

ENGAGING ENTREPRENEURIAL ECOSYSTEMS FOR THE YOUTH

## Potential & Venture Biographies' Analysis

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# Content

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About this report.....	II
The Ecosys4you project & Cross-ecosystem analysis .....	5
1 Background and Aims of the Ecosys4you project .....	5
2 Methodology and Data .....	7
2.1 SWOT Analysis & Entrepreneurial Ecosystem Comparison .....	7
2.1.1 Data Collection: semi-structured interviews .....	7
2.1.2 Data collection: Innovation/Venture Biographies .....	8
2.2 Introduction to the entrepreneurial ecosystems.....	8
2.2.1 Varna’s entrepreneurial ecosystem .....	8
2.2.2 Maribor’s/Slovenia’s entrepreneurial ecosystem.....	9
2.2.3 The Ruhr’s entrepreneurial ecosystem .....	9
2.3 Overview of the venture biographies .....	10
2.3.1 Venture biographies of Maribor’s/Slovenia’s entrepreneurial ecosystem .....	10
2.3.2 Venture biographies of Varna’s entrepreneurial ecosystem.....	11
2.3.3 Venture biographies of the Ruhr’s entrepreneurial ecosystem .....	12
3 Cross-ecosystem comparison .....	13
3.1 Strengths .....	14
3.2 Weaknesses.....	14
3.3 Opportunities .....	15
3.4 Threats.....	16
3.5 Conclusions.....	17
3.6 Outlook.....	18
Entrepreneurial Ecosystem Varna, Bulgaria .....	19
1 Key characteristics of the ecosystem.....	19
2 Distinctions of the entrepreneurial ecosystem.....	21
3 Key actors .....	22
4 Interactions between ecosystem actors.....	23
5 Connection between (specific) ecosystem actors and the HEIs .....	24
6 Financing mechanisms.....	24
7 Sectoral specifications .....	25
8 The ecosystem’s location.....	25
9 SWOT Analysis .....	26
10 Lessons Learned for Ecosys4you .....	26

References.....	26
Entrepreneurial Ecosystem Slovenia .....	28
1 Key characteristics of the ecosystem.....	28
2 What is special about the entrepreneurial ecosystem? .....	30
3 The ecosystem’s evolvement over time .....	31
4 Key actors .....	33
5 Interactions between ecosystem actors.....	34
6 Connection between (specific) ecosystem actors and the HEIs .....	35
7 Financing mechanisms.....	35
8 Sectoral specifications .....	36
9 The ecosystem’s location.....	37
10 The ratio between supporting infrastructure and actual startups in the ecosystem .....	37
11 SWOT Analysis .....	38
12 Lessons Learned for Ecosys4you .....	38
References.....	39
Entrepreneurial Ecosystem in the Ruhr, Germany .....	40
1 Introduction to the Ruhr’s entrepreneurial ecosystem .....	40
2 Distinctions of the Ruhr’s entrepreneurial ecosystem .....	41
3 The ecosystem’s evolution over time .....	42
4 Key actors .....	43
5 Interactions between ecosystem actors.....	44
6 Financing mechanisms.....	45
7 Sectoral specifications .....	45
8 The ecosystem’s location.....	46
9 SWOT Analysis .....	46
10 Lessons Learned for Ecosys4you .....	47
References.....	47
Venture Biographies.....	50

# The Ecosys4you project & Cross-ecosystem analysis

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## 1 Background and Aims of the Ecosys4you project

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Ecosys4you scales entrepreneurship education within and across the three entrepreneurial ecosystems of the regions Ruhr (Germany), Varna (Bulgaria) and Slovenia. Establishing flows of innovation resources, common further development of competence, opening up new markets, and integrating business expertise from the private sector into educational activities will create longlasting interlinkages. This strengthens the entrepreneurial spirit to benefit all ecosystems, creates new entrepreneurs and supports network relations between diverse ecosystem actors. Ecosys4you develops a new and complementary understanding of entrepreneurship education by viewing ecosystems as collective educational actors essential to "raising" a start-up and empowering students to be an integral part of ecosystems. Ecosys4you integrates new actors from the private sector, especially from the Ruhr as a strong innovator region, and jointly develops their role in entrepreneurship education. The focus is developing a two-year cross-ecosystem program for young people passionate about entrepreneurship. The programme development will enable synergies in entrepreneurship education, networking, and market expansion between the three ecosystems and beyond. Young people interested in founding a company develop entrepreneurial expertise by learning from founders, start-ups, and real-world business development challenges. We establish and set up network-based exchange activities with the expertise of the three ecosystems, especially joint classes, mentoring, real-world challenges and internships at start-

ups. The programme's activities connect formal education in high education institutions (HEIs) with the ecosystems. The programme is open to students and young alums from HEIs, professional schools, graduates who wish to find a company, and other young people who wish to discover entrepreneurial spirit.

Ecosys4you develops and designs activities complementary to the region's existing entrepreneurial education and adds value through joint knowledge generation and networking events targeted at market expansion. Inspired by the slogan "It takes a region to raise a start-up", underlining the collective endeavour to support entrepreneurial spirit and start-ups, our concept of innovative entrepreneurship education understands ecosystems as collective educational actors. Consequently, the project's coordinative actions focus on mobilising the educational resources of ecosystems in addition to higher education institutions. The approach will improve the quality of entrepreneurship education through practical knowledge and experience. A key principle is the integration of private actors into the programme design and implementation to enable co-creation between private sector actors, higher education institutions, teachers, and other ecosystem actors (e.g. public).

A second cornerstone of our concept of innovative entrepreneurship education is the empowerment of students to be an integral and active part of entrepreneurial ecosystems. The main mission is to dissolve the divide between entrepreneurship education in HEIs and ecosystems. While students are highly appreciated as a labour force within ecosystems during their studies and after graduation, their role as entrepreneurial knowledge providers is underplayed. Ecosys4you will strengthen the students' role by developing actions that allow them to provide knowledge and learn in a cooperative manner.

Ecosys4you has three main objectives:

- To establish improved innovation resource flows between the Ruhr, Varna and Slovenia entrepreneurial ecosystems. Business experts in the private sector significantly contribute their expertise to increase innovation potential and establish and sustain resource flow.
- To strengthen the innovation potential of the entrepreneurial ecosystems by stimulating and supporting people, especially the youth, to create new businesses and increase the flow of skilled employees to startups and young companies. A focus will be on improving digitisation competencies, for example, by raising awareness for cyber security as a fundamental part of business development in the digital era.
- To foster entrepreneurial thinking and practical knowledge by interlinking HEIs, entrepreneurs, and intermediaries inside and across the ecosystems. Students are empowered to be part of it as entrepreneurs.

This comparative report aims to analyse and contrast the Strengths, Weaknesses, Opportunities, and Threats (SWOT) of the entrepreneurial ecosystems in the Ruhr region, Varna, and Slovenia. By examining the unique characteristics and challenges of each ecosystem, this report seeks to provide insights into their respective strengths, such as access to talent, robust support infrastructure, and strategic location, as well as weaknesses, such as dependency on project funding, centralization tendencies, and competition for skilled labour. Furthermore, the report aims to identify opportunities for growth and development, such as specialization in key sectors, collaborative funding models, and regional expansion, while also addressing threats, such as infrastructure limitations, regulatory changes, and global economic uncertainty. Through this comparative analysis, stakeholders can better understand the key factors shaping each ecosystem and identify strategies to foster their resilience and competitiveness. Furthermore, it lays the ground for developing the Ecosys4you activities across the three ecosystems: internships, mentoring, joint classes, and co-ideation challenges.

## 2 Methodology and Data

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### 2.1 SWOT Analysis & Entrepreneurial Ecosystem Comparison

We applied a SWOT analysis for assessing the entrepreneurial ecosystems, providing a structured framework to evaluate the strengths and weaknesses and opportunities and threats that impact the ecosystem's development and success. We identified the ecosystem's strengths, such as the availability of talent, supportive infrastructure (such as co-working spaces, accelerators, and incubators), access to funding, and a culture of innovation and collaboration. These strengths serve as foundational elements that contribute to the ecosystem's vibrancy and potential for growth. Simultaneously, the analysis also identifies weaknesses, such as limited capital access or a lack of support structures for the start-up community. Recognizing these weaknesses allows ecosystem stakeholders to address areas needing improvement and implement strategies to enhance the ecosystem's overall competitiveness. Furthermore, the SWOT analysis examines potentials/opportunities that may benefit the entrepreneurial ecosystem, such as emerging market trends, government support programs, strategic partnerships, or access to international markets. Identifying these opportunities enables ecosystem stakeholders to leverage external resources and create favourable conditions for entrepreneurship and innovation. Conversely, the analysis also considers threats that may pose challenges to the ecosystem's growth and sustainability, such as economic downturns, competition from other ecosystems, or disruptions in global markets. Understanding these threats helps ecosystem stakeholders anticipate risks and develop strategies to mitigate their impact.

The SWOT analysis serves as a tool for entrepreneurial ecosystems' development by comprehensively assessing the ecosystems' internal and external development factors. By leveraging strengths, addressing weaknesses, capitalizing on opportunities, and mitigating threats, stakeholders can foster a conducive environment for entrepreneurship and innovation, driving economic growth and prosperity within the ecosystem. The in-depth SWOT analyses of each ecosystem are in the respective chapters of this report: Chapter 2 for Varna (p. [26](#)), Chapter 3 for Slovenia (p. [38](#)) and Chapter 4 for the Ruhr (p. [46](#)).

The *cross-ecosystem comparison* involves the key components and characteristics of the different Ecosys4you entrepreneurial ecosystems to identify similarities, differences, strengths, and weaknesses. For example, the comparison assesses the availability of supporting structures within each ecosystem, including the presence of hubs, incubators, role models and public institutions. Secondly, access to funding is a crucial aspect of entrepreneurial ecosystems. The comparison looks at the availability of capital, including venture capital, angel investment, and government grants. It also considers the ease of accessing funding. By conducting a comprehensive comparison of these factors across Slovenia's, the Ruhr's and Varna's entrepreneurial ecosystems, stakeholders can gain valuable insights into the strengths and weaknesses of each ecosystem and identify opportunities for improvement and collaboration. This information can inform strategic decision-making and policy development to support the growth and success of start-ups and entrepreneurs within the region. Furthermore, it informs the development of the Ecosys4you activities (Internship Program, Mentoring, Hackathons, and Joint Classes).

#### 2.1.1 Data Collection: semi-structured interviews

The methodological approach for data collection involved conducting semi-structured expert interviews with representatives from support institutions within the entrepreneurial ecosystems of Varna, Slovenia, and the Ruhr region. The interviews were designed to gather insights into the specific characteristics of each ecosystem, focusing on key areas such as collaboration, access to funding, support

infrastructure, actor landscape, and sectoral specialization. The semi-structured nature of the interviews allowed for flexibility in questioning, enabling interviewees to elaborate on specific topics of interest while still adhering to a predefined set of core questions. This approach ensured that a comprehensive understanding of each ecosystem could be obtained while also allowing for exploration of emergent themes and ideas.

Interviews were conducted with a diverse range of experts, including representatives from municipalities (e.g. local economic development agencies), accelerators, incubators, and private ecosystem actors. This diverse sampling strategy aimed to capture a broad spectrum of perspectives and insights from key stakeholders within each ecosystem. Altogether, 45 interviews, 15 in each ecosystem, were conducted in August and September 2023. Data collection involved protocolling or recording and transcribing the interviews to facilitate analysis. Thematic analysis was then used to identify common patterns, trends, and topics across the interviews, allowing for a systematic comparison of the three entrepreneurial ecosystems. The detailed analyses of each ecosystem are in the subsequent chapters.

### **2.1.2 Data collection: Innovation/Venture Biographies**

We conducted “venture biographies” of start-ups in the three Ecosys4you entrepreneurial ecosystems to grasp their start-ups stories. The approach is based on the method of innovation biographies which is a qualitative research approach aimed at understanding processes of innovation (Butzin & Widmaier 2016). It involves collecting and analysing detailed biographies of innovation projects, focusing on the experiences, actions, and interactions of individuals involved in the innovation process and how a business idea evolved in concordance with the innovation process.

The method begins with the selection of a start-up to be studied, in our case based on specific Ecosys4you criteria (between 3-7 years old, a range of sectors across the biographies, a founded company, university spin-outs and other start-ups). Researchers then conducted an in-depth, narrative interview with the founder(s), to gather rich and detailed accounts of their experiences throughout the innovation journey. During the interviews, the founders were encouraged to reflect on various aspects of the innovation process, such as idea generation, problem-solving, decision-making, collaboration, and overcoming obstacles. The interview data was then transformed into a narrative text that was further enriched with information from websites, etc. All the start-up stories are published on the project website: <https://www.ecosys4you.eu/project/startup-stories/>.

## **2.2 Introduction to the entrepreneurial ecosystems**

### **2.2.1 Varna’s entrepreneurial ecosystem**

Varna is located on the Bulgarian coast and is the second most innovative place in the country after the capital – Sofia. The city is part of Bulgaria's emerging entrepreneurial ecosystem, initiated in 2013 and fortified by robust digital infrastructure and several key strengths. The country boasts a low cost of living and one of the EU's lowest personal and corporate tax rates. The government actively encourages entrepreneurship through agencies like Invest Sofia and initiatives such as the Startup Visa. A unique company model that allows flexible capital infusion, akin to the US, further stimulates business development. However, being located 440 km east of the capital Varna’s ecosystem faces its own challenges like a heavy reliance on EU funding for training and mentoring, limited financing mechanisms, and the concentration of venture capital and business angels in Sofia.

