strengthening collaboration between business, academia, public administration, and civil society through the creation of platforms for knowledge and experience exchange.
- **Increasing access to financing for startups:** ensuring stable funding sources by establishing regional seed and venture capital funds, implementing grant mechanisms, and introducing tax incentives for investors.
- **Development of innovation-supporting infrastructure:** building and expanding technology hubs, incubators, and co-working spaces, as well as providing access to research and development facilities and technologies.
- **Strengthening human capital and entrepreneurial competencies:** implementing educational and training programmes for startup founders, developing mentoring and expert networks, and attracting talent to the region through promotional campaigns.
- **Internationalisation of enterprises:** supporting foreign expansion of startups through training, business missions, and soft-landing programmes.

The starting point for defining the directions of startup policy development in the region was the identification of barriers limiting the growth potential of the ecosystem. Below is a summary of priority action areas, along with brief context.

Priority area #1
Integration of services and coordination of the regional startup ecosystem

Context:

The analysis revealed the absence of an integrated support ecosystem for startups – the current institutional landscape is fragmented, lacking a clear access path to services and coordinated information. There is no single point of contact functioning as a "one-stop shop" to facilitate soft-landing, matchmaking with large companies, and internationalisation of startups. Additionally, it is necessary to strengthen dialogue and cooperation among ecosystem stakeholders.

Goals and example activities:

- Integration of the ecosystem by facilitating connections among its participants (startups, SMEs, business environment institutions, universities, large enterprises).
- Creation of an integrated "one-stop shop" system, featuring a technology brokerage function, a startup-corporation matchmaking platform, and a calendar of calls and events.
- Strengthening dialogue and collaboration through regular ecosystem panels, enabling updates of priorities and support instruments based on market needs.

Priority area #2
Strengthening startup financing mechanisms

Context:

Analysis of the ecosystem and results of qualitative research (IDI, FGI) indicate a significant funding gap after the seed stage, when projects are technologically advanced but still too risky for private investors. Startups face difficulties in covering the costs of validation, certification, and in generating demand from large companies and public administration. Mechanisms are needed to enable testing solutions in real conditions and flexible financial instruments that accept innovation risk while providing "safeguards" in the form of preliminary expert evaluation. The current support system is fragmented, and the processes of obtaining funds are complicated and time-consuming, which limits the absorption of available resources.

Goals and example activities:

- Increasing the availability of capital at the proof-of-concept stage and during initial implementations through the launch of vouchers for R&D services, export advisory, and technology transfer.
- Reducing cost and procedural barriers in the process of technology validation, certification, and preparation for internationalisation.
- Introducing demand-side mechanisms (programmes such as "opening doors", mini-accelerators, corporate mentoring) that enable testing solutions in real conditions with end users.
- Developing cooperation between science, business, and local government through funding for R&D services, technology transfer, and commercialisation of research results.

Priority area #3
Access to infrastructure and digitalisation of SMEs

Context:

Among the barriers to the development of the startup ecosystem in the Silesian voivodeship is also the limited R&D and prototyping infrastructure – the lack of easily accessible laboratories that enable work on solutions. Both qualitative research and secondary data analysis indicated that startups, especially those operating in hard-tech and medtech areas, face particularly high cost and infrastructure barriers.

Goals and example activities:

- Facilitating access to regional research and prototyping infrastructure by creating a unified database of laboratories, R&D services, and testing resources.
- Increasing the use of resources from universities, research institutes, and business environment institutions in innovative projects carried out by startups and SMEs.
- Launching a regional digital support network offering technology testing, advisory services in e-commerce, cloud and cybersecurity, as well as competency training

Priority area #4
Development of competencies, talent supply and exchange of experiences

Context:

IDI and FGI research showed that current training programmes are perceived as too general and of little use for startups and SMEs. Entrepreneurs expect support tailored to the specifics of industries and the stage of company development, with an emphasis on practical solutions. The region has strong academic and industrial potential, but lacks mechanisms for systematic cooperation and dedicated acceleration and incubation programmes in an industry-specific format. Additionally, there is a shortage of technical and managerial talent, and competition for staff includes both the domestic and international markets. In response, it is recommended to develop industry-specific incubators and accelerators, campaigns promoting an innovation culture, and strengthen cooperation with partner regions to exchange experience and transfer know-how.

Goals and example activities:

- Development of specialised incubation and acceleration programmes addressing the needs of key industries.
- Strengthening cooperation of startups with corporate partners, universities, and R&D institutions through the creation of industry-specific support paths and access to testing resources, as well as support for startups in recruitment through talent platforms and collaboration with universities.
- Promoting a culture of innovation and entrepreneurship through media campaigns, competitions, hackathons, and networking events.
- Deepening cooperation with partner regions to exchange experience, best practices, and create international consortia.
- Positioning the Silesian voivodeship as a leading innovation hub in Poland and central and eastern Europe through branding activities.

