# MAPPING POLAND'S TECH SECTOR

A Network Analysis of the Entrepreneurship Community

A REPORT BY:

endeavor

WITH SUPPORT FROM:







#### **ABOUT ENDEAVOR INSIGHT**

<u>Endeavor Insight</u> is the research division of Endeavor that provides data-driven analysis and visualizations showing what makes entrepreneurial ecosystems thrive. Our research team of economists, data scientists, and policy analysts specializes in understanding the needs of high-impact entrepreneurs and evaluating the networks that enable them to scale up and pay it forward to the next generation of entrepreneurs.

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BCG collaborates with business and societal leaders to address critical challenges and capture their greatest opportunities. Our approach integrates advanced technologies and flexible methodologies, helping businesses, including startups and entrepreneurial ventures, remain robust amidst uncertainty. In 2019, we established a technology hub for Central and Eastern Europe (CEE) in Poland — BCG Platinion and BCGX, providing technology-related services and solutions to businesses. This includes areas such as digital transformation, cybersecurity, data analytics, and technology strategy. BCG also contributes to the startup ecosystem through research, thought leadership, and partnerships with accelerators, incubators, and venture capital firms.



BNP Paribas Bank Polska S.A. has been listed on the Warsaw Stock Exchange since 2011. It is part of the BNP Paribas Group, which is present in 64 countries. The bank supports Polish startups on three levels. First, it integrates their technological solutions to support the bank's digitalization and operational efficiency. Second, it invests in startups that can be effectively scaled not only within the bank, but also among its clients and partners. Third, it offers a unique suite of expert-led banking services that supports world-changing companies in setting up their first legal entity, opening accounts abroad, and raising international capital rounds.



PwC is a network of companies providing business, strategic, technological, tax, and legal consulting and audit services. Polish PwC companies employ almost 7,000 people, including approximately 2,000 in technology teams. PwC has experience in cooperation with startups and scaleups, including an acceleration program and comprehensive support in terms of transactions, technology, and expansion into global markets. Thanks to cooperation with venture capital and private equity funds, we can also help startups obtain financing. At PwC, we combine technological innovations with human capital — the knowledge and various competences of our experts. Through our actions, we actively shape the future of business and the environment in which we operate.

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Scan below or visit <u>endeavor.org/polandtechmap</u> to view the interactive website.



### **Executive Summary**

Endeavor Insight partnered with Endeavor Poland to study the entrepreneurship ecosystem for tech companies in Poland. The purpose of the study is to provide insights on the sector's current state, evaluate its strengths and weaknesses, and enable decision makers to better understand and support local tech entrepreneurship.

#### ABOUT THE DATA

The findings are based on 94 interviews with Polish tech entrepreneurs between May and September 2023, and data on 700 companies and their founders. In addition, data was collected on over 1,100 support organizations, investors, and mentors that support the local tech community.

### POLAND IS HOME TO A THRIVING TECH SECTOR THAT HAS EVOLVED WITH THE COUNTRY'S PROGRESS.

Poland's rapid economic and political progress paved the way for tech sector growth. Poland's tech sector was historically driven by software and IT companies that bootstrapped their growth. The rise of higher-value companies in specialized subsectors began in the early 2000s, and they now represent a majority of the tech sector. Public money boosted the local VC market beginning in the mid-2010s, supporting a wave of VC-backed firms. Today, challenges such as the COVID pandemic and Russian invasion of Ukraine have affected entrepreneurs as well as the economy at large. VC deals in Poland outpace peer countries, but capital for growth-stage companies remains limited. Poland's VC deal counts are more than a decade behind top-performing European countries.

## POLAND HAS THE POTENTIAL TO BECOME A MORE INCLUSIVE AND GLOBALLY COMPETITIVE HOME FOR ENTREPRENEURSHIP.

Scaleup entrepreneurs are the engine of the economy, but increased support is needed so more companies can scale faster. Poland's tech companies that reach scale tend to be older and have taken many years to grow. Understanding the traits that set founders of scaling companies apart from smaller companies can help decision makers identify promising

entrepreneurial talent. Tech companies that are "international first" have high growth potential and position Poland to become more globally competitive. However, gender inequities may hold back Poland's ecosystem because female founders often face greater barriers to scale. Decision makers need to create an enabling environment for founders who are scaling and creating value in Poland, which includes better support for female-led companies.

### WHEN SUCCESSFUL FOUNDERS SUPPORT OTHER ENTREPRENEURS, THE ECOSYSTEM THRIVES.

Five important lessons emerged by further examining the connections among entrepreneurs:

- Poland's entrepreneurial network is bolstered by numerous employee spinouts.
- 2. When successful companies pay it forward through investment and mentorship, Poland's tech companies scale.
- 3. Founders of Poland's scaled companies are providing two-to-three times more support to fellow founders, compared to smaller companies.
- 4. Founders are supporting entrepreneurs in other cities.
- 5. A majority of tech founders in Poland have positive perspectives on the entrepreneurship community.



Docplanner and Booksy demonstrate the global multiplier effect that successful founders can have by providing mentorship, investment, and employment to people who go on to found their own spinout companies.

#### TECH FOUNDERS IN POLAND FACE SEVERAL BARRIERS TO GROWING THEIR COMPANIES, BUT SCALED COMPANIES FACE DIFFERENT CHALLENGES.

The top challenge for Poland's tech founders is access to qualified managerial talent, especially among founders of scaled companies. The strength of technical talent in Poland can lead business skills to be overlooked. Other major barriers include access to customers among B2B companies, the unpredictable taxation system, and a lack of conducive legal frameworks. Access to capital is a more pronounced challenge for smaller companies, but the lack of growth-stage financing will hold Poland back.

## THERE ARE SEVERAL ACTORS IN THE POLISH ENTREPRENEURIAL ECOSYSTEM THAT ARE HELPING FOUNDERS TO SUCCEED.

Several founders have become VC partners, making Poland a more founder-friendly investment environment. Polish founders frequently participate in programs with incubators and accelerators, but many of them are located outside of Poland and curricula are not fully aligned with founder needs.

The most valuable aspects of programs are introductions to investors and mentorship from experienced founders. Universities play an important role in the Polish tech ecosystem, especially in training tech talent, but more could be done to foster collaboration with tech founders. Poland has solid government support for entrepreneurs primarily via early stage funding. Other countries can provide lessons on policies and programs to further support growth-stage companies.

## DECISION MAKERS SHOULD LEVERAGE THE LEADERSHIP ROLE OF POLAND'S FOUNDERS TO FOSTER THE GROWTH OF THE ECOSYSTEM.

A comparison of Poland's network analysis with other European countries reveals that more should be done to encourage founders of successful companies to become angel investors and to ensure that serial founders are providing meaningful value to the country.

The following strategies are based on Endeavor Insight's principles of self-propelling ecosystem development and can help decision makers in Poland solidify entrepreneurship as a driving force of its economy.

- 1. Focus resources on companies with the most potential to scale rapidly.
- 2. Increase local and global connectivity among Polish founders.
- Provide more tailored support to address the challenges of scaling businesses.



Pictured: A session of Endeavor Poland Founders Camp in November 2023

### I. Context

### POLAND IS HOME TO A THRIVING TECH SECTOR THAT HAS EVOLVED WITH THE COUNTRY'S PROGRESS.

### Poland's rapid economic and political progress paved the way for tech sector growth.

Poland's exceptional technical talent developed from its legacy in factory-based manufacturing. After the country's transition to democracy, reforms were enacted in the 1990s to expand access to quality education. While vocational schools remained important in Poland, there was a greater focus on academic training in science and technology, which led to a workforce with strong software engineering and computer-based skills.<sup>1</sup>

Regulatory reforms to financial markets, company law, accounting, and intellectual property rights created a better environment for business. They also reduced state intervention in the economy, allowing for private sector growth. Joining

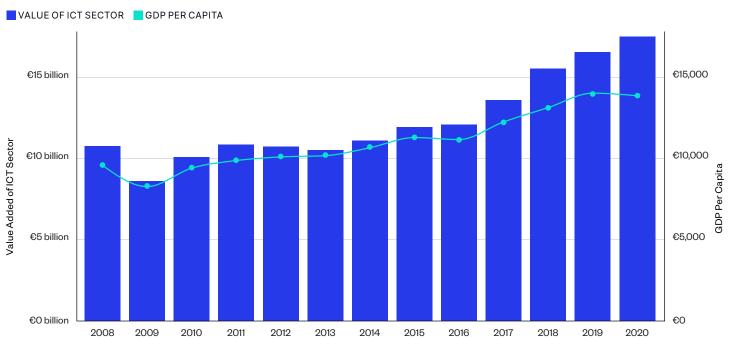
the European Union in 2004 opened the door to foreign investment and expanded Poland's export potential.<sup>2</sup>

The EU's "Europe 2020" innovation strategy, adopted in 2010, directed funds at research and development, the creation of companies, and the integration of Polish research with the rest of the bloc.<sup>3</sup> EU funds also enabled the creation of a VC ecosystem in Poland since the mid-2010s.