Nevertheless, Varna hosts six universities, nurturing a growing young population of around 40,000 students. Additionally, the start-up scene is populated by diverse actors as business support organizations



like Regional Agency for Entrepreneurship and Innovations – Varna (RAPIV), Smart Varna Foundation, Business Agency Association, Beehive, ICT Cluster – Varna and national VC funds like LaunchHub and Eleven Ventures. The city is home to thriving sectors, including fintech, artificial intelligence, healthtech, and logistics around the port, creating jobs and bolstering the economy.

Furthermore, various activities like Startup Weekend Varna, ABLE Weekend Activator, EIT Food Challenge Lab Bulgaria and Innowave Summit, though with limited municipal support, drive startup ventures and innovation. The ecosystem fosters interactions among its actors, offering specialized programs such as Varna Deep Tech Innovation Port, University of Economics Varna Accelerator, Women Entrepreneurship Centre, and D-Care Smart Care Labs. Innowave Summit, taking place this year in November from the 17th to 18th serves as a platform for networking and knowledge exchange worth visiting if you happen to be nearby.

### **2.2.2 Maribor's/Slovenia's entrepreneurial ecosystem**

Despite the small market, Slovenia's entrepreneurial ecosystem maintains a global perspective with high demand and well-distributed key players across 12 regions. Starting in the early 1990s the ecosystem evolved through a series of public initiatives, followed by private sector involvement, consulting companies, mentors, and the introduction of seed capital in 2014 (e.g. Slovenian Enterprise Fund). Ever since the actors' and events' landscape has only diversified.

The digitalized SPOT Points platform – a comprehensive system of support and free state services for business entities – arrived in 2017 as a successor of VEM points to bolster support. The Podim Conference in Maribor has emerged as one of the top startup events for tech companies in the EU, the next one taking place in May 2024 from the 13th to the 15th.

Furthermore, business angels have invested over €8 million in 40 undisclosed ventures, while various funding mechanisms fuel early-stage company growth. Notable actors within the Slovenian ecosystem include innovative start-ups such as Zemanta, DeWeSoft, BellaBeat, Chipolo and many more, along with organizations like the Ministry of Economy, Tourism, and Sport (MGŠT), SPIRIT, SPS (Slovenian Enterprise Fund), SID Bank, GZS (Chamber of Commerce), AmCham, and regional development agencies, university incubators (e.g. LUI, Inkubator Sežana), accelerators like the ABC Accelerator and technology parks (e.g. TP Ljubljana, Primorska TP, Tovarna podjetij). Slovenia's ecosystem serves as a model for collaboration and networking among ecosystem actors, efficient European funding navigation, and balanced regional development. With its solid support infrastructure, global recognition, family business legacies, and a focus on education and talent development, Slovenia presents a promising environment for innovative ideas. Nevertheless, spatial constraints, centralization tendencies, and limited capital access present some challenges for the new companies. There is still an underutilized potential for knowledge sharing in specialized sectors, rural entrepreneurship support, global expansion, diverse funding models, and regulatory enhancements to enhance competitiveness and sustainability.

### **2.2.3 The Ruhr's entrepreneurial ecosystem**

The Ruhr region in Germany has a long coal and steel industrial history. The last decades marked a restructuring era for the Ruhr from heavy industry to knowledge-based sectors and innovation development. The Ruhr region's entrepreneurial ecosystem evolved in the early 2000s and has, according to dealroom data, generated more than 500 startups until now. A notable milestone of the entrepreneurial ecosystem was the foundation of the ruhrHUB in 2016, promoting startups and collaboration among supporting ecosystem infrastructures and municipalities. Some of the entrepreneurial ecosystem's key sectors are green technology, health-tech, cybersecurity, urban transformation, new industries, IT services and intelligent logistics.

According to interviews with ecosystem intermediaries, a significant strength of the Ruhr ecosystem is a diverse and complementary support infrastructure for entrepreneurs and start-ups. It includes the municipal level, for example through business idea competitions, the university level, for example specialized incubators like CUBE5 for cybersecurity at the Ruhr University Bochum, and region-wide events such as the ruhrSUMMIT or the ruhrSTARTUPWEEK. However, a weakness is a lack of available funding for later start-up phases in comparison to the strong concentration on funding early start-up phases. While opportunities lie in shifting the regional mindset and enhancing cooperation among cities in the Ruhr with role models emerging among early-stage startups, concerns were raised regarding the project-based funding of the supporting infrastructures. This is considered a threat to the ecosystem's development since many of the supporting infrastructures, especially some of the major incubator programs, are only funded until the end of 2024. Furthermore, uncertain employment effects, challenges posed by double structures across municipalities, and competition with more established regions like Cologne and Düsseldorf are viewed with concern.

## 2.3 Overview of the venture biographies

Fifteen venture biographies have been reconstructed in Ecosys4you to date, an overview table can be found below. When selecting the cases, a criterion was to select start-ups from male and female founders and to have a broad sectoral diversity. One case (HandySec) has not been released by the founders at this time, they will appear on the Ecosys4you homepage as soon as possible under the link above.

**Table 1.** Overview of Ecosys4you venture biographies

EE	Name of Start-up / characteristics	Sector	m/f founder(s)
Slovenia	Book Publishing	Publishing	f
Slovenia	Eurobill	fintech	m
Slovenia	Green	e-commerce	f
Varna	Bees buzz ads	digital marketing	m
Varna	comp	software solutions	m
Varna	IT centre Varna	software solutions	m&f
Varna	Cloud services	cloud services	m
Varna	ECAP	environmental management	m
Varna	Kinetik Automotive Company	automotive	m
Ruhr	AWARE 7	Cybersecurity	m
Ruhr	Exchange Habituation for Education	Education	f
Ruhr	Sustain Consult	Energy	m
Ruhr	Change Fashion	Apparel	f
Ruhr	HandySec	Cybersecurity	m
Ruhr	PHYSEC	Cybersecurity	m

### 2.3.1 Venture biographies of Maribor's/Slovenia's entrepreneurial ecosystem

Overall three venture biographies were conducted in Slovenia:

- BOOK Publishing House represents a hybrid model that blends both self-publishing and traditional publishing elements. Authors have the option to choose between traditional publishing or BOOK's distinctive business model. Under this model, authors and the publisher jointly invest 50/50 in the publication of the book, thereafter sharing profits or losses in a roughly equivalent proportion.

- EUROBILL is an online platform for debt offerings. The idea for starting such a platform began in 2008 when the financial crisis led to the liquidation of a foreign bank's branch in Ljubljana. Employees began selling a portfolio of financial investments dealing with credits issued by credit companies. This was their first encounter with the unorganized market for debt sales. Recognizing the underdeveloped state of the Slovenian factoring market (4%) compared to the European average (10%), they conceived the idea of developing a company aiming at debt sales.
- GREEN thrives as an e-commerce business, specializing in the provision of health-conscious fare, superfoods, natural cosmetics, and products crafted to enhance well-being. Sprouting into existence around April 2013, GREEN seized upon its dedication to championing a wholesome lifestyle and delivering top-tier, natural offerings.

### 2.3.2 Venture biographies of Varna's entrepreneurial ecosystem

Five venture biographies were collected in Varna, Bulgaria:

- BEES BUZZ ADS is a digital marketing agency. The main services provided by Bees buzz ads are: Creation of digital content – graphical design, copywriting, photography, video, info graphics; Performance marketing – advertisement campaigns in social media, websites, email campaign, media planning; Account management; Business branding Online advertisement, Consulting.
- The mission of COMP is to help SMEs realise their full potential by providing them with entire business software solutions. The ideal client for the software developed by Comp is an SME with personnel of 5-10 people and up to 100 people. Usually, these are trade companies – wholesale and retail, small manufacturing companies, and services companies.
- IT CENTRE VARNA provides possibilities for software development, maintenance and support teams, as well as outsourcing of the activities. The approach is tailored-oriented – it could boost clients' SW development projects with a dedicated team, delivering extra skills and knowledge.
- CLOUD SERVICES provides universal and adaptive cloud services that aim to address the specific needs of customers. Cloud Services has built its cloud using the latest advancements in multi-tenant cloud architecture, relying on cutting-edge server hardware, networking, security, virtualization, and management technology. They host their infrastructure in an independent class Tier 3 data centre in Sofia, Bulgaria.
- ECAP is a startup company established in 2017 to develop an innovative expert system for planning and managing waste ship disposal processes in line with the Environmental Compliance Assistance Program (ECAP). ECAP is a software system installed on a vessel navigation bridge to help plan and monitor the vessel's environmental operations. It uses electronic navigation charts and calculates the vessel's position in relation to regulated areas. The operational aspects of the ECAP systems alone are useful for the ship's crew, although at its core is the requirement to provide various levels of environmental regulations and their respective boundaries.
- KINETIK AUTOMOTIVE COMPANY's business model is to offer electric karting as a service: The company has developed one of the best designs, combined with their own software. This made it possible to adjust the car's characteristics to the pilot's progress by only changing the software settings, thus eliminating the necessity to change the vehicle itself – as was the case with the other vehicles.

### 2.3.3 Venture biographies of the Ruhr's entrepreneurial ecosystem

Ecosys4you collected altogether six venture biographies from the Ruhr region:

- AWARE7 is a start-up specialised in cybersecurity services, especially lifehacking, pentesting and phishing simulation as well as consulting for B2B. As a university spin-off, the company also participates in third party-funded applied cybersecurity research projects.
- Exchange Education for Habitation has established itself as an impactful non-governmental social enterprise within the field of education, providing services and support for economically disadvantaged children. Their services follow threefold goals – providing educational mentoring for children, offering free-of-charge living for the mentors (i.e. young adults), and networking within the neighbourhoods to enhance the general quality of life through cooperation. Essential for the business model is that they receive the habitation space at a very low fee or even rent-free and take care of it (e.g. renovate) at their own costs.
- SustainConsult supports companies during their sustainable transformation from strategy to implementation of new sustainable business models and products. At the beginning, the startup didn't have to do any acquisition, as it had signed a contract with the Corporate and now continued to work for the Corporate as an external company instead as an employee. The company discussed funding opportunities with the economic development agency, but none were forthcoming. The company then went to a sustainable bank and took out an overdraft facility. Nowadays, the company's majority of customers are situated in the Ruhr, others in Germany and in Switzerland. SustainConsult offer consultancy, events and workshops for startups and sustainable companies. The company certifies others according to the B Corp certification and undertakes sustainability assessments.
- ChangeFashion operates as a clothing rental service that follows a "capsule" approach. The term "capsule" is drawn from the Capsule Wardrobe movement, in which wardrobes are built around a small selection of clothing items that can be effortlessly mixed and matched. These capsules typically consist of 5-8 clothing pieces, with the exact number depending on the season and the capsule's contents. For instance, a pair of pants can be paired with more items than a dress, reducing the overall number of clothing pieces required. Customers can choose pre-assembled capsules or create their own, and clothing items can be swapped out at any time. Nevertheless, since the main motto of the company is sustainability, there is an effort to avoid unnecessary traffic. Approximately once a month people do change an item.
- HandySec develops security solutions for mobile phones that interact with other entities. The company has developed an app and a corresponding platform for this end. As of 2023, the most revenues came from development and consultancy projects for B2B clients. HandySec adopts their technologies to the apps and platforms of the clients and implements solutions for them.
- PHYSEC's key technologies bring cryptographic approaches and hardware devices together to allow the secure operation of sensors in insecure environments. The technology represents the current research frontier and was developed in a cybersecurity institute in the Ruhr. Hence, PHYSEC represents a clear deep-tech start-up.

### 3 Cross-ecosystem comparison

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Varna in Bulgaria, the Ruhr region in Germany, and Slovenia represent diverse yet vibrant entrepreneurial ecosystems, each with unique strengths, challenges, and approaches to supporting entrepreneurial endeavours. This comparative analysis aims to delve into the distinctive features of these ecosystems, shedding light on their respective dynamics and potential for nurturing entrepreneurial success.

Nestled along the Black Sea coast, **Varna** epitomizes the burgeoning start-up scene in Bulgaria. Despite being a relatively smaller city than its counterparts, Varna boasts a rich pool of talent and a growing network of incubators and accelerators. The city's strategic location, affordable cost of living, and increasing access to funding have attracted entrepreneurs from various sectors, particularly technology-related. Moreover, government initiatives and EU funding programs have played a crucial role in catalysing Varna's entrepreneurial ecosystem, offering grants, mentorship, and infrastructure support to budding start-ups. However, limited access to venture capital and the location outside of the capital region remain persistent challenges, inhibiting the scalability and sustainability of ventures in Varna.

Situated at the crossroads of Central Europe, **Slovenia** has emerged as a beacon of entrepreneurial success in the region. Building upon a legacy of innovation and craftsmanship, the country fosters a culture of entrepreneurship deeply rooted in creativity and resourcefulness. Ljubljana, the capital city, serves as the epicenter of Slovenia's start-up ecosystem, characterized by a vibrant community of entrepreneurs, investors, and support organizations. Government initiatives such as the Start-up Slovenia program and tax incentives for research and development have bolstered the growth of high-tech start-ups in sectors like information technology, biotechnology, and green energy. Furthermore, Slovenia's strategic location within the European Union provides start-ups with access to a larger market and funding opportunities. Nonetheless, limited access to skilled talent and the challenge of scaling beyond national borders pose significant hurdles for Slovenian start-ups aiming for global expansion.

The **Ruhr** region has undergone a remarkable transformation into a hub of innovation and entrepreneurship. With a legacy of coal mining and heavy industry, the Ruhr has embraced a culture of resilience and adaptation, fostering collaboration between traditional sectors and emerging start-ups. Boasting renowned research institutions and a skilled workforce, the region drives innovation in advanced manufacturing, energy, and environmental technologies. Furthermore, public-private partnerships and grassroots initiatives have nurtured a supportive ecosystem, offering co-working spaces, mentorship programs, and access to international markets. However, the Ruhr faces challenges such as demographic shifts and the need for continuous reinvention to stay competitive in a rapidly evolving global economy.