Priority area #5
Internationalisation and development of export competencies

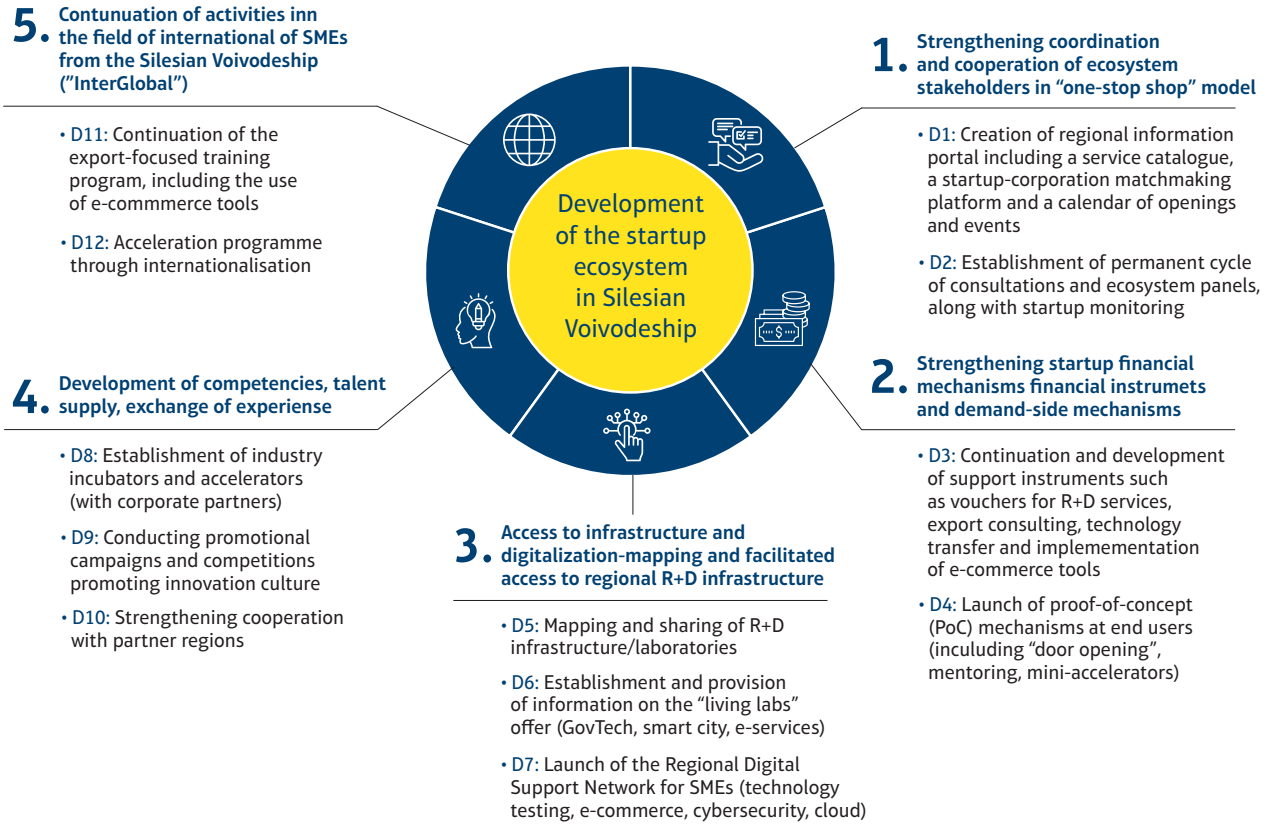
Context:

Startups and SMEs from the Silesian Voivodeship are increasingly using instruments supporting internationalisation, such as the InterGlobal project. However, as export competencies grow, the need for more advanced, practical forms of support increases – tailored to the industry and the stage of company development. Current training activities are perceived as too general, and entrepreneurs expect programmes based on real case studies, workshops with market experts, and mechanisms facilitating entry into foreign markets. Key barriers include a lack of knowledge about export procedures, certification, legal regulations, financing and transactional risk, as well as the use of e-commerce tools in exports.

Goals and sample activities:

- Raising entrepreneurs' competencies in internationalisation and foreign expansion through practical training, workshops, and industry-specific advisory.
- Increasing the use of e-commerce tools in international trade by SMEs and startups from the region.
- Facilitating entry into foreign markets through support in certification, regulations, logistics, financing, and intellectual property protection.
- Launching an acceleration programme through internationalisation (the "acceleration bridge" model), enabling startups to establish relationships with foreign innovation hubs and conduct pilots in target markets.
- Increasing the number of companies from the Silesian Voivodeship engaged in foreign sales and participating in global value chains.

Recommendation framework



Source: own elaboration.

10.

Summary and final conclusions

Key findings from the diagnosis of the startup ecosystem in the Silesian Voivodeship

- The number of startups in the Silesian Voivodeship is steadily increasing, indicating growing interest in innovative entrepreneurship in the region. Although the lack of a single nationwide registry collecting data on startup activity remains a challenge, this study adopts an approximate estimate of around 500 startups in the region, obtained through two convergent methods: share-based estimation using national data and the ratio of startups to the overall firm population, as well as bottom-up verification through analysis of regional and industry-specific databases.