## Poland's tech sector has evolved alongside the country's impressive and continued rise in productivity.

Between 2008 and 2020, Poland's GDP per capita rose 44 percent, as the chart below shows. At the same time, the value of the country's information and communications technology sector grew rapidly.

#### THE VALUE OF POLAND'S ICT SECTOR HAS GROWN ALONGSIDE GDP PER CAPITA.



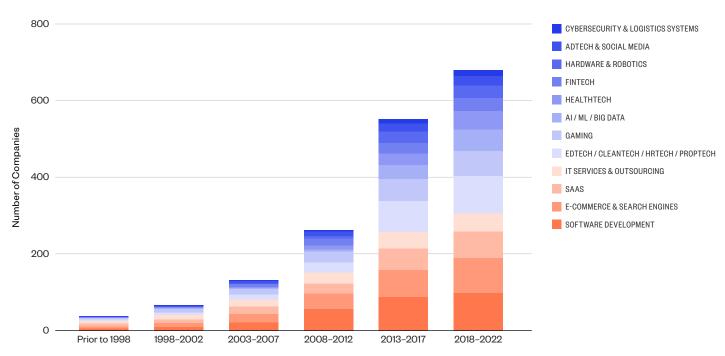
 $Sources: Endeavor Insight analysis.\ Data\ on\ gross\ domestic\ product\ (GDP)\ and\ value\ added\ of\ the\ ICT\ sector\ from\ Eurostat.\ Data\ on\ population\ from\ the\ International\ Monetary\ Fund.$ 

## Poland's tech sector was historically driven by software and IT companies that bootstrapped their growth.

Poland's earliest notable tech companies primarily operated in outsourcing, software development, IT services, and the internet. These companies scaled by generating profits without outside investment. One such bootstrapped company was **Grupa Wirtualna Polska**, founded in 1995 as Poland's first internet portal by Jacek Kawalec, Leszek Bogdanowicz, and Marek Borzestowski.<sup>4</sup> Now known as WP, it was acquired in 2014 by Poland's Grupa O2 and Innova Capital. Thirty-five percent of the population continue to access WP for news every week.<sup>5</sup>

Other prominent examples in the initial wave of bootstrapped companies include Grupa Pracuj and Netguru. Grupa Pracuj was founded in 2000 by Maciej Noga, Paweł Leks, and Przemek Gacek, and it is now Poland's largest digital recruitment portal.6 Noga, one of the country's most prominent mentors and angel investors, also serves on the board of Endeavor Poland. Established in 2008 by Wiktor Schmidt (the founding Chair of the Board of Endeavor Poland) and Kuba Filipowski, Netguru evolved from a modest software house into a leading digital acceleration consultancy. Today, it offers custom software development and design services to clients around the world.

#### **CUMULATIVE GROWTH OF POLAND'S TECH SECTOR**



Note: Based on 700 companies, where data was available.

Sources: Endeavor Insight founder interviews and analysis, LinkedIn, Crunchbase, company websites.

## The rise of specialized tech companies began in the early 2000s, and they now represent a majority of Poland's tech sector.

As the graph above shows, Poland has witnessed a rise of companies offering higher-value services and specialized products since the early 2000s. This

includes companies in healthtech, gaming, fintech, edtech, and more. Many of these companies have become models of Poland's entrepreneurial potential embodying an international mindset and often raising institutional capital from outside of Poland, particularly Germany, the United Kingdom, and the United States.

The gaming sector grew by harnessing Poland's strong technical talent in this time period. CD Projekt Red, founded in 2002 by Marcin Iwiński and Michał Kiciński, has grown to employ over 600 people around the world. Ten Square Games, founded in 2011 by Arkadiusz Pernal and Maciej Popowicz, specializes in free-to-play games, and employs over 350 people through its bases in Poland and Italy. According to a 2021 report, this took the number of Polish gaming companies with a valuation of over \$1 billion to four, with Huuuge Games and PlayWay also noted as unicorns.

Other examples of successful companies from this time period include InPost and Brainly. Rafał Brzoska grew InPost to become Europe's leading automated parcel machine provider after founding the company in Kraków in 2006. The company sits under the umbrella of Brzoska's Integer.pl, employs more than 2,000 people in Poland, and debuted on the Warsaw Stock Exchange in 2015. In 2021, InPost went public on the Amsterdam Stock Exchange, gaining unicorn status in the process, 9 and has since acquired large logistics firms in France and the United Kingdom.10

Brainly, founded in 2009 by Łukasz Haluch, Michał Borkowski, and Tomasz Kraus, is a leading Al learning companion platform that has grown to a few hundred employees across Europe, Asia, and the United States, though the majority are in Poland. Two other examples are **Docplanner** and **Booksy**, both of which

offer appointment booking software in addition to other features. (See case studies on pages 26-29.)

## Public money since the mid-2010s has boosted the local VC market, supporting a wave of venture-backed firms.

Two public entities transformed Poland's entrepreneurial landscape by filling in some of the existing gaps in local funding. The first is the National Centre for Research and Development (NCBR by its Polish acronym), established in 2009 to support the creation of innovative solutions and technologies. In 2015, it started to distribute EU-funded grants to up-and-coming entrepreneurial companies.<sup>11</sup> The second is the Polish Development Fund (PFR), a financial group which funds activities for economic development. It started in 2016, also with the support of EU funds, and pumped money into PFR Ventures, a governmentowned institutional LP, to kick-start the entrepreneurial ecosystem. PFR Ventures has since invested in more than 60 local VC and PE funds, with a total indirect portfolio of more than 650 companies.<sup>12</sup>

The public backing of entrepreneurial Polish companies has had a marked effect on the local ecosystem. Previously, higher-value companies such as Brainly, Docplanner, and Booksy had to look outside of Poland for seed and early stage finance. But since 2016, a local VC ecosystem developed.



"In the 2000s, only a few brave individuals decided to go for entrepreneurship. It changed after 2016, with PFR and the European Investment Fund. That was when investment started happening. It was the money they put forward and the know-how they offered. The shift was crucial."

MARCIN KUREK MARKET ONE CAPITAL Although local VC is still largely confined to seed and early stage capital, the market developed rapidly. This new capital unlocked a wave of specialized tech companies that grew fast after the injection of seed and series A rounds.

**Infermedica**, a Wrocław-based digital health company specialized in Al-powered diagnosis and triage solutions, was one of the beneficiaries of the new wave of VC. Its \$3.7 million seed round in 2019 was

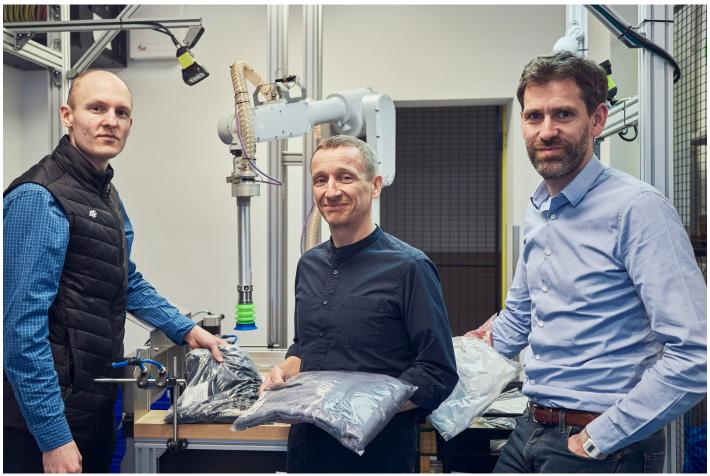
supported by Inovo VC, and the company went on to raise \$45 million, helping the company to scale to over 200 employees. Healthcare platform **uPacjenta** is also primarily backed by local capital and has grown to employ over 90 people since its launch in Kraków in 2017. Other companies that have benefited from local capital, at least at the seed stage, include **Omnipack**, **LiveKid**, and **Mindgram**.