Varna, Slovenia and the Ruhr represent diverse models of entrepreneurial ecosystems, each shaped by its unique socio-economic context and historical legacy. While Varna capitalizes on its strategic location, government support and high-tech competences to attract start-ups, the Ruhr leverages its expertise in structural change to drive innovation. Slovenia, on the other hand, thrives on a culture of creativity and government initiatives to nurture an entrepreneurial ecosystem. Despite their differences, these regions share a common goal of fostering entrepreneurship as a catalyst for economic growth and societal advancement. By learning from each other's strengths and addressing their respective challenges, Varna, the Ruhr, and Slovenia can continue to cultivate vibrant entrepreneurial ecosystems that spur innovation, and create jobs.

## 3.1 Strengths

**Varna's** entrepreneurial ecosystem boasts several key strengths that contribute to its vibrant start-up scene. Firstly, the presence of six universities in the vicinity ensures a rich talent pool of skilled graduates and researchers, driving innovation and entrepreneurship forward. Secondly, the ecosystem benefits from a robust support infrastructure comprising NGOs, co-working spaces, and accelerators, which provide essential mentorship and resources to start-ups. Lastly, Varna's strategic location with access to transportation networks and international markets facilitates efficient scaling and expansion opportunities for businesses. Together, these factors create a conducive environment for entrepreneurial growth and success in Varna, establishing it as a dynamic hub for innovation and start-ups in the region. Continued investment in these strengths will further propel Varna's entrepreneurial ecosystem and solidify its position as a leading destination for aspiring entrepreneurs.

**Slovenia's** entrepreneurial ecosystem thrives on several key strengths that contribute to its vibrancy and success. Firstly, the supporting infrastructure, including entrepreneurial incubators, technology parks, and regional development agencies, is strategically distributed across the entire territory of Slovenia, ensuring accessibility and support for start-ups nationwide. Secondly, a culture of collaboration and networking among ecosystem actors fosters innovation and knowledge sharing, nurturing a dynamic entrepreneurial environment. Moreover, Slovenia benefits from access to European funding programs, which support infrastructure development and entrepreneurship initiatives, further fueling growth and innovation. Additionally, the country's global recognition is bolstered by the presence of at least one unicorn start-up, enhancing its reputation as a hub for innovation and entrepreneurship. Furthermore, access to quality education and a skilled workforce contributes to a favourable environment for start-ups, enabling them to thrive and innovate. Lastly, the presence of role models, represented by large and successful start-ups, inspires and guides aspiring entrepreneurs, driving further growth and success within Slovenia's entrepreneurial ecosystem.

The entrepreneurial ecosystem in the **Ruhr** exhibits several notable strengths that underpin its vibrancy and potential for growth. Firstly, the region's polycentric nature fosters diverse specializations, allowing for a rich tapestry of innovative ventures across various sectors. Strong networking between ecosystem actors further enhances collaboration and knowledge exchange, fueling innovation and entrepreneurship. Moreover, the presence of robust support infrastructure at universities and the municipal level provides crucial resources and mentorship to budding start-ups. The complementarity between different support mechanisms amplifies their effectiveness in nurturing entrepreneurial success. Additionally, the ecosystem benefits from a wide range of activities spanning local, regional, national, and international levels, facilitating broader exposure and opportunities for start-ups. Academic excellence in relevant fields such as ICT, cybersecurity, and healthcare-tech ensures a solid foundation for deep tech start-ups to flourish. Furthermore, the current public support for start-ups in their pre- and early foundation phases underscores a favourable environment for entrepreneurial endeavours to thrive and succeed. These strengths collectively position the region as a fertile ground for innovation and entrepreneurship, poised for further growth and development in the years to come.

## 3.2 Weaknesses

**Varna's** entrepreneurial ecosystem faces several weaknesses that hinder it from unfolding its full potential. Firstly, the centralized nature of the ecosystem in Sofia creates disparities in resources and opportunities, leaving entrepreneurs in other regions at a disadvantage. Additionally, a lack of robust financial regulations and instruments, especially for early-stage start-ups, restricts access to vital capital and funding, stunting growth and innovation. The ongoing brain drain exacerbates the issue, as talented

individuals seek opportunities abroad, depleting the local talent pool and stifling entrepreneurial endeavors. Furthermore, the ecosystem lacks a mature network of business angels, limiting funding options for aspiring entrepreneurs. Reliance on project financing also poses challenges, leading to instability and hampering long-term sustainability. Lastly, the absence of strong role models dampens enthusiasm and impedes the development of a vibrant start-up culture, hindering the ecosystem's growth and competitiveness on the global stage. Addressing these weaknesses is crucial to fostering a more inclusive, resilient, and dynamic start-up ecosystem in Varna.

**Slovenia's** entrepreneurial ecosystem faces several notable weaknesses that impede its full potential. Firstly, spatial planning limitations and a shortage of suitable business zones pose significant challenges, particularly in rural areas, hindering entrepreneurial development and limiting opportunities for growth outside of urban centres. Additionally, there is a noticeable centralization tendency, with many support activities concentrated in Ljubljana, the capital of Slovenia, which can lead to disparities in resources and opportunities for entrepreneurs in other regions. Furthermore, the ecosystem's dependency on specific industries poses risks, highlighting the need for further diversification to reduce vulnerability to economic fluctuations. Lastly, limited access to capital remains a critical issue, particularly for larger scale projects, prompting some start-ups to seek funding abroad due to perceived constraints within the local ecosystem. Addressing these weaknesses requires concerted efforts to enhance spatial planning, decentralize support activities, promote industry diversification, and improve access to capital, thereby fostering a more inclusive and resilient entrepreneurial ecosystem throughout Slovenia.

The **Ruhr's** entrepreneurial ecosystem is not without its weaknesses. While there is strong support for start-ups in their early phases, the infrastructure for later stages is comparatively lacking, potentially hindering the growth and scalability of ventures. Additionally, the employment effects of start-up activities remain unclear, posing challenges for policymakers and stakeholders. The presence of double structures across municipalities, such as multiple start-up competitions and pitches, may lead to fragmentation and inefficiencies within the ecosystem. Furthermore, attracting top-level start-ups is challenging due to the stronger regional images of neighbouring cities like Cologne and Düsseldorf. The absence of a unicorn start-up to date also highlights a gap in the ecosystem's track record of success. Moreover, while seed and scale-up finance exists, it may not be as readily available as in other regions of Germany like Munich or Berlin, posing a potential barrier to growth for start-ups in the region. Addressing these weaknesses will be crucial for fostering a more robust and competitive entrepreneurial ecosystem.

### 3.3 Opportunities

**Varna's** entrepreneurial ecosystem presents numerous opportunities for growth and development. Strengthening collaborations between support organizations and academic institutions can facilitate knowledge exchange and talent development, driving innovation. Establishing a local fund dedicated to start-up support would offer sustainable financing solutions tailored to the needs of Bulgarian start-ups, fostering their growth at various stages. Moreover, investing in branding and marketing efforts can elevate the visibility of Varna's entrepreneurial ecosystem globally, attracting talent, investors, and business opportunities. Expanding the start-up support infrastructure through initiatives like incubators and innovation hubs will create a more conducive environment for entrepreneurial success, further catalysing economic growth and innovation within the country. Embracing these opportunities can propel Bulgaria's start-up ecosystem to new heights of success and competitiveness on the global stage.

To further enhance **Slovenia's** entrepreneurial ecosystem, several strategies can be implemented. Firstly, there is an opportunity to specialise in key sectors such as healthcare and ICT, leveraging existing

strengths to enhance competitiveness on a global scale. Exploring collaborative funding models and consortium investments can support larger-scale projects, fostering innovation and growth. Regional expansion beyond the capital region can promote balanced development throughout Slovenia, tapping into untapped potential in rural areas. Continued efforts to promote innovation and entrepreneurship are crucial for nurturing the emergence of more innovative start-ups. Networking and internationalization efforts can open doors to global markets and attract investments, propelling the ecosystem onto the global stage. Moreover, working with young generations to develop creativity, innovativeness, and entrepreneurial skills from an early age can cultivate a future-ready workforce and foster a culture of entrepreneurship and innovation throughout the country. By implementing these strategies, Slovenia can unlock its full potential and become a leading hub for entrepreneurship and innovation in Europe.

Amidst the weaknesses, the **Ruhr's** entrepreneurial ecosystem presents significant opportunities for growth and transformation. Firstly, the dynamic developments driven by start-ups and support infrastructure have the potential to catalyse a positive shift in the regional mindset towards innovation and entrepreneurship. Additionally, despite historically low levels of cooperation between cities in the Ruhr due to intra-regional competition, collaboration among public actors involved in the ecosystem shows promise for fostering synergy and mutual benefit. Furthermore, the emergence of many early-stage start-ups with potential to become role models in the near future presents an opportunity to inspire and guide aspiring entrepreneurs, driving further innovation and growth within the ecosystem. By seizing these opportunities and fostering collaboration, the Ruhr region can unlock its full potential as a thriving hub of entrepreneurship and innovation, paving the way for sustainable economic development and prosperity.

### 3.4 Threats

**Varna's** entrepreneurial ecosystem faces critical threats that must be addressed for sustained growth. Dependency on project funding poses risks due to fluctuating cycles and limited long-term sustainability. Additionally, convincing potential entrepreneurs to choose start-ups over lucrative opportunities abroad is challenging without strong support mechanisms and success stories to inspire confidence. Overcoming these threats requires diversifying funding sources and enhancing support structures to attract and retain entrepreneurial talent, ensuring Varna remains competitive in the start-up landscape.

Several significant challenges pose threats to **Slovenia's** entrepreneurial ecosystem. The centralization of activities in Ljubljana raises concerns about regional disparities and neglect of rural areas, potentially stifling entrepreneurial growth outside the capital. Infrastructure limitations, including spatial planning constraints and transportation issues, may impede the expansion of business zones and hinder startup development. Moreover, global economic uncertainty can disrupt foreign investment flows and limit start-ups' access to capital, impacting their growth prospects. Intense competition from neighbouring countries for start-ups and foreign investments adds further pressure on Slovenia's ecosystem. Additionally, regulatory changes may introduce uncertainties and complexities, affecting the ease of doing business for start-ups. Finally, the competition for personnel due to a lack of skilled labour poses a significant challenge, potentially hampering the ability of start-ups to attract and retain talent essential for their success. Addressing these challenges requires proactive measures, including infrastructure improvements, regulatory stability, and talent development initiatives, to safeguard and strengthen Slovenia's entrepreneurial ecosystem.

The entrepreneurial ecosystem in the **Ruhr** region faces several notable threats that could impede its growth and sustainability. Firstly, much of the start-up infrastructure relies on project-bound public funding, raising concerns about future funding uncertainty beyond 2024. Additionally, competition for



skilled labour poses a significant challenge, as start-ups vie for talent amidst a shortage of qualified personnel. Moreover, competition for founding teams, while less common, is mentioned in interviews, indicating potential challenges in forming and retaining cohesive start-up teams. Addressing these threats will require strategic planning, diversification of funding sources, efforts to attract and retain skilled labour, and initiatives to foster collaboration and teamwork within the ecosystem. By mitigating these threats, the Ruhr region can strengthen its entrepreneurial ecosystem and enhance its competitiveness on the global stage.

### 3.5 Conclusions

Varna's entrepreneurial ecosystem is characterised by the presence of six universities as a strengths. This facilitates a rich talent pool and access to resources, fostering a dynamic hub for innovation and start-ups. Meanwhile, Slovenia benefits from a well-distributed supporting infrastructure, fostering collaboration and access to European funding programs. The presence of a unicorn start-up adds to its global recognition, while access to quality education contributes to a favourable environment for start-ups. In contrast, the Ruhr's polycentric nature and strong networking between ecosystem actors create a diverse and vibrant landscape for entrepreneurship. Robust support infrastructure at universities and municipal levels further enhances opportunities for start-ups, while academic excellence in relevant fields ensures a solid foundation for deep tech ventures. Overall, while each ecosystem has its unique strengths, they all contribute to fostering innovation, collaboration, and entrepreneurial success within their respective regions. Continued investment and collaboration will further propel their growth and development in the future.

The entrepreneurial ecosystem in Varna encounters challenges such as centralised resources in Sofia, lack of financial regulations, and brain drain, hindering its competitiveness. Slovenia faces hurdles like spatial planning limitations, centralization in Ljubljana, industry dependency, and limited capital access, hampering its growth potential. Meanwhile, the Ruhr's ecosystem grapples with unclear employment effects, and competition from neighbouring cities, impeding its scalability and success. While Varna lacks diverse resources and regulatory frameworks, Slovenia struggles with industry concentration. The Ruhr contends with insufficient support for later-stage start-ups and competition from established hubs in other cities. Overcoming these weaknesses demands decentralized support and enhanced funding access. Addressing these challenges is essential for fostering inclusive and resilient entrepreneurial ecosystems in Varna, Slovenia, and the Ruhr, propelling them towards sustainable growth and global competitiveness.

Varna's entrepreneurial ecosystem offers ample opportunities for growth, including strengthening collaborations between support organizations and academic institutions, establishing a local fund for start-up support, and expanding the start-up support infrastructure. Similarly, Slovenia can capitalize on opportunities such as specialization in key sectors, collaborative funding models, regional expansion, and fostering innovation and entrepreneurship among young generations. Meanwhile, the Ruhr's ecosystem presents opportunities for positive transformation through dynamic developments driven by start-ups, enhanced collaboration among cities, and the emergence of role model start-ups. By seizing these opportunities and fostering collaboration, the Ruhr region can realise its potential as a thriving hub of entrepreneurship and innovation, fostering sustainable economic development and prosperity.