- The most active startups are concentrated in sectors such as ICT, Industry 4.0, energy, medicine, and advanced materials. Projects in ecology and smart city solutions also play a significant role, addressing the challenges of the region's energy and environmental transition. The diversity of sectors and the growing number of newly established companies highlight the dynamic nature of the Silesian startup ecosystem, which increasingly meets the needs of the local economy and global trends.

- The region has solid institutional foundations and infrastructure supporting innovation development – a network of BEIs, technology parks, universities, and R&D units fosters the creation of new ventures. A strong scientific base, patent activity, and increasing R&D expenditures build the region's competitive advantage. The voivodeship offers high transport accessibility, a large labour market, and an extensive network of business and public clients, facilitating validation and reference building.

- The Silesian startup ecosystem is undergoing an intensive transformation – from a dispersed, initiative-driven development model based mainly on individual entities and projects to an increasingly systemic structure of cooperation between administration, business, academia, and support institutions. Research data indicate that the region has a stable talent base, developed innovation infrastructure, and significant public funding resources, but still requires process coordination and stronger instruments for scaling and internationalising startups.

- The region's main advantage lies in the concentration of startups and technology companies in areas aligned with regional smart specialisations, particularly ICT, medtech, green transition, and industrial technologies. The Silesian Voivodeship also stands out for its strong R&D base and implementation potential resulting from its high level of industrialisation. This is a unique situation nationwide – the region combines a large number of technology solution recipients with a growing base of innovation providers.

- The main barriers to ecosystem development include fragmented support initiatives, uneven levels of business competence, and limited scale of international expansion among startups. The lack of systemic coordination of activities and challenges related to technology transfer hinder full exploitation of the region's potential. There is still a need to intensify efforts to build an entrepreneurial culture, especially among young innovators, and to better link science with business. Research results also point to a significant funding gap after the seed stage, when projects are technologically advanced but still too risky for investors.

- Internationalisation remains one of the key challenges for startups in the Silesian Voivodeship. Despite growing export activity and participation in international projects, the limited number of companies successfully scaling into foreign markets is a barrier. Support in this area is provided by mentoring programmes, testing environments, and international platforms; however, further professionalisation of advisory services and increased access to capital for expansion are necessary. The region should strengthen efforts to build global competencies, networks, and promote local innovations abroad.

In summary, the Silesian startup ecosystem has high growth potential but requires further integration of activities and intensification of internationalisation processes to fully leverage its capabilities in a competitive innovation environment.

Priority directions of change and recommendations for developing the startup ecosystem in the Silesian Voivodeship

- In light of the diagnosis and identified barriers, recommendations have been developed for the growth of the Silesian startup ecosystem, focusing on transformative actions that address the region's key challenges.
  The proposed directions and priority areas aim not only to strengthen the existing foundations of the ecosystem but, above all, to accelerate internationalisation processes, professionalise support, and build competitive advantages on a global scale.

- **Integration and coordination of the ecosystem:**
  It is recommended to establish a regional "one-stop shop" platform for startups, serving as a technology broker, internationalisation coordinator, and information centre for support instruments, calls, and events.

- **Strengthening financing and demand mechanisms:**
  It is recommended to develop regional seed and pre-seed funds, quasi-equity instruments, and vouchers for R&D services and export advisory, as well as introducing proof-of-concept mechanisms with end-users and pilot programmes with large companies.

- **Development of innovation infrastructure and digitalisation:** It is recommended to map and provide access to R&D infrastructure, develop living labs, and launch a Regional Digital Support Network for SMEs.

- **Skills, talent, and knowledge exchange:** It is recommended to develop industry-specific incubators and accelerators, mentoring programmes, and campaigns promoting an innovation culture, as well as intensifying cooperation with partner regions and international communities to exchange experiences.

- At the same time, the report confirms that to achieve full growth potential, the ecosystem requires improved access to seed capital, better orientation of startups in available support instruments, stronger cross-border cooperation, development of export competencies, and a systemic mechanism for generating and diffusing innovation.
  The response to these needs should be a long-term approach – based on coordination, stability of support instruments, and a gradual shift from a "project" logic to a "system" logic.

- **Sectoral specialisation and leveraging the region's transformation opportunity:** It is recommended to focus interventions on areas aligned with regional smart specialisations and Just Transition Fund priorities – particularly medtech and life sciences, industrial and material technologies, climate-tech and energy, automation and robotics, and digital solutions for industry. Targeting support programmes, funds, and infrastructure toward these pillars will help build a distinctive profile for Silesia as one of the key technology hubs in Central and Eastern Europe, while maximising the impact of FESL and Just Transition Fund resources.

- **Internationalisation and foreign expansion:**
  It is recommended to continue and professionalise acceleration programmes through internationalisation, support participation in foreign missions and trade fairs, develop export competencies, and provide systemic support for certification and regulatory advisory.

The proposed priority directions form a coherent set of interventions – from coordination and financing, through infrastructure, skills, and sectoral specialisation, to internationalisation – which, if consistently implemented, can transform the Silesian startup ecosystem into one of the most recognisable and competitive in Poland and Europe (especially Central and Eastern Europe).

Silesian startups — from local initiatives to global successes

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