### THE EMERGENCE OF NEW COMPANIES IN SPECIALIZED SUBSECTORS VARIES REGIONALLY, WITH WARSAW DRIVING THE BULK OF THE TECH SECTOR'S GROWTH.

	Warsaw	Kraków	Wrocław	Poznań	Gdańsk	Katowice	Łódź
Market Size Number of tech companies	260+	110+	80+	40+	30+	20+	15+
Percentage of Companies Founded 2013-2022	67%	63%	70%	43%	48%	41%	50%
Concentration of Specialized Tech Companies	High	Low	Low	Medium	Medium	High	Medium
Company Example	Nomagic (2017) provides smart pick- and-place robotic solutions for order fulfillment.	Pragmatic Coders (2014) is a software development agency for fintech and digital health companies.	Applover (2016) is a software development company specializing in healthtech and digital advisory sevices.	Tpay (2010) is an online payment system for internet and mobile payments.	Trusted Twin (2021) provides a data marketplace connecting data providers with users.	Voucherify (2016) is a promotion and loyalty platform helping digital teams scale their incentives campaigns.	AI Investments (2018) is an AI-enabled platform for optimizing portfolio management.

Note: Cities were categorized as high, medium, or low in terms of their concentration of specialized tech companies based on the proportion of companies headquartered there that operate in a higher-value subsector like adtech, edtech, gaming, or healthtech. Company examples were chosen in accordance with each city's categorization for that variable. Sources: Endeavor Insight analysis, LinkedIn, Crunchbase, PitchBook, company websites.

Warsaw is the country's largest city and main tech hub. With more than 260 entrepreneurial tech companies, its number is over twice the total of any other city. Warsaw is highly dynamic, with twothirds of its companies founded since 2013. It is also a leader in Poland's rise of specialized tech firms, which comprise the majority of companies in the capital. For example, **Nomagic** uses Al and robotcontrol software to provide systems that optimize warehouse fulfillment processes.



Pictured: The founders of Nomagic, from left to right: Marek Cygan, Kacper Nowicki, Tristan D'Orgeval

Kraków and Wrocław are two other major cities for entrepreneurship in Poland, each with over 80 local tech companies. Both cities predominantly feature software development and IT companies, reflecting Poland's traditional strength. Companies such as **Pragmatic Coders** and **Applover** exemplify this. Wrocław has a highly dynamic tech sector, with 70 percent of its companies being founded since 2013.

Poland's other cities, including Poznań, Gdańsk, Katowice, and Łódź have smaller tech ecosystems, each with fewer than 50 companies. They tend to have a higher proportion of older companies, such as the fintech **Tpay**. Some of their more recent companies include **Trusted Twin** and **Al Investments**. Katowice has a small but highly specialized ecosystem of tech companies, such as **Voucherify**.

#### CHALLENGES SUCH AS THE COVID-19 PANDEMIC AND RUSSIAN INVASION OF UKRAINE HAVE AFFECTED ENTREPRENEURS AS WELL AS THE ECONOMY AT LARGE.

Since 2020, economic growth has been subdued due to slow supply chain recovery following the COVID-19 pandemic and Russia's invasion of Ukraine. The latter caused both an energy and refugee crisis that were exacerbated by inflation well into 2023. These events contributed to a global correction in financial markets and associated layoffs in tech companies, many of which are major clients of Polish entrepreneurial companies. This all contributed to tighter household budgets and reduced investment in 2023.

Another impact of the Russian invasion of Ukraine was a substantial rise in Poland's population as refugees sought safety.

In late 2022, the Migration Policy Institute estimated that there were 3.2 million Ukrainians in Poland, of whom 1.9 million had arrived since the invasion.<sup>13</sup> This accounts for around 9 percent of Poland's total population. Because of the nature of the conflict, a large proportion are understood to be women of working age and children. Most are understood to be working and providing a net positive contribution to the Polish economy.<sup>14</sup> This boost to the labor market is offsetting domestic labor shortages that had emerged due to an aging population and outward migration.<sup>15</sup>

Many refugees have arrived with an entrepreneurial spirit — according to the Polish Institute of Economy, Ukrainians registered 20,000 new companies in Poland in 2022 alone. Legislation enacted that year allowed Ukrainian nationals the same status as Poles when setting up a business.

Pictured: Ukrainian Tech Meetup organized by Endeavor Poland, BCG, and Ukrainian Virtual Hub in September 2023



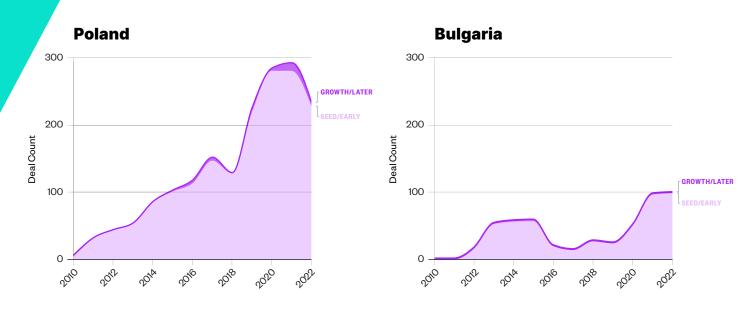
## VC deals in Poland outpace peer countries, but remain limited for growth-stage capital.

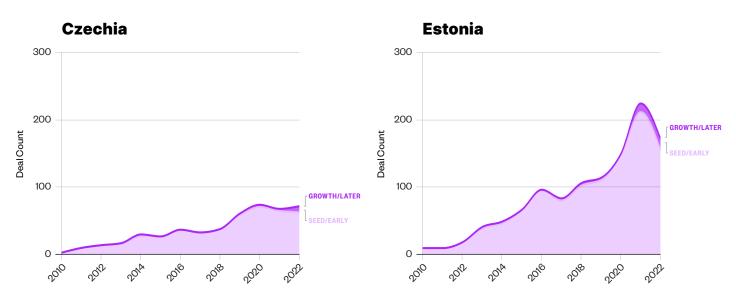
Poland has experienced a significant growth in the number of VC deals in the last five years and maintains a higher overall deal count than neighboring countries like Bulgaria, Czechia, and

Estonia. In the past five years, PFR Ventures alone invested €2.5 billion in VC funds, including Inovo VC, Movens Capital, Innovation Nest, and SMOK Ventures.¹8 Yet efforts have focused on making capital available for seed-stage companies. The share of growth- and later-stage deals remains low and is not much different in Poland compared to its neighbors.

#### STAGE OF VC DEALS BY COUNTRY

DEALSTAGE: SEED/EARLY GROWTH/LATER





Note: Deals under \$10 million were classified as "Seed/Early," while deals of at least \$10 million were classified as "Growth/Later." Sources: Endeavor Insight analysis, PitchBook data as of October 2023.

## Poland's VC deal counts are more than a decade behind topperforming European countries.

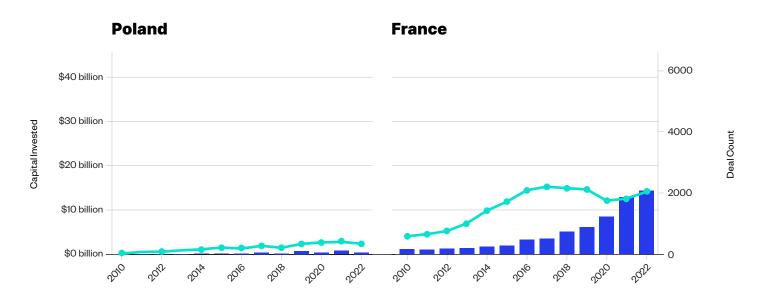
While Poland's entrepreneurial and venture capital ecosystem has grown significantly, it still lags behind topperforming European countries. According to PitchBook data, companies in Poland received a total of \$379 million in terms of capital invested in 2022. In comparison, in 2010 companies in France received \$1.17 billion, Germany received \$963 million, and

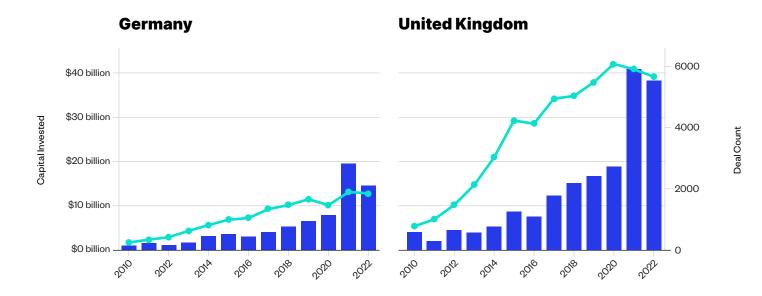
the United Kingdom received \$4.16 billion. Poland's position today is equivalent to where these other countries were more than a decade ago.