Varna's entrepreneurial ecosystem grapples with threats like dependency on project funding and the challenge of attracting entrepreneurs away from lucrative opportunities abroad. Diversifying funding sources and enhancing support structures are vital to ensuring sustained growth and competitiveness.

Similarly, Slovenia faces threats such as centralisation in Ljubljana, infrastructure limitations, global economic uncertainty, and intense competition from neighbouring countries. Proactive measures, including infrastructure improvements and talent development, are necessary to safeguard and strengthen Slovenia's ecosystem. Meanwhile, in the Ruhr region, reliance on project-bound public funding, competition for skilled labour, and challenges in forming cohesive founding teams pose significant threats. Strategic planning and efforts to diversify funding sources and attract talent are crucial for enhancing the region's entrepreneurial ecosystem and global competitiveness. Addressing these threats collectively requires concerted efforts and proactive measures across all three regions to foster sustainable growth and innovation.

### **3.6 Outlook**

This report summarises the Ecosys4you activities of the first project months. In the forthcoming year, the project will focus on developing specific activities that will allow the establishment of innovative resource flows between the three entrepreneurial ecosystems. The resource flows are the proposed Ecosys4you activities - Joint Classes, Mentoring, Internships, and Co-ideation Challenges – aiming to nurture entrepreneurial mindsets and practical skills across the three ecosystems, thereby strengthening the internationalisation of each ecosystem. The Joint Classes offer a unique blend of theoretical frameworks and real-life experiences, leveraging the expertise of start-up entrepreneurs from different regions. This approach enriches students' learning by applying theory to practical start-up challenges, fostering innovative thinking and problem-solving abilities. The Mentoring provides guidance by connecting students with experienced mentors from the private sector. Through virtual sessions and structured tasks, mentees gain insights into various stages of business development, enhancing their entrepreneurial acumen and readiness for the start-up journey. The Internships serve as a pivotal opportunity for hands-on learning, bridging the gap between academia and industry. By aligning interns' expectations with the objectives of young companies, this program prepares aspiring entrepreneurs for the realities of start-up ventures, fostering a culture of innovation and resilience. The Co-ideation Challenges further stimulate creativity and collaboration by engaging partners to address diverse business problems. The strategic approach to collecting and structuring information ensures maximum benefit for future founders, organizations, and educators while promoting inclusivity and diversity in entrepreneurship. Overall, these activities are truly complementary compared to the current endeavours in the three ecosystems. They hold the potential to cultivate networking between the three ecosystems, thereby contributing to the ecosystems' internationalisation. Through collaborative efforts and innovative strategies, they can contribute significantly to shaping the future of entrepreneurship across regions.

# Entrepreneurial Ecosystem Varna, Bulgaria

*Ralitsa Zhekova, Mariya Zlateva and Irina Kircheva (RAPIV)*

## 1 Key characteristics of the ecosystem

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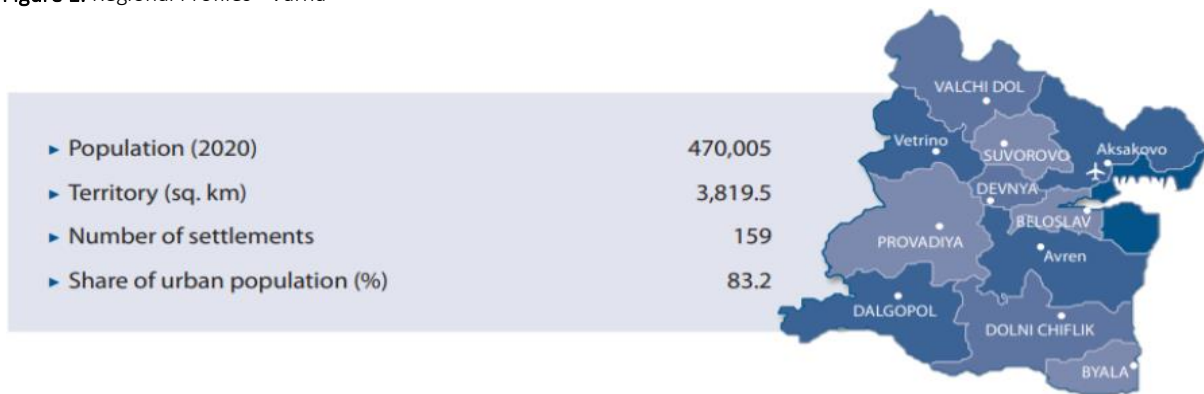
Just a decade ago, Bulgaria did not really have a startup ecosystem despite being traditionally strong in the IT sector. However, since then, the country has been on a steady trajectory to transition from an outsourcing destination into a major innovation hub.

Being a relatively small market, Bulgaria also checks several boxes for a robust startup ecosystem: strong digital infrastructure, variety of support programs, and top tech talent. Today, Bulgaria is home to over 400 startups, 15 venture capital and growth equity firms, and an increasing number of accelerators, supporting associations, and co-working spaces. More and more founders who set up their ventures here are now reaching Series A or even later rounds. There is over €200M in VC funding available for local entrepreneurs as of the beginning of 2021. The local startup ecosystem has also achieved a major milestone in 2022 with its first unicorn, Payhawk. This success story has brought new breath to the ecosystem as Bulgaria grabs the attention of the American and West European VCs.

Varna is the largest city in north-eastern Bulgaria, located along the Black Sea coast and Varna Lake. It is the administrative centre of the municipality and the region. Today, over 5% of the population of the country lives in Varna (Institute for Market Economics; Varna City of Knowledge, Economic Profile and Development Trajectory).

In 2020, Varna remained among the districts with very good demographic development, ranking second after the capital city. Varna is among the districts with the highest share of urban population – 83.2%, compared to 72.9% in the country, although its density is close to the average values – 1,800 persons/sq. km, against the national average of 1,500 persons/sq. Km. (Institute for Market Economics; Regional Profiles - Varna, 2021).

**Figure 1.** Regional Profiles - Varna



Source: Institute for Market Economy, 2021

Varna is an attractive international educational center. There are 6 universities on the territory of the municipality – University of Economics, Technical University, Medical University "Prof. Dr. Paraskev Stoyanov", Naval Academy "Nikola Vaptsarov", Varna Free University "Chernorizets Hrabar" and Higher School of Management; 3 colleges - College of Tourism, Medical College and Technical College, as well as 65 schools.

Varna has unique characteristics that enable the interweaving of talent and scientific potential with entrepreneurship and business ventures. The 13,000 students in the humanities and social sciences – with a focus on economics and management – support the diverse profile of the local economy and provide the maritime capital's entrepreneurial and business culture. The 15,000 students in technical and applied sciences set the specific economic profile of Varna, with the greatest potential emerging in medicine, information technology, transport and shipping. These are all areas that have shown increasing interest in the last 5 years. Successful HEIs have the potential to attract and retain research staff who, in turn, can count on increased investment in equipment and facilities. This is a prerequisite both for increasing scientific developments and for the transfer of results into applied business ventures. In recent years, medicine has established itself as one of the leading sectors in the economy of Varna, based entirely on the connection between science and business. Medical University - Varna educates 5,300 students, of which 1,500 are foreign (2019). The regional implementation of these personnel exceeds 50%, which shows the connection between the university and the health sector in Varna.

The universities in Varna are oriented towards the new trend and are directed towards information technologies. Five universities from Varna have specializations in the field of informatics and computer science, educating over 2,500 students - an increase of about 750 people in the last five years. The leader in this regard is the Technical University - Varna with nearly 1,700 students in the field of communication and computer technology. The regional implementation of these personnel is over 40%, which means that almost half of the attracted students are realized within the local economy. TU-Varna also opened its own school of computer science, which confirms the trend for secondary education to be oriented towards the digital sphere.

## 2 Distinctions of the entrepreneurial ecosystem

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*“The location outside the capital and the difficult accessibility (connection) definitely hinder closer integration and faster development because the main institutions and important entrepreneurial events and meetings are concentrated in the capital. The isolation of Varna and the lack of good connectivity with other European countries creates enormous difficulties in our integration with other European and world ecosystems.” (Interview #1, 07.09.2023).*

The Bulgarian startup scene is a hotspot for European entrepreneurs and digital nomads, lured by the low cost of living and smart and effective special tax benefits offered by the public sector. Bulgaria boasts one of the lowest personal and corporate tax rates in the European Union, which helps attract foreign investors and tech talent. More promising steps are being taken with the government establishing new agencies to promote entrepreneurship and attract global startups, such as Invest Sofia, and launching initiatives like the startup visa. Besco, is an interesting example of a startup ecosystem think tank which helps the public sector shape policies related to startups and macroeconomic environment supporting the growth.

On the flip side, Bulgaria lacks the resources to support its own startup ecosystem, and is heavily relying on EU funding. This funding was crucial in allowing the ecosystem to jump start, but might slow down further growth. The current mechanisms that are being copied from the EU playbook, such as the Fund of Funds<sup>1</sup>, could distort the natural growth of the ecosystem and drive it towards micro management with a lack of market focus and private sector investment. The Bulgarian ecosystem could use less micro management and more infrastructure work on its promotion and strategy. One of the biggest challenges of the ecosystem, which has become an IT outsourcing hub, will be to convince its potential entrepreneurs to give up on excellent conditions while working for foreign companies and dive into building their own startup.

Focus industries with the most potential for technology disruption and growth in Bulgaria are:

### **Artificial Intelligence**

In recent years, there has been a plenitude of local startups building AI-based products in various industries – enterprise software, health, finance, marketing, agriculture, travel, and others.

### **Fintech**

With over 70 fintech companies, 2 corporate fintech accelerators, and a fintech association aiming to develop the community further, this vertical<sup>2</sup> is probably the most advanced in Bulgaria.

### **Healthtech**

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<sup>1</sup> Fund of Funds is established in 2015 and is wholly owned by the Bulgarian state. The Fund of Funds combines resources earmarked for implementation of financial instruments under the national operational programmes, which currently encompass Regions in growth, Innovation and competitiveness, Environment and Human resources development.

<sup>2</sup> Industry vertical describes a group of companies that focus on a shared niche or specialized market spanning multiple industries.

Healthtech is another quickly developing segment with promise in verticals like 3D printing, bioconversion, as well as digital health platforms.

Varna is the second most innovative place in the country. The StartupBlink's 2022 Global Ecosystem Report, which evaluates the tech performance of startup ecosystems around the world, [ranks Varna](#) – the so-called maritime capital of Bulgaria, as the 51th most innovative city in Eastern Europe and the 2nd in Bulgaria, after Sofia.

Varna is becoming famous for its potential to foster innovation, raise engineering and business talent, and attract bigger tech companies from the capital and across the region. The city is also home to six universities, among which the Technical University in Varna and The University of Economics – Varna, and has an IT-specialized high school – the [High School of Computer Modeling and Computer Systems](#). This explains why, according to Seedblink, Varna is a sweet spot for the development of Software, E-commerce, Retail, Marketing, and Sales startups.

At the end of October 2022, the city saw the launch of the second European Deep Innovation Port in Europe as part of the New Innovation Agenda of the EU – the [Varna Deep Tech Innovation Port](#) at the University of Economics -Varna. The main goal of the initiative is to turn Varna into an attractive center for the creation and implementation of deep technological innovation and create synergies between different stakeholders – academia, business, startups, youth organizations, and local administration.

### 3 Key actors

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The Varna Region startup ecosystem has a good balance between public and private institutions, different types of stakeholders (incubators, funds, public institutions, etc.) and corporations. It is also very open to cooperate with other startup ecosystems. Lots of forums are being organized lately to make all stakeholders' voices be heard and taken into consideration and, consecutively, their efforts to be united for common goals.

The key stakeholders of Varna regional startup ecosystem are (per type):

#### Startup:

- Simvoly, Ultraplay, Aitiss, Composity Ltd, Mimirium, Orderadmin, Casualino, Workiton.com, VEVS, iosoftware, Bevine, CoLumbo, PubGalaxy, Kinetik, Econic One, Primeholding, Nula.bg, etc.

#### Investors:

- Launch Hub Ventures, Eleven, Neveq, Bright Cap Ventures, Empower Capital, Black Peak Capital, Rosslyn Capital Partners, BBF Angels Club, CEO Angels Club, etc. (all of them based in the capital)

#### Public institutions:

- Fund of the Funds, Bulgarian Small and Medium Enterprises Promotion Agency (BSMEPA), Municipality of Varna.

#### NGOs:

- Regional Agency for Entrepreneurship and Innovations – Varna, Association Business Agency, Beehive Co-working Space, Varna Economic Development Agency, Bulgarian Business Forums, Smart Varna Foundation, ICT Cluster Varna, BioMed Foundation.

### Co-Working Spaces:

- Switch, Innovator, WolloW, Work del Mar, VarnaLab.

## 4 Interactions between ecosystem actors

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*“But at the end of the day, it's not so much the big individual events, but the many small opportunities” (Interview #4, 24.07.2023).*

In the past 5 years, Varna has become one of the digital hubs and innovation centers in Southeastern Europe and the reasons behind that are several:

1. Varna has a growing young population – more than 40 000 students, with 6 universities in different fields: technical, economics, medical, maritime, etc. and every year it attracts not only students from the country, but also many foreigners to graduate and work in the city.
2. One of the most favourite places for developers, students, entrepreneurs and digital nomads to work and network are surely the main co-working spaces and hubs that were established – Switch, Innovator, Wollow, Work del Mar, VarnaLab, CryptoVarna.
3. A couple of startup and innovation-related events and initiatives are held in the city to showcase and inspire local tech talents and founders. One of these events is the annual [Startup Weekend Varna](#) which gathers groups of developers, business managers, and marketing gurus and allows them to work on a startup idea for 54 hours before pitching it in front of investors. ABLE Activator, the Bulgarian entrepreneurship program, also comes to Varna each year to hold the [ABLE Weekend Activator Varna](#). Innowave Summit gathers world famous experts and speakers from some of the biggest tech companies to help the local businesses grow and go to global markets. Another great event is the Startup Ventures, where people with ideas broadly learn how to validate a startup from top experts. There are many workshops, events and trainings organized by different business support organizations like RAPIV, Smart Varna, Business Agency Association, Beehive, etc.
4. In Varna only for the last 2 years have been found more than 20 startups in different areas – fintech, blockchain, medicine, IoT, 3D printing and more. This shows to potential investors and business angels the city has a future in terms of developing future unicorns who can boost the economy of the region.
5. Some of these startups are already expanding outside the border with the support of some national VC funds and organizations such as: LaunchHub, Eleven Ventures, Brightcap Ventures and others.
6. Some large tech companies have founded their main centers and headquarters in the city which opened thousands of work places, which also reduced the unemployment rate to below 3% and boosted the economy.

## 5 Connection between (specific) ecosystem actors and the HEIs

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Universities and Higher educational institutions (HEI) are actively supporting entrepreneurship and participate in initiatives of ecosystem actors. The support is provided in several directions:

The second European Deep Innovation Port in Europe as part of the New Innovation Agenda of the EU – the [Varna Deep Tech Innovation Port](#) is established at the University of Economics -Varna. The main goal of the initiative is to turn Varna into an attractive center for the creation and implementation of deep technological innovation and create synergies between different stakeholders – academia, business, startups, youth organizations, and local administration.

**University of Economics Varna Accelerator** works to support progressive entrepreneurial projects and helps develop entrepreneurial culture.

The University of Economics Varna with its department for Agricultural Economics participates actively in the organisation of entrepreneurship support activities of EIT Food Hub Bulgaria, including **Challenge lab**. In the 2023 year edition were involved 20 participants, 8 mentors and about 10 university associated professors who provided their expertise on different topics. The Challenge Lab is a 2.5 days- event targeting startups in agrifood sector, starting from shaping business ideas for meeting specific practical challenges, active work of teams with mentors/ experts and presenting the business ideas at a pitching competition for winning a prize.

**Women entrepreneurship centre (EWC)** at the **Varna Free University** is established with the aim to facilitate new company formation by providing an entrepreneurial nurturing environment for female startup and spin-out companies; alleviating their survival and growth, thus encouraging them to reach their full potential. EWC aspire to develop individual talent, skills and personality to give each female business the best possible start, thus fostering entrepreneurship at a local and national level. Within the activities of EWC in 2021 and 2022 RAPIV organized 5-months training and mentoring **EWA Bulgaria Programme** for support of women in agrifood sector, financed by EIT Food.

**D-Care Smart Care Labs and D-Care learning programme** have been established to support startups from smart care services and eHealth sector in realization of their solutions from idea to market ready product. Medical University Varna and Varna Free University have expressed their support for the initiative. Both universities have developed a joint master's degree programmes for AI in Biomedicine and health with the aim to create a multidisciplinary educational environment for the development of staff with integrated competencies in the field of biomedicine and health, capable of creating teams, models, approaches, products and services to solve medical and health problems in the digital environment

## 6 Financing mechanisms

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On ecosystem level, access to finance is limited because there are no regional funds for supporting startups and entrepreneurship.

Business support organisations (BSOs) and innovation actors implement initiatives for fostering entrepreneurship like accelerators; training and mentoring programmes on project basis, relying on EU funded projects and programmes.

BSOs redirect founders and companies with growth potential to startup events, VC and business angels that operate on national level and are based in Sofia.



"In support of the startup ecosystem and the entrepreneurs in the Republic of Bulgaria, operates the "Fund manager of financial instruments in Bulgaria" EAD (FMFIB), which provides resources for debt and equity instruments. For the period 2021 – 2027 FMFIB will have at its disposal 1 billion euros. The Ministry of Innovation and Growth is the principal of FMFIB and in just two months managed to secure nearly 700 million euros from them. This is what we call the "perfect storm" for the startup ecosystem in Bulgaria. Since the formation of FMFIB in 2016 more than 2 600 companies and startups have been supported through these financial instruments. Additionally, in Bulgaria we have started issuing startup visas to attract talents and innovators from outside the EU to come and develop their high-tech ideas and businesses in our country", stated Alexander Poulev Minister of Innovation and Growth, Bulgaria.<sup>3</sup>

## 7 Sectoral specifications

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The Varna region has strategically identified "Mechatronics and Microelectronics" and "Informatics and ICT" as key thematic areas for intelligent specialization between 2021 and 2027. These areas align with global technology trends and have the potential to drive economic growth, innovation, and job creation in the region.

One of the primary drivers of Varna's innovation surge is its vibrant academic landscape, including six universities and an IT-specialized high school, nurturing young talent in the fields of technology and computer science. This creates favourable environment for startups in Software, E-commerce, Retail, Marketing, and Sales.

Varna as a coastal city with huge cultural and historical heritage is also a popular tourist destination which explains why there is an increased attraction for entrepreneurs to set up their startups in industries such as Social & Leisure.

These three industries Software and Data, Marketing & Sales, Social & Leisure represent about 90% of the startups represented on the Startup Ecosystem Map of Varna.

## 8 The ecosystem's location

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*"The proximity to the sea creates conditions for the development of maritime tourism, logistics, the Varna airport is located on the territory of Aksakovo and opportunities are created for the development of transport and related activities (interview #2, 11.09.2023)*

Varna is Bulgaria's third-largest city and includes a resort area on the Black Sea coast. In addition to world-class beaches and resorts, the city also has IT, outsourcing and startup opportunities that are only going to increase.

The startup ecosystem in Bulgaria is very centralized. Varna is the 2nd best startup ecosystem in Bulgaria, after Sofia. We're seeing a consolidation process whereby, if someone wants to do a startup, they

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<sup>3</sup> Global Startup Ecosystem Report 2023 - <https://lp.startupblink.com/report-download/>

go to the mainstream ecosystem. Sofia is a very highly centralized ecosystem and serves as leader and driver for the rest of the country.

## 9 SWOT Analysis

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### Strengths

- 6 universities available
- Well developed support ecosystem – NGOs, co-working spaces, accelerators, etc.
- Location of the ecosystem

### Weaknesses

- Centralized ecosystem in Sofia
- Lack of financial regulations & instruments supporting the startups at stage idea
- Lack of financial instruments
- Brain drain
- Still not entirely developed system of business angels
- Support provided mainly by project financing
- Lack of strong role models

### Opportunities

- Improvement of linkages between support organisations and academia
- Development of local fund for startup support
- Promotion of the brand of the startup ecosystem
- Establishment of additional startup support infrastructure

### Treats

- Most of the startup support depends only on project funding
- Hard to convince its potential entrepreneurs to give up on excellent conditions while working for foreign companies and dive into building their own startup

## 10 Lessons Learned for Ecosys4you

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The education and entrepreneurial approach are the main components of the sustainable future as they serve as basis for overcoming the challenges faced by Varna entrepreneurial ecosystem.

However, Varna entrepreneurial ecosystem needs to cooperate closer with more developed European ecosystems to enable learning and to bridge the entrepreneurship/innovation “gap”.

Establishing additional startup support infrastructure based on cross-ecosystem education activities driven by private sector expertise (joint classes, mentoring, internships, and co-ideation challenges) and networking) is a priority for Varna ecosystem.

Through the Ecosys4you partnership between entrepreneurial ecosystems of the regions Ruhr in Germany (a strong innovator), Varna in Bulgaria (a modest innovator), and Maribor in Slovenia (a moderate innovator) will improve the flow of innovation resources and thus will strengthen the entrepreneurial spirit.

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Interview 1 (07.09.2023): Business support organization, regional level.

Interview 2 (11.09.2023): Local authorities municipal level.

Interview 3 (11.09.2023): Business support organization, regional level.

Interview 4 (11.09.2023): Support structure in a university

Interview 5 (13.09.2023): Support structure in a university

# Entrepreneurial Ecosystem Slovenia

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## 1 Key characteristics of the ecosystem

The Slovenian entrepreneurial ecosystem has evolved significantly over time. It began its development following Slovenia's independence and reached a pivotal milestone with its accession to the EU, which brought funding opportunities for infrastructure development and various programs. This ecosystem is geographically widespread, with entrepreneurial incubators and technology parks evenly distributed across different regions (12 statistical regions). Despite Slovenia's relatively small market size, it is characterized by high demand, and success at the domestic level often translates to success in international markets. Below in Table 2 are some basic data about Slovenia.

**Table 2.** Slovenia-some basic data

Area	20,273 km <sup>2</sup>
Population	2,108 million (2021)
Statistical regions	12
GDP (nominal) 2023	65,202 billion USD
GDP per capita	30.840 USD

Share of urban population	53%
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Source: own table

In the following Table 2, we present a map of the 12 statistical regions in Slovenia, which may differ from the naming of individual Slovenian provinces, as we will specifically point out in the text.

**Figure 2.** The Slovenian statistical regions



Source: Based on the data from the Statistical Office of the Republic of Slovenia.

Key actors within this ecosystem encompass larger global corporations that contribute to Slovenia's recognition and attract foreign investment. The first (and only) Slovenian unicorn is Outfit7. Additionally, innovative startups like DEWE Soft and Chipolo, Zemanta, RedOrbit play a crucial role. There are 342 startups and scaleups in Slovenia (<https://www.startup.si/sl-si/startup-mapa/startupi-scaleupi>). 13 very successful and recognized startups are abroad (CubeSensors, BitStamp, DataBox, D Labs, Flaviar (Mimo vrste), Kosei (Pinterest), Celtra, TVBeat, Layer (Invisible Lap), Bellabeat, She's Well).

Various organizations, such as SPS (the Slovenian Enterprise Fund), SID Bank, GZS (Chamber of commerce of Slovenia), OPZ (Craft and entrepreneurship chamber), SPIRIT, AmCham, among others, actively participate in fostering entrepreneurship. The ecosystem also benefits from the engagement of public universities (University of Ljubljana, University of Maribor, University of Primorska) and as well private universities (Univerza in Nova Gorica; while Nova Univerza and Univerza in Novo Mesto do not have a university incubator), which have established their own incubators. University incubators supported 260 startups up to 2015 (no joint recent data) with 90% survival rate (700 new jobs).

The Ministry of Economy, Tourism and sport (MGTŠ) through the public agency SPIRIT and the Slovenian Enterprise Fund (SPS) play vital roles in supporting entrepreneurship initiatives. A culture of interaction and collaboration among ecosystem participants is actively promoted, with programs like SIO (Subjects of innovative environment, there are over 21 incubators, accelerators, hubs, technological parks) facilitating networking opportunities. Moreover, international memberships, such as EBN (European Business Network), aid in benchmarking and certification processes (Interview 7, 8.9.2023)

While the ecosystem does not exhibit strict sectoral specialization, it shows a preference for technology-related ventures. Additionally, niche associations exist within this diverse landscape. The ecosystem's focus is directed toward supporting small businesses, recognizing their potential for significant local impact.

Ljubljana, the capital city, serves as the primary center for business activities and networking. However, regional associations and initiatives, particularly in Štajerska (Podravska statistical region) and Primorska regions (Goriška and Obalno kraška statistical regions), contribute significantly to the ecosystem's development.

Entrepreneurial development faces challenges, primarily related to spatial planning constraints, limited business zones, and transportation issues, particularly in rural areas. There is insufficient land for establishing and expanding business activities for a serious entrepreneur and there is also a shortage of commercial space. While in Gorenjska statistical region for example there are 96 business zones in 18 municipalities none of them are suitable for a substantial investment (Interview 10, 11.9.2023). Rural areas often face insufficient infrastructure, limited public transportation options, and connectivity gaps.

Capital availability generally poses no significant hurdle for entrepreneurs. However, some may seek funding abroad due to perceived limitations within the local ecosystem. There is lack of financial resources to support bigger scale projects. Stakeholders acknowledge the importance of collaboration, consortium investments, and the pursuit of larger-scale projects to further strengthen the entrepreneurial landscape (Interview 11, 11.9.2023)

## 2 What is special about the entrepreneurial ecosystem?

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*“Slovenia is inherently an innovative nation with significant entrepreneurial potential. However, there is a need to change the mindset from school onwards and gain confidence. There is a wealth of knowledge, and we are proficient in multiple languages.” (Interview 6, 8.9.2023).*

Slovenia's entrepreneurial ecosystem stands out for its global orientation, strong support network, sectoral diversification, active collaboration, regional development initiatives, emphasis on small businesses, global connections, and a clear focus on collaborative efforts for sustained growth. However, it faces some challenges and unique characteristics that shape its dynamics:

**Global outlook:** Slovenia's relatively small domestic market encourages entrepreneurs to think globally from the start. Entrepreneurs often aim to expand beyond national borders early in their development, which can lead to rapid internationalization (Interview 6, 8.9.2023).

**Strong support network:** The ecosystem benefits from a robust support network, including a multitude of incubators, technology parks, and business associations. These organizations provide mentorship, resources, and funding opportunities, fostering a nurturing environment for startups and innovative companies. However, systemic financing was present until 2013, ordered by the Entrepreneurship Promotion Act, after which the private sector began to integrate into the supporting environment, leading to a lack of standardization in systemic funding (Interview 2, 11.9.2023).