This pattern reflects analysis conducted by other researchers, including the Ecosystem Compass Poland report published by VCLeaders in 2023, which found that Poland lags on funding per capita and VC-to-GDP ratio when compared to these three more developed countries.<sup>19</sup>

#### COMPARISON OF VENTURE ECOSYSTEM GROWTH BY COUNTRY







Sources: Endeavor Insight analysis, PitchBook data as of February 2024.

### II. Opportunity

### POLAND HAS THE POTENTIAL TO BECOME A MORE INCLUSIVE AND GLOBALLY COMPETITIVE HOME FOR ENTREPRENEURSHIP.



"The Polish startup ecosystem is currently at a critical juncture. It has a lot of potential and innovation, yet it stands at a point where greater integration with the global entrepreneurial community could be immensely beneficial. This phase requires not just local support but also an openness to global perspectives and practices."

WIKTOR SCHMIDT
COFOUNDER OF NETGURU AND CHAIR OF ENDEAVOR POLAND

#### Scaleup entrepreneurs are the engine of the economy, but increased support is needed so more companies can scale faster.

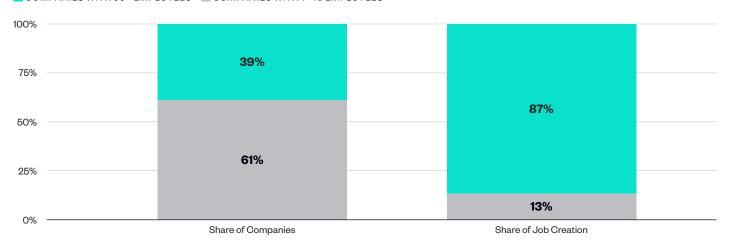
Businesses that grow rapidly to 50 or more employees will do the most for the economy. While the majority of Poland's tech sector is made up of companies with fewer than 50 employees, businesses that grow larger can provide the widest benefit. Previous studies from Endeavor Insight have shown how scaled companies pay higher average wages, are likely to keep growing once they surpass 50 employees, and can be more resilient during economic downturns.<sup>20</sup>

Endeavor Insight's analysis shows that only 39 percent of entrepreneurial tech companies in Poland have scaled to over 50 employees, yet these companies account for the vast majority — 87 percent — of jobs in the sector. More Polish companies need to scale to ensure the future of the tech sector's economic contribution.

#### JOB CREATION BY COMPANY SIZE CLASS IN POLAND'S TECH SECTOR

Scaled Companies Make up a Smaller Proportion of the Total Number of Local Companies, but They Have Generated the Bulk of Jobs.





Note: Based on data from 631 active companies, where data was available.

Sources: Endeavor Insight analysis, founder interviews, LinkedIn, Crunchbase, PitchBook, company websites.

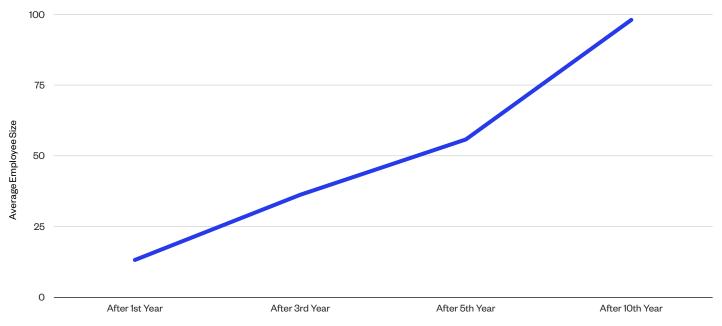
## Poland's tech companies that reach scale tend to be older and have taken many years to grow.

Endeavor Insight's research shows that the average age of Polish tech companies that have scaled to over 50 employees is over 14 years. As the chart below indicates, founders of Polish tech companies report that it takes about five years for a promising company to reach the size of 50 or more employees. Previous research

from Endeavor Insight has shown that companies achieving rapid growth in the first five years have the potential to keep adding jobs, attract capital, and contribute the most to the economy.

Only 13 percent of Polish tech companies founded between 2018 and 2022 have reached scale. Now is the time to devote more resources to help more of these newer companies achieve their potential.

#### **AVERAGE GROWTH TRAJECTORY AMONG POLAND'S TECH COMPANIES**



Note: Based on data from 59 interviews.

Sources: Endeavor Insight founder interviews and analysis.



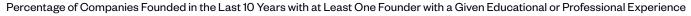
Pictured: Polish Tech Diaspora Meetup organized by Endeavor Poland in Mountain View, California

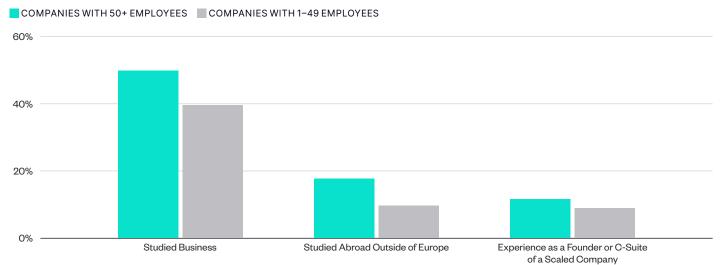
#### Understanding the traits that set founders of scaling companies apart from smaller companies can help decision makers identify promising entrepreneurial talent.

In terms of educational experience, scaled companies are more likely to have at least one founder who studied business or studied abroad beyond Europe. In terms of professional experience, scaled companies are more likely to have at least one founder with experience at C-level or as a founder in another scaled company.

Technical backgrounds were common among Polish founders. More than half of companies had at least one founder with a science, technology, engineering and math (STEM) degree. However, founding teams with technical skills alone had smaller companies, on average, than those with business skills alone or a combination of technical and business training among the cofounders. While the business models of highly technical companies may warrant smaller overall staff sizes, the founders who are scaling their companies rapidly can contribute more to the economy.

#### SCALED COMPANIES ARE MORE LIKELY TO HAVE FOUNDERS WITH CERTAIN TRAITS.





Note: Based on 743 founders of companies started between 2013 and 2022, where data was available. Sources: Endeavor Insight analysis, LinkedIn.

Tech companies that are "international first" have high growth potential and position Poland to become more globally competitive.

The success of companies that had a global mindset from the start — via their location, investors, or customers — is instructive. For Poland to reach its full potential, it needs to foster a new generation of companies that expand or are "international first" so that they build a larger consumer base, attract more capital, and bring greater value to the local economy. The rise of specialized tech companies in Poland presents an opportunity for more global success stories.

Companies that expand internationally have the greatest potential to scale and go on to reinvest in the local ecosystem. If they do not look outward from the start, new Polish companies may be limited to business models and profitability that only circulate the value within the country rather than create new capital. While software and IT companies are important employers — many of those surveyed for this project have scaled to over 100 employees — higher-value companies have the potential to drive innovation and to scale rapidly, including to international markets. This is most commonly achieved with the support of outside financing from VC, a tool that has only been readily available since the mid-2010s.

#### **International-First Companies**

Some of the companies below have adopted an international-first model while headquartered in Poland. Others have the vast majority of operations in Poland but are incorporated overseas. Some operate their businesses from offices abroad, while keeping the bulk of operations — particularly their tech base — in Poland. They all contribute to the local ecosystem.



#### Ramp

Delivering fintech infrastructure between fiat and crypto

Offices Abroad: United Kingdom, United States

"I enjoy assisting other founders, especially by establishing helpful connections in the UK and occasionally in the US. Leveraging my experience in fundraising, I am sometimes asked to provide guidance in that area. Additionally, I have been able to help my UK and US contacts navigate entry into the Polish market by answering their questions."

**SZYMON SYPNIEWICZ** COFOUNDER



#### Silent Eight

Combating money laundering and illicit financing through compliance platforms

Offices Abroad: Singapore, United Kingdom, United States

"Poland is a central spot to travel everywhere, and it's also convenient when it comes to the time zone. You can more easily catch the whole world — when you have customers everywhere, it's much easier to sync with them from Europe."

MARTIN MARKIEWICZ
COFOUNDER AND ENDEAVOR ENTREPRENEUR



#### **Spacelift**

Helping software teams manage their infrastructure resources

Offices Abroad: United States

"When we started Spacelift, we knew we had to focus on the US market. At the same time, both of us, the founders, are Polish. We grew up here, and we currently live here. We believe in the Polish talent and ecosystem, currently employing about half of the company in Poland."