**Diverse sectoral landscape:** While there is no strict sectoral specialization, the ecosystem exhibits a growing affinity for technology-related ventures (Interview 3, 08.09.2023). This diversification allows for the exploration of various industries and markets, reducing overreliance on specific sectors.

*Active collaboration:* Collaboration among ecosystem stakeholders is actively encouraged and promoted through various programs and memberships in international networks. This collaborative spirit enhances knowledge sharing, innovation, and the overall competitiveness of the ecosystem. However, there is a somewhat confusing array of service providers for startups, and the absence of a true accelerator has led to blurred boundaries between incubators and accelerators (Interview 2, 11.9.2023).

*Regional initiatives:* In addition to the central hub of Ljubljana, regional initiatives in areas like Štajerska and Primorska contribute significantly to the ecosystem's development. These regional hubs support local entrepreneurship and contribute to the overall resilience of the ecosystem. Nevertheless, a clear demarcation of functions and a need for long-term policy and legislation in areas like employment, law on foreigners, and taxes are recognized challenges (Interview 4, 08.09.2023).

*Lack of financing for more demanding development projects:* There is a lack of financing for more demanding development projects (larger scale projects, over 1 mio EUR), especially in the initial stages, where other countries provide higher levels of funding for young companies (Interview 1, 06.09.2023).

*Global connections:* Membership in international organizations like EBN enables benchmarking, international certification, and access to a broader entrepreneurial network. This global perspective enhances the ecosystem's competitiveness (Interview 7, 8.9.2023).

*Recognition of the need for collaboration:* Stakeholders within the ecosystem recognize the importance of collaboration, consortium investments, and the pursuit of larger-scale projects. This acknowledgment underlines the commitment to further strengthening the ecosystem's impact. (Interview 5, 11.09.2023; Interview 3, 08.09.2023)

*Focus on niche and research-oriented products:* Slovenian companies are known for their focus on niche, development-research-oriented products with high added value (Interview 5, 11.09.2023). They generally maintain their focus on niche and research-oriented products/services after entering and operating at the global level (Interview 9, 10.9.2023; Interview 6, 8.9.2023).

### 3 The ecosystem's evolution over time

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The entrepreneurial ecosystem in Slovenia has undergone significant evolution over time, with numerous milestones and developments shaping its growth and dynamics:

*Founding years (Early 1990s):* The foundation of the Slovenian entrepreneurial ecosystem dates back to the early 1990s, following the country's declaration of independence from Yugoslavia in 1991. This period marked the commencement of economic reforms and the transition to a market-based economy (Interview 4, 08.09.2023; Interview 13, 27.9.2023).

*EU accession (2004):* Slovenia's accession to the EU in 2004 was a pivotal moment for the ecosystem. It opened doors to EU funds, which played a crucial role in supporting infrastructure development and various entrepreneurial programs. Pre-accession initiatives like the PHARE programs were instrumental in fostering entrepreneurship (Interview 8, 8.9.2023).

*Incubator movement (1990s - 2000s):* During this period, incubators such as Inkubator Sežana, founded in 1991, LUI – University Incubator of Ljubljana played a crucial role in nurturing early-stage startups. These incubators provided valuable mentorship, workspace, and access to funding, enabling entrepreneurs to transform their ideas into viable businesses (Interview 4, 08.09.2023; Interview 7, 8.9.2023).

*Expansion of support network (2000s):* Over the years, the support network for entrepreneurs expanded significantly, marked by the establishment of additional incubators, technology parks, and business associations. These entities acted as strong pillars of support, offering resources and guidance to startups and innovative companies. (Interview 4, 08.09.2023)

*Private sector integration (2007):* The founding of the startup company Zemanta in 2007, which attracted investors through the London accelerator, marked a significant milestone. This venture, headquartered in New York and later acquired by Outbrain in 2017, contributed to the growth of the startup community in Slovenia (Interview 3, 08.09.2023).

*Seed capital program (SK 2014):* The SPS program in 2014, focused on seed capital, played a vital role in bridging the gap in seed financing for startups, providing essential support for their early-stage development. (Interview 1, 06.09.2023)

*Supportive environment evolution:* The Slovenian ecosystem witnessed the establishment of Entrepreneurship centers throughout the country, designed to support the creation, growth, and development of potential and existing entrepreneurs. The transition from traditional chamber-based support to a more inclusive and accessible environment for entrepreneurs occurred around 1998/1999 (Interview 7, 8.9.2023).

*Global expansion and internationalization support:* Business clubs (15) were established globally with the aim of supporting internationalization efforts, providing access to education, mentors, and external experts. The introduction of a voucher system in 2015 offered incentives for mature companies, further promoting internationalization (Interview 5, 11.09.2023).

*SPOT points (Since 2017):* The introduction of SPOT points, or Slovenian business points, in 2017 introduced a pyramid system with four levels, facilitating various aspects of entrepreneurship, including information, registration, counseling, and global market access (Interview 5, 11.09.2023; Interview 4, 08.09.2023).

*Structured mentoring and expert support:* Recognizing the evolving needs of entrepreneurs, there is a growing emphasis on mentoring and expert support, particularly for startups and innovative companies. Pilot projects are being launched to extend mentoring to a wider range of companies beyond startups.

*Innovative ecosystem separation:* There is a growing recognition of the need to distinguish between the innovative entrepreneurial ecosystem and the traditional craft-entrepreneurial sector, with efforts to cater to both segments (Interview 5, 11.09.2023).

*National initiatives:* SPIRIT, as a national agency (under umbrella of the ministry - MGŠT), plays a vital role in raising the entrepreneurial culture across all types of companies in Slovenia (Interview 12, 15.9.2023).

*Venture capital development:* Milestones in the venture capital landscape include the establishment of venture capital funds (the first was Horizonte Venture Management) and increased financing options for startups and scale-ups (Interview 1, 06.09.2023).

*Legislation and supportive framework:* Acts and programs such as the Act on Encouraging Entrepreneurship have systematically defined conditions for the supportive environment, blending public and private sector efforts.

*Ecosystem expansion:* The establishment of the Ljubljana Technology Park, Ljubljana University Incubator (LUI), Startup Slovenia initiative, Tovarna podjetij, and other organizations contributed to the growth of the Slovenian entrepreneurial ecosystem. (Interview 4, 08.09.2023)



## 4 Key actors

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*“The state has found a way to support entrepreneurship in cooperation with the Chambers of Crafts and of Commerce and Industry. VEM and SPOT points play important role. But entrepreneurship still needs to be encouraged, because we don't have it in our genes” (Interview 13, 27.9.2023).*

The entrepreneurial ecosystem in Slovenia is a dynamic and multifaceted landscape that benefits from the active involvement of a wide range of key actors. These actors collectively contribute to the growth and development of entrepreneurship and innovation in the country. They include:

### *Innovative startups:*

Zemanta, DEWE Soft and Chipolo remain prominent within the ecosystem, serving as inspiring success stories. (Interview 4, 08.09.2023) Their rapid growth and international achievements serve as beacons of possibility, encouraging other entrepreneurs to pursue their innovative ideas and expand their operations beyond Slovenia's borders.

### *Support organizations:*

SPS (Slovenian Enterprise Fund), SID Bank, GZS (Chamber of Commerce and Industry of Slovenia), OPZ (Chamber of Crafts and Entrepreneurship), SPIRIT, AmCham (American Chamber of Commerce in Slovenia), and others continue to be indispensable pillars of support. They offer a wide range of assistance, including funding, mentorship, networking opportunities, and advocacy, thus nurturing a favorable environment for entrepreneurs and businesses. (Interview 4, 08.09.2023) SPIRIT is acknowledged by all stakeholders as playing a significant role in the development of entrepreneurship and support for entrepreneurs in Slovenia as a whole. SPIRIT project SPOT SIO and SIO (Subjects of the innovative environment - idea-builders, startups, scale-ups) is worth mentioning - a project that has been carried out several times - education, mentoring, consulting, expert consulting. (Interview 5, 11.09.2023)

### *Regional development agencies (RRA):*

Regional development agencies like RAGOR in Gorenjska statistical region and Development center (RC) Novo Mesto as well as Pomurski Technology Park, and Technological Park Primorska, play pivotal roles in promoting entrepreneurship at the local/ regional level. They offer targeted resources and guidance to startups and businesses within specific regions, fostering regional economic development.

### *Incubators and accelerators:*

Tovarna podjemov Maribor, Incubators Sežana and Katapult, provide crucial support to early-stage startups. They offer mentorship, training, co-working spaces, and access to funding, helping startups develop their ideas and scale their operations. Katapult enables the testing and production of physical products and has specialized rigorously. What we're currently missing is an accelerator similar to the ABC Accelerator as it used to be in its past, which played a vital role in providing funding for startup ventures. (Interview 2, 06.09.2023) Even if it were an outpost of a foreign accelerator, it would suffice. Although ABC will retain the role of an accelerator to a lesser extent, it will by no means fill the gap in the entrepreneurial environment (Interview 11, 11.9.2023) . Public and one of the private universities have established their incubators, as mentioned previously above, serving as hubs for innovation and entrepreneurship within the academic community. These incubators, like LUI Ljubljana university incubator - offer resources to students and researchers looking to turn their ideas into businesses.

### *Government entities:*

The Ministry of Economy, Tourism and Sport (MGŠT) continues to play a pivotal role in shaping the entrepreneurial landscape through policy development and initiatives aimed at supporting startups and businesses.

#### *The Slovenian Enterprise Fund (SPS):*

It remains a vital source of funding, providing various financing options and support programs to facilitate business growth. One of the primary functions of the SPS is to provide financial support to entrepreneurs and businesses. This support comes in various forms, including grants, loans, equity investments, and subsidies. These financial resources are instrumental in helping startups and established businesses secure the necessary capital for growth, innovation, and development (.

#### *Business associations and chambers:*

GZS, OPZ, play a role in advocating for the interests of businesses and providing platforms for networking and collaboration. Several international chambers of commerce, e.g. AmCham Slovenia, Advantage Austria - Commercial Section of the Austrian Embassy, German-Slovenian Chamber of Commerce and Industry (AHK Slovenia) etc. provide valuable resources, support, and networking opportunities for businesses seeking to expand their international reach and engage in cross-border activities.

#### *Business angels, venture capital funds:*

e.g. South Central Ventures and Fille Rouge Capital, offer crucial financial support and expertise to early-stage startups, helping them bridge the gap between concept and commercialization.

#### *International Networks:*

EBN (European Business and Innovation Centre Network) remains a valuable asset for Slovenian entrepreneurs. It provides opportunities for benchmarking, international certification, and expanding global networks, further bolstering the internationalization of local startups.

#### *State Resources and Support:*

The state, through entities like MGŠT, SPIRIT, and SID Bank, provides essential resources to create a supportive environment for entrepreneurship. The Slovenian Regional Development Fund (Ribniški Sklad) and SPS contribute significantly to fostering a favorable climate for business growth.

#### *Local and regional institutions and initiatives:*

Many local institutions, including accelerators, incubators like Technological Park Ljubljana, and regional institutions like Tovarna podjetij Maribor, Primorski Technological Park, as well as SPS with subsidies, play critical roles in supporting entrepreneurship at the grassroots level.

## **5 Interactions between ecosystem actors**

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Interactions among the various actors within the Slovenian entrepreneurial ecosystem are dynamic and fostered through multiple channels. Several networking events serve as catalysts for interactions within the ecosystem. Among them, the most prominent is the PODIM conference. This annual event gathers entrepreneurs, investors (many foreign investors), and ecosystem stakeholders, providing an excellent platform for networking, knowledge sharing, and investment opportunities (Interview 2, 06.09.2023; Interview 4, 08.09.2023). Additionally, events like Brdo – Infodan (Info Day) and the Day of Innovation further facilitate networking and collaboration.

Collaborative programs, such as the SIO (Subjects of innovative environment), play a crucial role in fostering interactions (Interview 5, 11.09.2023). Through SIO, stakeholders come together to support startups, exchange information, and collaborate on various projects. This program encourages networking and cooperation among actors in the ecosystem. The main event of SPS (once a year) is: Forum

100% startup, organized before the tender of the P2 (startup subsidy), with the participation of speakers and investors. It is also worth mentioning MOS (International Craft Fair in Celje), where there is an opportunity for meetings between startups and domestic as well as foreign investors that has not been utilized in the past.

We should mention as well SRIPs (Strategic Research and Innovation Partnerships) which are an example of sectoral connections. Connected entities find it easier to reach lawmakers.

Slovenian key entrepreneurship ecosystem actors, such as incubators and support organizations, are members of international networks like EBN (European Business Network). This membership allows for benchmarking and certification and facilitates interactions on a global scale, enriching the ecosystem with international insights and connections.

## 6 Connection between (specific) ecosystem actors and the HEIs

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Ecosystem actors, such as incubators and innovation hubs, often collaborate closely with higher education institutions (HEI), including universities and research centers. They initiate and participate in various collaborative programs and initiatives that aim to bridge the gap between academia and entrepreneurship. These programs provide opportunities for students, researchers, and faculty members to engage with real-world business challenges, gain practical experience, and contribute their expertise to startups and innovative companies. Universities often serve as valuable sources of talent and research expertise, while ecosystem actors offer students and researchers access to the practical aspects of entrepreneurship and the business world.

Public and one of the private universities in Slovenia have established their own incubators and innovation centers. (Interview 4, 08.09.2023) These specialized facilities provide resources and support to students, alumni, and faculty members looking to transform their innovative ideas into viable businesses. University-based incubators serve as a bridge between academic research and entrepreneurship by offering mentorship, workspace, funding opportunities, and access to networks and investors.

Higher education institutions engage in collaborative research projects with ecosystem actors, especially in sectors like technology, science, and engineering. Chemical Institute, Institute of Biology, and Jozef Stefan Institute (IJS) can be important for expanding sector-specific opportunities.

## 7 Financing mechanisms

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*“There is a very high potential in this field because stakeholders realize the need for collaboration and creating larger narratives, also in terms of consortium investments (bringing together multiple investors for larger investments and not focusing only on smaller projects)” (Interview 11, 11.9.2023).*

In Slovenia's thriving entrepreneurial ecosystem, founders have access to a wide array of financial mechanisms and funding sources to fuel the growth and development of their startups. The availability of these financial options can vary depending on factors such as the stage of development, industry sector, and the specific needs of the startup. Here's an expanded overview that includes recent financial incentives and initiatives:

*Public funding programs:* The Slovenian Enterprise Fund (SPS) offers a mix of grants, loans, and equity financing tailored to startups at different stages of their journey. It provides essential financial instruments such as seed and startup capital, microloans, and guarantees designed to streamline access to capital for early-stage companies. (Interview 1, 06.09.2023)

*Private investors and angel networks:* The Business Angels of Slovenia (BAS) offer platforms for startups to connect with potential investors and secure much-needed capital.

*Crowdfunding platforms:* Several crowdfunding platforms enable founders to raise funds from a broad base of individual investors who believe in their vision.

*Accelerators and incubators:* They not only provide mentorship and resources but also offer direct investments to startups in exchange for equity, further fueling their growth. (Interview 1, 06.09.2023)

*Bank financing:* Traditional bank loans and credit lines are accessible for startups, although access may depend on factors such as the startup's financial health, collateral, and creditworthiness.

*European Union programs:* They serve as valuable sources of finance for startups engaged in innovative projects.

*Venture capital and private Equity:* Securing these funds can be competitive and may require a proven track record of success.

*Recent financial incentives:* they include Startup incentives (grants for business startups); Seed capital and equity financing for young innovative companies with growth potential; Venture capital opportunities through programs like the Central European fund of funds for venture capital; Direct credits and microcredits for liquid operations, especially for micro and small businesses; Guarantees for easier borrowing, including interest rate subsidies; Special incentives for specific target groups, such as those focused on digitalization and sustainable development. As well they include incentives for increasing competences: mentoring programs, training, and networking opportunities, which are crucial for founders' personal and business growth; SME training and networking programs tailored to sustainable development; Vouchers, providing co-financing for various initiatives, support entrepreneurs in enhancing their skills and market presence. There are also specific initiatives for sustainable development including those supporting health, energy-efficient supply chains, environmental initiatives, and digital transformation in the 4.0 industry (Interview 1, 06.09.2023xxxx).

## 8 Sectoral specifications

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Slovenian ecosystem is not sectorally oriented due to the small market size and a focus on innovation rather than sector-specific limitations. While there are some instances of specialization, the overall approach is diverse and adaptable to different industries and technologies. The focus on innovation is closely tied to the availability of funding sources, allowing flexibility in supporting various sectors. The only exceptions are sectors that are covered differently in EU tenders. (Interview 5, 11.09.2023)

While sectoral specialization is not prevalent, some regions and incubators exhibit specialization based on their strengths. For instance, Ljubljana University Incubator specializes in health, with a connection to 26 faculties and a focus on technological projects. Kovacnica Kranj specializes in food and Katapult is specialized in physical products, particularly in the development of hardware products, recognizing the challenges in this sector. (Interview 5, 11.09.2023). RC Novo Mesto is specialised and focuses on robotics applications and automatization of production processes and digitalization. For the purpose of this specialization they established technological institute Rudolf – through which they collaborate with

companies in the region and provide practical training for high school kids and students. Inkubator Sežana is trying to orient itself towards the creative industries associated with karst stone and photography. Furthermore, there are specific fund orientations within verticals, including WEB3 technologies and biotech.

## 9 The ecosystem's location

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*"The entrepreneurial ecosystem is highly dispersed, almost too much." (Interview 2, 06.09.2023)*

Slovenia's entrepreneurial ecosystem does not appear to be a barrier in terms of location - Slovenia is small, any region can be reached within two to three hours. Practically all regions are covered with basic support infrastructure for entrepreneurial activities (incubators, technological parks etc.), which has developed very quickly. The Slovenian startups can start anywhere in the Slovenian environment, but they have as well good opportunities to connect with other entrepreneurial ecosystems, e.g. in Italy and Austria. (Interview13, 30.08.2023; Interview 7, 08.09.2023).

## 10 The ratio between supporting infrastructure and actual startups in the ecosystem

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The ratio between supporting infrastructure and actual startups in the ecosystem appears to be well-balanced, with a significant investment in providing a conducive environment for startups to grow and succeed. This balance fosters innovation, entrepreneurship, and the development of a thriving startup ecosystem in Slovenia. However the ratio between supporting infrastructure and actual startups in the ecosystem can vary significantly depending on the region and the specific ecosystem. Successful example represents Incubator Sežana, which is located in Coastal-Karst region. Over the years, they have established 370 companies. They follow companies for up to 5 years, and the survival rate of companies is 85%.

While a robust supporting infrastructure, including incubators, accelerators, and funding sources, is crucial for nurturing and guiding startups, the ultimate goal is to see a healthy number of actual startups thriving and contributing to economic growth

## 11 SWOT Analysis

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### Strengths

- supporting infrastructure, including entrepreneurial incubators, technology parks, and regional development agencies – covering all the territory of Slovenia
- a culture of collaboration and networking among ecosystem actors, fostering innovation and knowledge sharing
- access to European funding programs, supporting infrastructure development and entrepreneurship initiatives
- Global Recognition – one unicorn
- Education and talent - Access to quality education and a skilled workforce contribute to a favourable environment for startups
- there are role models (large and successful startups)

### Weaknesses

- Spatial planning limitations and a shortage of suitable business zones hinder entrepreneurial development, particularly in rural areas
- Centralization tendency, many support activities concentrated in Ljubljana, the capital of Slovenia
- Dependency on specific industries - while the ecosystem supports various sectors, there is a need to diversify further to reduce dependency on specific industries.
- Limited access to capital - some startups seek funding abroad due to perceived limitations in the local ecosystem (larger scale projects)

### Opportunities

- Specialization in key sectors: opportunities exist for the ecosystem to specialize in key sectors such as health care, ICT, and more, enhancing competitiveness.
- Collaborative funding: exploring collaborative funding models and consortium investments can support larger-scale projects.
- Regional expansion: expanding entrepreneurial activities to regions outside the capital region can promote balanced development in Slovenia as a whole.
- Innovation promotion: continued efforts to promote innovation and entrepreneurship can lead to the emergence of more innovative startups
- Networking and internationalization can open doors to global markets and investments.
- Working with young generations - development of creativity, innovativeness, entrepreneurial skills in primary schools

### Threats

- Centralization risk: the centralization of activities in Ljubljana may lead to regional disparities and neglect of rural areas
- Infrastructure limitations: spatial planning constraints and transportation issues may limit the growth of business zones and startups
- Global economic uncertainty: can impact the flow of foreign investment and affect startups' access to capital
- Competition: from neighbouring countries in attracting startups and foreign investments
- Regulatory changes: can impact the ease of doing business for startups
- Competition for personnel due to lack of skilled labour.

## 12 Lessons Learned for Ecosys4you

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- A supportive and well-developed environment for the development of startups.
- Various programs and projects promote the sustainable development of startups, scale-ups, and SMEs through specialized partnerships, both in Slovenia and on the international stage.
- While there are multiple financing options, some startups may still face challenges in accessing finance. Factors such as the stage of development, the novelty of the idea, and the sector can impact the ease of securing funding.

- Startups in niche or highly specialized sectors may find it more challenging to attract investors.

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# Entrepreneurial Ecosystem in the Ruhr, Germany

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## 1 Introduction to the Ruhr's entrepreneurial ecosystem

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The Ruhr, situated in the western part of Germany, is a densely populated polycentric area that comprises 53 cities and is home to approximately 5.3 million residents. It hosts 22 universities and universities of applied sciences educating about 290,000 students, 26,000 of whom graduate each year (Kriegesmann et al. 2019; Metropole Ruhr 2023). The entrepreneurial ecosystem stretches across the entire region with activities concentrated in the four larger cities of Dortmund, Bochum, Essen and Duisburg. According to recent figures, the ecosystem has generated 598 startups & scaleups (Gründerallianz Dealroom 2023), of which the majority is in the B2B segment. Only recently have there been more startups with B2C business models (Interview 14, 31.08.2023).

The entrepreneurial ecosystem has numerous support activities and a blend of municipal, regional and university-based initiatives. Private initiatives account for a smaller share. Most of the activities, like events or competitions, and infrastructures, like incubators or accelerators, are funded with public money. While the public money has boosted activities, it is also considered a threat by some interviewees. Funding is predominantly project based and many of the projects terminate in 2024 (Interview 14, 31.08.2023; Interview 12, 25.08.2023). It is currently unclear if these activities can continue after 2024.



The foundation of the ecosystem can be traced back to the early 2000s. But it was only with the foundation of the ruhrHUB in 2016 that networking, cooperation, and visibility substantially increased. The ruhrHUB is a startup accelerator initiative by the six municipalities Dortmund, Essen, Bochum, Gelsenkirchen, Mülheim and Duisburg and the regional economic development agency Business Metropole Ruhr (BMR). In addition to its accelerator activities, the ruhrHUB organises large events for startups, such as the ruhrSUMMIT, which is considered to be an important annual meeting by the ecosystem's actors. The ruhrHUB is financed 50% by the federal state of North Rhine Westphalia through the #DWNRW-Program and 50% by its shareholders, which are the aforementioned six municipalities and the BMR.

Most universities and universities of applied sciences have developed startup support infrastructures during the last 5-7 years, e.g. the World Factory at the Ruhr University of Bochum, the ANDERSMACHER of the Westphalian University of Applied Sciences or the CET at the TU Dortmund University. In addition, the municipal economic development agencies have increased their capacities to support startups. For example, there are four startup competitions in Dortmund: start2grow (tech), greenhouse (social & impact entrepreneurship), urban foundations (foundational economy), and DOaccelerate (international scope, currently under redevelopment). Duisburg recently developed the incubator garageDU in 2022, Bochum hosts the business plan competition Senkrechtstarter, and developed the municipal incubator named Werk X. The city of Essen has hosted the H2hub since 2021 with a focus on hydrogen startups.

## 2 Distinctions of the Ruhr's entrepreneurial ecosystem

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*"The Ruhr is actually more interesting in terms of structure than Berlin, because the structure here is more diversified and not so focused. You can use the strengths of the cities and develop focal points. The connections between the cities could be expanded here and there, but in many places the overarching cooperation between the cities works very well" (Interview 4, 24.07.2023).*

The entrepreneurial ecosystem's distinctions can be summed up as follows: (1) there is an extraordinary density of municipalities and universities providing a lot of support infrastructures for startups; (2) the ecosystem actors have developed a strong regional network with intensive and diverse cooperation structures; (3) the actors' mindsets are rooted in the regional culture, which means they are considered very authentic and honest; (4) there is broad sectoral diversity and (5) a well-balanced complementarity of startup-support infrastructure exists across the different cities.

**1 - Density of municipalities and universities:** Almost all interviewees considered the density of municipalities and universities with many students as a distinction. It results in complementary startup-support structures and initiatives. The universities focus on the specialisation of their faculties with notable spinout potential. Examples are CUBE5, a cybersecurity incubator at the RUB, or the ruhrvalley Startup-Campus of three universities of applied sciences (University of Applied Sciences Dortmund, University of Applied Sciences Bochum, and Westphalian University of Applied Sciences). The municipal development agencies and other municipal actors have broader scope, both in terms of sectors and spatial scope that can reach out at the national or international level. However, there are also critical voices claiming that the "double offer leads to confusion (...) and as a new startup centre, this makes it rather

difficult to find your own foothold” (Interview 2, 18.07.2023). The parallel structures were also criticised by another interviewee (Interview 10, 07.08.2023).

**2 - Networking and cooperation:** Good networking and cooperation among the various actors is considered as an advantage by the interviewees. The actors know each other very well (Interview 14, 31.08.2023). It is common practice to provide consulting for founding teams across different cities’ support structures. If there is better suited consultancy elsewhere, founding teams are sent out to profit from the other cities’ facilities. However, despite all the activities, one interviewee from a private startup support facility believes that “universities in the Ruhr area are still not so good at startup culture, little startup is taught. There is a lot of startup support and offers, but this is often only project based. They have one year to set up, then one year to try to make it permanent and then one year to look for new project funding. In some cases, the formats take each other's few founders” (Interview 3, 17.07.2023).

**3 - The actors’ mindset:** Unlike the startups with very fast scaling in Berlin, the startup scene here is characterised by small startups. According to an interviewee, “that adds to the authenticity. The authenticity and the mindset we have here is really nice. There is an authentic willingness to achieve something here” (Interview 4, 24.07.2023). Another interviewee put it as follows: “The kind of people and their authenticity positively influence the entrepreneurial ecosystem, as there is no arrogance” (Interview 8, 08.08.2012).

**4 - Sectoral diversity:** A certain sectoral specialisation of the Ruhr entrepreneurial ecosystem exists in the municipalities. For example, logistics is a focus in the cities of Dortmund and Duisburg, cybersecurity has a stronghold in Bochum and in Gelsenkirchen, while in Essen there is a focus on digital startups and industrial tech, and in Mülheim on e-commerce and retail (Interview 14, 31.08.2023). There are also initiatives and infrastructure dedicated to supporting female founders, such as the Female Founders Ruhr which is supported by the Initiativkreis Ruhr (Female Founders Ruhr 2023) or the centre for female entrepreneurs in Dortmund (Gründerinnenzentrum Dortmund 2023).