PAWEŁ HYTRY COFOUNDER AND ENDEAVOR ENTREPRENEUR



#### Tidio

Providing Al-enabled virtual customer service solutions to businesses

Offices Abroad: United States

"We went global as soon as we decided to focus on developing our key live chat widget. Now, Tidio is used worldwide — by over 500 million unique users monthly. The core of our product has always been its technology (recently especially the AI), which is constantly developed in Poland by the growing team of our engineers. Without them, our product wouldn't be where it is now."

TYTUS GOŁAS CEO AND COFOUNDER



#### **Vue Storefront**

Offering a frontend platform to e-commerce businesses

Offices Abroad: United States

"We were global from day one, so our global expansion wasn't merely an expansion. In fact, we hardly conduct any business in Poland. Even though our customer and partner base is mostly spread across other European countries and the US, most of our team is Polish, and we're proud of this. Our goal has always been to demonstrate that Polish companies can compete with the rest of the world and win, and we never shy away from our Polish roots."

FILIP RAKOWSKI CTO AND COFOUNDER

## Persisting gender inequities may hold back growth in Poland's ecosystem.

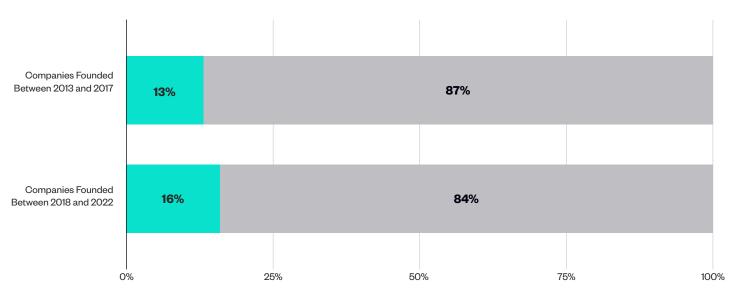
While Poland's tech sector has grown impressively, it has not done so equitably.

Only 14 percent of the companies in this study that were founded since 2013 have a female founder. As the graph below shows, the percentage of companies with

at least one female founder has made only slight improvements over time. For companies founded between 2013 and 2017, the proportion was 13 percent, while for those founded between 2018 and 2022, the proportion was 16 percent. Among the wave of post-2018 female-led companies are the smart construction logistics provider **ProperGate**, petcare booking platform **hiPets**, and childcare marketplace **Blisko** (formerly The Village).

### THE PERCENTAGE OF TECH COMPANIES IN POLAND WITH FEMALE FOUNDERS HAS SHOWN LITTLE IMPROVEMENT OVER THE PAST DECADE.





Note: Based on the founders of 392 companies, where data was available.

Sources: Endeavor Insight analysis, LinkedIn, Crunchbase, PitchBook, company websites.

These figures reflect the wider dynamic throughout Europe. In 2021, companies founded solely by women secured less than 2 percent of the total capital invested in venture-backed startups across Europe, according to the International Data Corporation (with 9 percent going to mixed-gender founding teams).<sup>21</sup>

The gender discrepancy is also apparent in the composition of the local VC industry. One female founder interviewed by Endeavor Insight commented, "I have never spoken to a woman during my fundraising process apart from the London-based VCs, so it is still a challenge. You go to a networking event, there's like three women. It's a very patriarchal culture."<sup>22</sup> In Poland, women make up only 9 percent of senior

management positions and 23 percent of total investment staff in 2021; 21 percent of VC firms in that year were exclusively male.<sup>23</sup>

Female founders often face greater barriers to scale than their male counterparts. Previous research from Endeavor Insight suggests that difficulties women experience in accessing capital is a symptom of other underlying obstacles, primarily building networks with potential investors, cofounders, and employees prior to launching their company. Successful female founders often build strong networks during their academic years and gain valuable professional experience early in their career that they utilize to scale their businesses.<sup>24</sup>



Pictured: Anna Walkowska, CTO and cofounder of ProperGate

## Decision makers need to do more to create an enabling environment for entrepreneurs who are scaling and creating value in Poland.

If more local companies were to scale, it would accelerate Poland's growth as an entrepreneurial tech hub. Scaled companies contribute the largest share of economic benefits and have the capacity to pay it forward to future entrepreneurs in a highly impactful way, through both capital and knowledge transfers. Adopting

an international mindset and addressing gender inequalities can help more local companies reach such scale.

Polish decision makers should pay special attention to understanding the dynamics of how founders scale their companies, utilize networks, and overcome barriers. The following sections offer insights on these areas with strategies for Poland to bolster its entrepreneurial ecosystem and compete globally.

### III.

#### **Network Analysis**

Network analysis traces the flow of people, capital, and information between entrepreneurs. The chart on the following page illustrates the ways in which Polish founders take knowledge and resources acquired from founding one firm and use it to help launch or grow another.

Endeavor Insight interviewed 94 founders and analyzed data on four types of relationships among founders and companies.

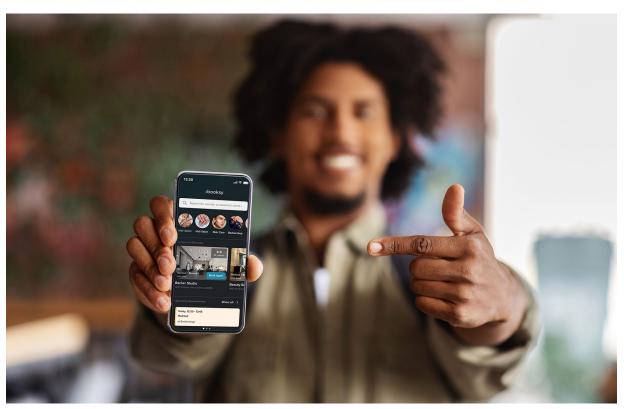
#### These are:

- 1. Former employment;
- 2. Mentorship;
- 3. Investment; and
- 4. Serial Entrepreneurship.

The size of each bubble is a function of the number of first-, second-, third-, etc. degree connections that the company and its entrepreneurs had to others in the network. Founders who started multiple companies are represented by their most prominent company or organization.

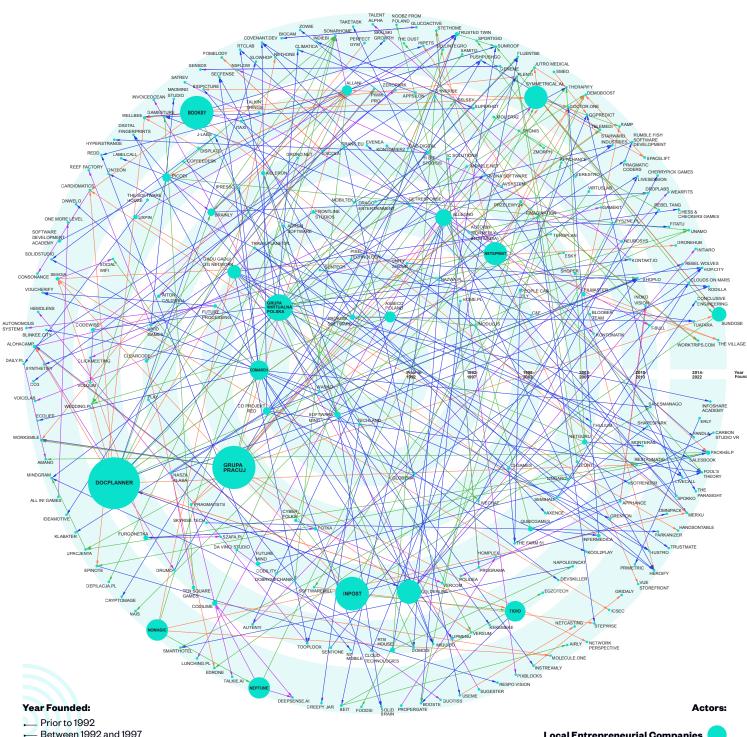
### Connections between founders were included if:

- The companies are entrepreneurial, operate in the tech industry, and are headquartered in Poland. In select cases, tech companies with legal headquarters outside of Poland were included if their founders are Polish and they provide substantial support to the local ecosystem through having at least half of their workforce in Poland.
- Sufficient data could be collected including the year the company was founded, founder identities, and confirmation of at least one connection former employment, mentorship, investment, or serial entrepreneurship.