**5 - Complementarity of support infrastructure:** There is diverse support infrastructure for all kinds of business ideas and founder teams. However, a lot of the offers concern pre- and early startup phases and there are significantly fewer that concentrate on scaling-up. Only the ruhrMASTERS launched by the ruhrHUB and Scale-up.NRW launched by the federal state of North Rhine Westphalia provide funding for scaleups (Interview 14, 31.08.2023; Interview 12, 25.08.2023).

### 3 The ecosystem’s evolution over time

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*“10 years ago, the support ecosystem consisted only of starter centres. The ruhrHUB community initiative was a milestone and the ecosystem has become stronger and more visible. ‘The Ruhr is doing something’, this was an important message” (Interview 9, 11.08.2023).*

Startup support activities began at the end of the last millennium with the foundation of the Gründer Support Ruhr (GSR), a network of mentors and business angels, in 1998 (Gründer Support Ruhr 2023), and of the Business Angel Alliance Ruhr (BAAR) in 1999 (ruhrHUB 2023). This was followed by the first startup competition start2grow in 2001, launched in the city of Dortmund (Interview 13, 30.08.2023),

and by the senkrechtstarter startup competition in Bochum in 2006 (Interview 1, 12.07.2023). These competitions are now well established and focus primarily on high-tech startups.

In addition, the STARTERCENTERS NRW were established. They are financed by the federal state of North Rhine Westphalia and run by the chambers of commerce and crafts, partly in cooperation with the municipalities. For example, the STARTERCENTER NRW for Emscher-Lippe, a sub-region with some municipalities from the Ruhr, commenced its activities in Gelsenkirchen in 2007 (IHK Nord Westfalen 2023). They aim mainly to support company foundations in the crafts or retail sector and are less suited to supporting high-tech startups who wish to scale-up. Interviewees suggest that during this early phase of the ecosystem there was little cooperation on the inter-municipal level. Rather each city strived to establish a support system locally (Interview 14, 31.08.2023; Interview 12, 25.08.2023). Hence, there was no real Ruhr entrepreneurial ecosystem around 2010 (Interview 7, 02.08.2023).

A milestone in the development of today's entrepreneurial ecosystem in the Ruhr was the foundation of the ruhrHUB, because it is an inter-municipal initiative (Interview 5, 28.07.2023) that organised the first ruhrSUMMIT in the year 2017 (Interview 8, 08.08.2012). The ruhrSUMMIT evolved into the regional meet & greet event for all startups and ecosystem actors and is considered very important because of its character as a "class reunion" (Interview 12, 25.08.2023). All actors of the entrepreneurial ecosystem attend the ruhrSUMMIT, which has evolved so that it now provides an "umbrella" function for all the smaller events taking place across the region (Interview 6, 26.07.2023). Founding teams can pitch their business ideas and in addition there are investors and keynotes given by successful company founders. Due to the impact of the first ruhrSUMMIT on establishing the ecosystem, it can be considered a field-configuring event (Schüßler et al. 2015).

Actors started to talk of an entrepreneurial ecosystem after 2017 and "it all became really dynamic" (Interview 12, 25.08.2023). However, the COVID-19 pandemic massively reduced activities and a lot of events were held online (Interview 14, 31.08.2023). Meanwhile, cooperation and interaction have returned to pre-pandemic levels in most cases. It is only in the smaller cities that activities such as a "Gründerstammtisch" have not yet been restarted (Interview 9, 11.08.2023).

## 4 Key actors

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*"Many, there is not one." (Interview 12, 25.08.2023)*

### *Municipal actors / economic development agencies:*

There are 53 local economic development agencies in the Ruhr, offering basic support for all those interested in founding a business. The larger economic development agencies in Essen, Bochum, Dortmund and Duisburg have established dedicated startup infrastructure such as incubators/hubs and prestige business plan competitions.

### *Regional economic development agencies:*

There are several regional economic development agencies, for example the Business Metropole Ruhr for the entire region and the Win Emscher Lippe for the northern parts of the Ruhr region. These agencies are interested and supportive regarding the entrepreneurial ecosystem. They currently focus on coordination and support activities.

### *Regional and/or inter-municipal initiatives:*

The ruhrHUB is an outstanding region-wide initiative clearly deemed successful by the interviewees. Its launch was seen as being the initial spark of the ecosystem by many interviewees.

#### *Universities and universities of applied sciences*

There are 22 universities in total, the most important universities are the Ruhr University Bochum (RUB), TU Dortmund University (TUDO) and the University of Duisburg Essen (UDE). Important universities of applied sciences are in Bochum, Dortmund, Essen, Bottrop and the Westphalian University of Applied Sciences (Gelsenkirchen, Bocholt and Recklinghausen). Universities and universities of applied sciences have further developed their technology transfer offices to establish targeted startup infrastructure. In addition, the RUB was able to attract national funding for developing CUBE5, an incubator for cybersecurity startups.

There is substantial NRW-funded startup support infrastructure at two of the Ruhr universities:

Worldfactory startup centre at RUB Bochum.

CET Centre for entrepreneurship and transfer TUDO.

Furthermore, six NRW universities received funding as part of the Programme Excellence Startup Centre NRW.

#### *Alliances of universities and universities of applied sciences:*

The ruhrvalley StartUp-Campus is an initiative by three universities of applied sciences and is becoming increasingly visible (Interview 14, 31.08.2023). The University Alliance Ruhr is an alliance between the three large universities in Bochum, Essen, and Dortmund but it has no particular startup activities. These are connected to the universities directly.

#### *Private sector initiatives and actors:*

Private initiatives include BRYCK, the Günderallianz Ruhr, the Business Angel Alliance Ruhr (BAAR), Cusp Capital Partners GmbH, Gründer4Ruhr, the Initiativkreis Ruhr, the Impact Factory Duisburg and labs.ruhr. These private-sector initiatives have considerable overlaps with public initiatives. Importantly, BRYCK and the BAAR are distinguished by the fact that these two initiatives have the financial power to finance startups. This finance is provided by business angels in case of the BAAR, and by the RAG Foundation as a financial investor with regional roots in the case of BRYK. This is a strong advantage compared to the many public sector initiatives.

## **5 Interactions between ecosystem actors**

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*“But at the end of the day, it's not so much the single big events, but the many small opportunities” (Interview 4, 24.07.2023).*

The largest event is the ruhrSUMMIT, organised by the ruhrHUB on a yearly basis. It is perceived as the meet & greet event of the scene and considered important by most interviewees. The last ruhrHUB was structured into different ‘towns’ such as ‘her hood’, ‘digital health’, ‘future web’ and ‘impact’ (ruhrSUMMIT 2023). The ruhrSTARTUPWEEK each September is also organised by the ruhrHUB. It takes place across the entire region in the different cities which all host events, such as workshops, pitches, parties, consultancies, etc. (ruhrHUB STARTUPWEEK 2023).

In addition, there are events on the municipal level, for example ceremonies and parties connected to the competitions start2grow or senkrechtstarter. Sector-specific events are very important and a useful addition, as stated in Interview 14: “Problems and concerns are not disclosed on the ruhrSUMMIT’s big stage, but rather at the small and more informal events” (Interview 14, 31.08.2023).

As mentioned above, the higher education institutions are important players in the ecosystem. They provide their own startup infrastructure and generate a large share of startups. Cooperation between the large universities and municipal activities is intensive, as is cooperation between the universities and the startups they generate, e.g. between professors and founders (Interview 4, 24.07.2023)

## 6 Financing mechanisms

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The funding landscape for the pre- and early startup phases is very diverse. The means to get funding include:

- Competitions with financial awards in the form of one-time payments, such as start2grow in Dortmund. Some other competitions have non-material awards but, for example, consultancy.
- Scholarships such as the Gründerstipendium.NRW are a way to finance founders in the early development phase of a startup. The Gründerstipendium.NRW is funded by the state of North Rhine Westphalia. The funding is only 1000 euros a month. A second scholarship, also financed by North Rhine Westphalia, is EXIST, which targets graduates from higher education institutions. Equally, the economic development agency in Bochum grants a scholarship to founders if they set up a business in Bochum (1500 euros for six months).
- NRW.SeedCap for highly successful young companies is a programme run by the Bank of North Rhine Westphalia to support companies by providing capital of between 100,000 and 500,000 euros provided that a private investor or a business angel invests the same amount of capital. A similar finance mechanism is the Invest Grant from the Federal Office for Economic Affairs and Export Control. The Invest Grant facilitates startups in their search for venture capital investors and is thus also a mechanism to mobilise venture capital.
- The BAAR forum of the Business Angel Alliance Ruhr offers an opportunity to pitch to attract business angel investment. There is no information about the success rate, as angels are often very secretive. The pitching startups are usually already established.

Getting financial support in later startup phases is more challenging than in the early phases.

## 7 Sectoral specifications

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There are specialisations across the entrepreneurial ecosystem within the different cities. Logistics is a focus in the cities of Dortmund and Duisburg, as these cities have inland harbours. In addition, Dortmund specialises in supporting IT startups and there is a strong connection to the renowned computer science faculty at the TU Dortmund University. Cybersecurity has a stronghold in Bochum because of the very successful cybersecurity research at the Ruhr University Bochum (RUB) and in Gelsenkirchen due to the Institute for Internet Security, If(is), at the Westphalian University of Applied Sciences. Essen has a focus on digital startups and industrial tech, and Mülheim on e-commerce and retail (Interview

14, 31.08.2023). In addition to cybersecurity, another sectoral focus in Bochum is on digital health startups. Two initiatives focus on social entrepreneurship, Greenhouse in Dortmund (Interview 13, 30.08.2023) and the Social Impact Factory in Duisburg (Interview 11, 18.08.2023).

## 8 The ecosystem's location

*“Other ecosystems such as Berlin, Hamburg, Munich, Frankfurt cannot be compared with the Ruhr, comparing oneself with others is pointless; the Ruhr is strong in itself; however, one can learn from each other” (Interview 5, 28.07.2023).*

The location becomes relevant when startups grow (Interview 15, 27.09.2023), because there are difficulties in servicing "top-level" startups in the Ruhr region. They prefer Cologne or Düsseldorf because of the image and international atmosphere (Interview 1, 12.07.2023). A favourable regional image is more important in the startup community than low living costs (Interview 1, 12.07.2023). This means that although low living costs are often assumed to be one of the advantages of the Ruhr, this is highly questioned by one of the interviewees. However, there is a visible sharpening of economic competence, even if the high-tech focuses in the Ruhr region have not yet been adequately communicated to the outside world (Interview 1, 12.07.2023).

## 9 SWOT Analysis

### Strengths

- Polycentric region with diverse specialisations
- Strong networking between the ecosystem actors
- Support infrastructure at universities and the municipal level
- Complementarity between support infrastructure
- Local, regional, national and international range of activities
- Academic excellence in areas relevant for deeptech startups (ICT, cybersecurity, healthcaretech, industry 4.0, hydrogen, [AI])
- Currently much public support for startups in pre- and early foundation phases
- There are role models (large and successful startups)

### Weaknesses

- Strong focus on early startup phases, less support infrastructure in late phases
- Unclear employment effects
- Double structures across municipalities (e.g. numerous startup competitions and pitches)
- Difficult to provide services for top-level startups due to the better regional images in Cologne and Düsseldorf
- No unicorn (to date)
- Lack of seed and scale-up finance is debated as a weakness; it does exist but probably not as much as in other regions of Germany (Munich, Berlin)

### Opportunities

- The dynamic developments spurred by startups and support infrastructure might cause a positive change in the regional mindset
- Cooperation between the Ruhr's cities was on a very low level due to intraregional competition (for funding, company settlements, new attractions like concert halls, etc.); however, cooperation of public actors involved in the ecosystem is deemed fruitful
- Many early-stage startups that may become role models in the near future

### Threats

- Most of the startup infrastructure depends on project-bound public money; future funding is unclear from 2024+
- Competition for personnel due to lack of skilled labour
- Competition for founding teams (not often but mentioned in the interviews)

## 10 Lessons Learned for Ecosys4you

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The entrepreneurial ecosystem of the Ruhr with its diverse sectors, variety of actors and multiplicity of supporting infrastructures is a promising playground for cross-ecosystem cooperation within the Ecosys4you project. Nevertheless, when launching new offers for young entrepreneurs, it is important to avoid parallel structures and doubling of opportunities. Furthermore, long-term funding strategies for the launched activities are essential, since a lot of supporting infrastructures are project based and therefore threatened by termination after the expiration of the funding.

An advantage for the ecosystem would be to provide continuous start-up education opportunities for young people to inspire and educate them for startup entrepreneurship. Furthermore, by presenting Ruhr startups as valuable working opportunities for young people, they could gain qualified interns or even employees. The engagement of students in cross-ecosystem exchange may also present opportunities for the building of international founding teams. Moreover, the rich experience and role models in different sectors should be utilized for such international exchange and mutual learning within the project.

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Interview 13 (30.08.2023): Economic development agency municipal level.

Interview 14 (31.08.2023): Ecosystem Support Infrastructure, regional scope.

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Interview 2 (18.07.2023): Support structure in a university or university of applied sciences.

Interview 3 (17.07.2023): Private startup support facility.

Interview 4 (24.07.2023): Support structure in a university or university of applied sciences.

Interview 5 (28.07.2023): Private startup support initiative.

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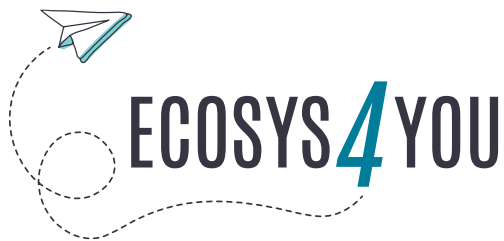
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# Venture Biographies