Pictured: Booksy's mobile app on a cell phone

#### **NETWORK MAP OF POLAND'S TECH FOUNDERS**



- Between 1992 and 1997

Between 1998 and 2002

Between 2003 and 2009

Between 2010 and 2013

Between 2014 and 2022

**Local Entrepreneurial Companies** 



Note: The size of each circle is a function of the number of first-, second-, third-, etc. degree connections originating from the founders of a company. Founders are represented by their most prominent company.

#### Connections:

→ FORMER EMPLOYMENT

**→** MENTORSHIP

**► INVESTMENT** 

**→ SERIAL ENTREPRENEURSHIP** 

Sources: Endeavor Insight founder interviews and analysis, LinkedIn, Crunchbase, PitchBook, company websites.

#### THE MOST INFLUENTIAL ENTREPRENEURIAL COMPANIES IN POLAND

Rank	Company	Founder Names	Year Founded
1	Docplanner	Peter Bialo, Mariusz Gralewski, Konrad Jarowski, Lucjan Samulowski, Jakub Skoczylas, Piotr Ziewiec	2012
2	Grupa Pracuj	Przemek Gacek, Paweł Leks, Maciej Noga	2000
3	InPost	Rafał Brzoska	2006
4	Booksy	Stefan Batory, Konrad Howard	2014
5	GoldenLine	Dariusz Dudziński, Mariusz Gralewski, Jakub Skoczylas	2005
6	Grupa Wirtualna Polska	Leszek Bogdanowicz, Marek Borzestowski, Jacek Kawalec	1995
7	Symmetrical.ai	Maciej Noga, Piotr Smoleń, Daniel Wartołowski	2019
8	Neptune	Małgorzata Boryń, Jakub Czakon, Kamil Neptune Kaczmarek, Marcin Kierski, Piotr Łusakowski, Piotr Niedźwiedź, Paulina Prachnio	
9	Nomagic	Marek Cygan, Kacper Nowicki, Tristan d'Orgeval	2017
10	Tidio	Tytus Gołas, Marcin Wiktor	2013

Note: Rankings are based on the relative influence of the founders and their company on others in the network, as reflected in the size of each company on the network map.

 $Sources: Endeavor \ Insight founder \ interviews \ and \ analysis, LinkedIn, Crunchbase, PitchBook, company \ websites.$ 

## When successful founders support other entrepreneurs, the ecosystem thrives.

Analyzing the network map over time shows the importance of early successful stories that paved the way for the next generation of entrepreneurs. In the 1990s and early 2000s, founders of tech companies in Poland were not very well connected. As the ecosystem grew,

former employees of early companies started their own companies and serial founders emerged.

In the 2010s, more companies were founded that received support from earlier generations. Poland's tech sector is now robust with many founders paying it forward. The most influential companies in the ecosystem include **Docplanner**, **Grupa Pracuj**, **InPost**, and **Booksy**.

### FIVE IMPORTANT LESSONS EMERGED BY EXAMINING THE CONNECTIONS BETWEEN POLAND'S TECH FOUNDERS.

## 1. Poland's entrepreneurial network is bolstered by numerous employee spinouts.

More than 40 percent of the connections on the network map represent founders who previously worked at other tech companies. Some of the scaleups that were founded in the 1990s and early 2000s have served as the largest training grounds for future entrepreneurs. The companies with the most employee spinouts include Comarch, Allegro, Grupa Wirtualna Polska, CD Projekt Red, and Gadu Gadu (GG Network).

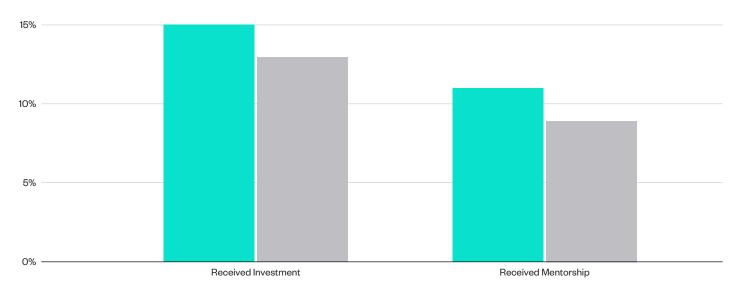
## 2. When successful companies pay it forward through investment and mentorship, Poland's tech companies scale.

Companies with founders who received investment or mentorship from another successful founder were more likely to scale their companies than those who did not receive such support, as illustrated in the graph below.

#### SCALED COMPANIES IN POLAND'S TECH SECTOR ARE MORE LIKELY TO HAVE WELL-CONNECTED FOUNDERS.

Percentage of Poland's Tech Companies with at Least One Founder Who Received Support from a Company That Had Already Scaled

COMPANIES WITH 50+ EMPLOYEES COMPANIES WITH 1-49 EMPLOYEES



Note: Based on 524 founders, where data was available.

 $Sources: Endeavor \, In sight \, founder \, interviews \, and \, analysis, \, Linked \, In, \, Crunchbase, \, Pitch Book. \, and \, analysis, \, Linked \, In, \, Crunchbase, \, Pitch Book. \, and \, analysis, \, Linked \, In, \, Crunchbase, \, Pitch Book. \, and \, analysis, \, Linked \, In, \, Crunchbase, \, Pitch Book. \, and \, Analysis, \, Linked \, In, \, Crunchbase, \, Pitch Book. \, Analysis, \, Linked \, In, \, Crunchbase, \, Pitch Book. \, Analysis, \, Linked \, In, \, Crunchbase, \, Pitch Book. \, Analysis, \, Crunchbase, \, Pitch Book. \, Analysis, \, Crunchbase, \, Crunchbase,$ 

# 3. Founders of Poland's scaled companies are providing two-to-three times more support to fellow founders than smaller companies are.

When companies scale up in Poland, they are over two times more likely to have former employees who go on to launch their own businesses, over two times more likely to have founders who provide mentorship, and over three times more likely to have founders making investments in other local tech companies.

### Founders are supporting entrepreneurs in other cities.

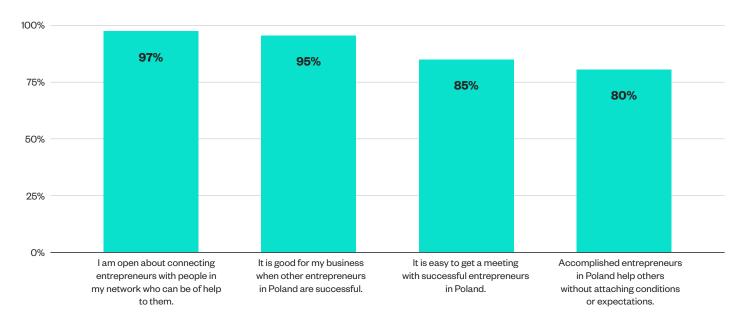
More than forty percent of connections in the network map were between founders in different cities. Warsaw ranks the highest in this regard — it has the highest exports of support to founders in other geographies, namely Kraków, Wrocław, and Gdańsk. While most cities were importing and exporting founder support in nearly equal measure, Poznań stood out as a net exporter, where founders provided more support to other cities than they were receiving.

#### A majority of tech founders in Poland have positive perspectives on the entrepreneurship community.

The analysis showed that Poland has a highly collaborative spirit, which is important for the growth of an entrepreneurial ecosystem. As the graph below illustrates, nearly all of the founders interviewed for this study were open to connecting other entrepreneurs to people in their network and agreed that it was good for their business when others were successful. A large majority also agreed that Poland's entrepreneurs help one another and that it is easy to schedule a meeting with successful entrepreneurs.

#### TECH FOUNDER PERSPECTIVES ON POLAND'S ENTREPRENEURIAL COMMUNITY

Percentage of Respondents Who Agree or Strongly Agree



Note: Based on 67 interview responses.

Sources: Endeavor Insight founder interviews and analysis.



 $\textit{Pictured: The founders of Symmetrical.ai, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole\'n and State (State of Symmetrical). The founders of Symmetrical air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole\'n and State (State of Symmetrical). The founders of Symmetrical air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole\'n and State of Symmetrical air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole\'n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole\'n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga, Piotr Smole´n air, from left to right: Daniel Wartolowski, Maciej Noga$ 

### IV. Multiplier Effects

FOUNDERS OF SCALEUP COMPANIES CAN CREATE A GLOBAL MULTIPLIER EFFECT THROUGH MENTORSHIP, INVESTMENT, AND THEIR FORMER EMPLOYEES.

The founders of **Docplanner** and **Booksy** have not only strengthened the Polish economy and their respective industries, but also positively impacted the entrepreneurship community beyond Poland's borders.

#### **Docplanner**

Docplanner is a healthcare booking platform and a management software provider for doctors and clinics. It was founded in Warsaw in 2012 by Mariusz Gralewski, Jakub Skoczylas, Konrad Jarowski, Piotr Ziewiec, Lucjan Samulowski, and Peter Bialo. The company has become a globally leading healthcare platform, employing over 2,400 people across nine offices around the world. It is the market leader in 13 countries in Europe and Latin America, 25 and it is valued at over \$1 billion. 26

Gralewski, Docplanner's CEO, had previously founded GoldenLine
— a company similar to LinkedIn
— with Skoczylas in 2005.
Samulowski joined Goldenline as
Chief People Officer, a role he also holds at Docplanner. Endeavor

Insight spoke to Gralewski and Samulowski to understand their perspectives as entrepreneurs.<sup>27</sup>

One early challenge the company faced was hiring managerial talent. According to Gralewski, "When you start expanding to new countries and hiring people with a proper set of skills, very often you have to hire people who already have experience going abroad. At the point we started expanding, those people were significantly more expensive than people in Poland by a factor of 5 or 10. We lacked financial firepower and felt this problem. It's less of a challenge now, as the difference is only 2x, but it's still there."

The founders thought carefully about their go-to-market strategy and hired managers accordingly. Samulowski notes, "Many startups think about their go-to-market team — not only the leadership, but the key people to base their go-to-market machine on — very late in the process. Docplanner was different because doctors are very non-digital, so we needed to build that muscle early on." The team also realized that they did not need someone with digital or tech

experience in go-to-market and sales roles, but rather someone with leadership qualities like ambition.

Docplanner's founders looked to expand internationally early on, including to more mature markets. The company grew organically and by making acquisitions, including Spain's Doctoralia, Italy's MioDottore, Türkiye's Eniyihekim, Germany's Jameda, and Brazil's Feegow. The experience of international expansion has taught the founders to be bold. Their first forays abroad were in neighboring markets like Czechia and Slovakia, which some may see as a natural fit. But Gralewski says that this is not necessarily the case because, "Winning Brazil is not more difficult than winning Czechia, and the prize for winning Czechia is much lower. That's a typical mistake Polish companies make. We are afraid that the big market will be more difficult, more expensive to conquer."

Several former employees of Docplanner have started their own companies, which include **Shoplo, FluentBe,** and **Slowhop**. Docplanner's founders are also mentoring and investing in the next generation of entrepreneurs.



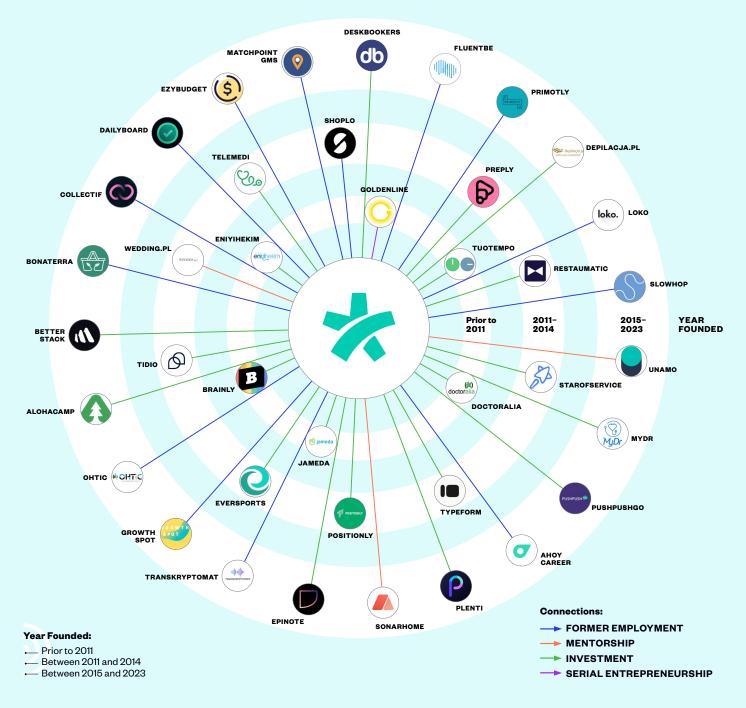


Pictured: Mariusz Gralewski (left) and Lucjan Samulowski

Gralewski has invested in multiple Polish companies, such as **Brainly** and **AlohaCamp**. He is also one of the most active mentors in the ecosystem, advising both his investees and other founders.

On mentorship and knowledge sharing in the Polish tech community, Gralewski remarks, "It's still not as normal as in the US or UK, but it's becoming more common. I see founders reaching out to me directly and asking very specific questions, so gradually we are increasing our knowledge sharing schemes."

#### THE MULTIPLIER EFFECT OF DOCPLANNER



 $Sources:\ Endeavor\ In sight founder\ interviews\ and\ analysis,\ Linked In,\ Crunchbase,\ Pitch Book,\ company\ websites.$ 

#### **Booksy**

Booksy, founded in 2014 by Stefan Batory and Konrad Howard, is a cloud-based marketplace for beauty providers, spas, massage therapists, and more. Booksy allows customers to find and schedule appointments. For businesses, the SaaS app automates appointment scheduling, calendar management, marketing tools, and payments. The company has grown to serve nearly 30 million clients and is the leader in appointment scheduling in the United States, United Kingdom, Spain, and Poland. Booksy also has offices in Brazil, France, and South Africa and is available in 40 countries.<sup>28</sup> The company now employs around 700 people, split between its local offices and its global office in Warsaw.29

Serial entrepreneur Batory came up with the idea in 2013. He had previously founded software development companies **eo Networks** in 2001 and **Sensi** 

**Soft** in 2007, before his first product company, **iTaxi**, a taxihailing app, in 2012.<sup>30</sup> Howard had worked with Batory at Sensi Soft as managing director in charge of business and product, and he was a supervisory board member with iTaxi. The pair founded Booksy with Batory as CEO, and Howard initially as CTO and CPO.<sup>31</sup> Tomasz Zembrzycki also joined the team as a cofounder in 2014.

The Booksy founders had ambitions to create a company with global reach. Although early customer growth was shared between Poland and the United States, the pair chose to focus on the larger market, deploying their first marketing budget to an American Instagram account popular with hairstylists.<sup>32</sup>

Booksy's seed rounds in 2015 and 2016 were led by the local firm Inovo VC, along with VCs from Germany and the United Kingdom. The pair describe that they initially struggled to attract American investors, who were happy with the product but had doubts about a pair of founders without degrees from leading U.S. business schools or experience at big tech companies.<sup>33</sup> Booksy's 2018 and 2019 Series B rounds, which raised \$42 million, were led by Londonbased Piton Capital and Praguebased KAYA, and included the company's first American VCs.<sup>34</sup>

A direct sales model in select U.S. cities started to make headway until the COVID-19 pandemic forced the closure of in-person stores. As the company temporarily pivoted to virtual appointments, it was forced to shed staff and regroup. The founders continued to focus on the United States once lockdowns started to be lifted, and their direct sales and marketing strategy began to pay off.

In January 2021, they raised \$70 million in a Series C round led by Cat Rock Capital of Connecticut, 35 allowing them to expand more aggressively in the United States



Pictured: Konrad Howard (left) and Stefan Batory

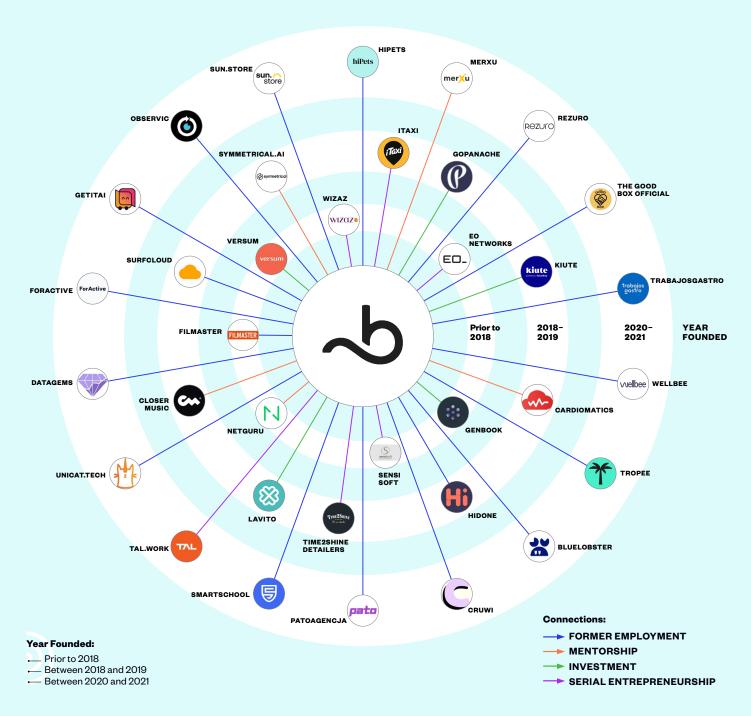
and beyond. Due to a more onerous financial environment in 2022, the pair prioritized profitability over VC-led growth. This involved moving away from direct marketing and postponing some expansion strategies to focus on developing the market they already had. Batory considers that this move to profitability engendered greater

trust with Booksy's investors, and the company now has a sound base from which it can grow further, while maintaining the bottom line.<sup>36</sup>

The cofounders of Booksy have had a significant multiplier effect. Former employees of the company went on to found **Wellbee**, **hiPets**, and **Slowhop**. Furthermore, the

founders of several companies including MerXu, Wellbee, Symmetrical.ai, and Cardiomatics cite at least one of Booksy's cofounders as a mentor. In 2024, Batory was selected as an Endeavor Entrepreneur.

#### THE MULTIPLIER EFFECT OF BOOKSY



 $Sources:\ Endeavor\ In sight founder\ interviews\ and\ analysis,\ Linked In,\ Crunchbase,\ Pitch Book,\ company\ websites.$ 

### TECH FOUNDERS IN POLAND FACE SEVERAL BARRIERS TO GROWING THEIR COMPANIES, BUT SCALED COMPANIES FACE DIFFERENT CHALLENGES.

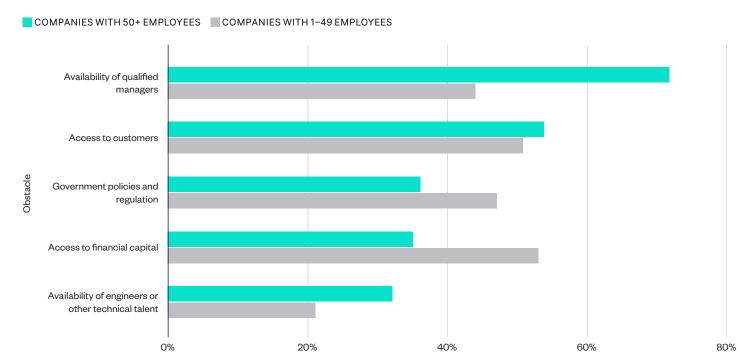
Endeavor Insight asked Polish tech founders about their most common challenges, how serious they considered each barrier to be in operating their businesses, and whether they were able to overcome them. The findings below are based on the responses of the 94 entrepreneurs who participated in the interviews.

#### **Availability of Qualified Managers**

Overall, the top challenge for Poland's tech founders is access to qualified managerial talent. As the graph illustrates, this is a more pronounced barrier for founders of companies that have scaled. In contrast, founders of smaller companies reported access to capital to be more of a challenge compared to those of larger companies.

#### **OBSTACLES TO RUNNING AND GROWING TECH COMPANIES IN POLAND**

Percentage of Interviewees Reporting a Major or Severe Obstacle



Note: Based on interview responses from 74 companies. Sources: Endeavor Insight founder interviews and analysis.



Pictured: A team photo of Docplanner employees

Over 70 percent of founders of scaled companies reported access to qualified managers as a major or severe obstacle to growing their business. Many interviewees cited the young nature of the ecosystem as a reason that there remains a dearth of experienced managerial talent in Poland. Marketing, sales, and go-to-market executives are particularly challenging C-level positions to recruit.

Managerial talent needs to fit in with the culture of an entrepreneurial company. Much of the available managerial talent in Poland gained experience at large corporations and struggle to operate within the more dynamic environment of tech startups. Still, the availability of managerial talent is improving as the sector matures and professionals are able to build leadership skills within local entrepreneurial companies.

The strength of technical talent in Poland can lead business skills to be overlooked. Interviewees suggested that

founding teams with purely technical backgrounds may be inclined to focus disproportionately on the technical aspects of the business, relegating a go-to-market strategy to a secondary consideration. Many also reported that their own technical backgrounds made it more difficult to spot sales or marketing potential when interviewing for those roles. The founders of Tylko, which uses tech to create bespoke furniture, were aware of the founding team's knowledge gap in sales and marketing. In cofounder Jacek Majewski's words, they adopted a strategy of "just shooting for the best talent and going for it. We managed, in terms of C-Suite, to grab some amazing people that way."

To address the shortage, many founders are investing in existing talent and training them internally to become managers. Other founders improved company branding to attract more experienced talent and looked abroad for strategic managerial roles.

#### **Access to Customers**

Access to customers was reported as a major or severe obstacle by a majority of founders of scaled companies, and this may be attributed to macroeconomic conditions. Many Polish tech companies have a B2B (business-to-business) model, and work from international Big Tech clients has slowed since mid-2022. The founder of a software company with an international focus recounts, "This year [2023] is one of the most challenging in our history. A lot of our clients are high growth scaleups, have been funded by VCs, and are now having to adjust."

While not specific to Poland, slow customer adoption of new products continues to stymie growth. Founders of B2B companies have a harder time identifying and closing sales with potential customers compared to those with B2C (business-to-consumer) models. This is particularly challenging for founders of cutting-edge technology companies such as blockchain and artificial intelligence, and Poland's companies that only serve the home market may be particularly limited.

Founders have addressed challenges with customer acquisition by changing their product-market fit and seeking customers abroad. Jakub Zieliński of **Mindgram**, a Warsaw-based platform and mobile app for mental wellness, explained his approach to reputation-building and increasing consumer awareness, "Invest in building relationships. Build credibility. First you have to build a relationship with someone, then you can sell to them."

#### Government Policies and Regulation

Several interviewees noted a lack of founder-friendly regulation in Poland, which is a more severe problem for smaller companies.

The complexity of the country's taxation system and uncertainties created by frequent changes to the law are disruptive to entrepreneurial companies. As **Tedee** 

cofounder Grzegorz Chuchra noted, "About a year ago, there were so many changes that I had to spend most of my time in December and January to help people go through that process." Such a complaint was common in interviews, with another founder explaining that, "The law and regulations change so often and in such unpredictable directions that it's a challenge. Very often there is a lot of potential for different interpretations. There are cases in Poland where they'll always interpret it differently in one city compared to another city, but it's still the same law."

Formal employee stock ownership plans (ESOPs) are rare in Poland. In July 2021, legislation was introduced to permit joint stock companies, theoretically making ESOPs simpler to set up.<sup>37</sup> However, the transition has been slow, and most businesses remain limited liabilities companies (LLCs). Examples where employees have benefited are limited. As one founder noted, "We definitely need some successes with ESOPs. An exit with an ESOP would mean more people would join startups and work hard. With an ESOP exit, those employees can launch their own startups. We are lacking this cycle."

Some companies choose to incorporate abroad to avoid these challenges.

According to Infermedica cofounder
Piotr Orzechowski, "We are incorporated in the US. But if we were a Polish private limited company, there would be almost no means to do it in a tax-friendly manner."

Much of this comes down to confusion over how the system was implemented.

One founder of a scaled company notes that, "I don't know how a simple joint stock company works in Poland. It was supposed to bring flexibility and an ability to grant ESOP, but it's very complex."

#### **Access to Financial Capital**

Access to capital is a more common challenge for smaller companies, but scaled companies also experience barriers due to the lack of local growth-stage financing.

There is a strong history of bootstrapping successful companies in Poland. Founders who bootstrapped their companies often started companies before local VC was sufficiently developed. In some cases, their companies were profitable early in their growth, so the founders were able to reinvest those profits back into the company. This revenue-positive model is common among IT services, outsourcing, and software development companies. The successes of these revenue-positive models may be limiting attitudes toward the necessity of growing local VC.

Many local VC funds within Poland have been funded through EU and Polish state grants, and deals with these VCs are often mired in red tape. Several founders noted that although there is now a plethora of local VCs, there are only two or three "good" ones that are supportive of founders. In terms of VC mentality, some interviewees complained that local VCs often focus on their portfolio companies

attaining certain metrics regardless of how appropriate those targets are for the company's stage.

Poland lacks post-seed stage capital, so many Polish companies seek international VC partners to finance their growth. As **Trusted Twin** cofounder Jan Wyrwiński noted, "I think VC has changed a lot in a positive way in the last five years, it's developing in the right direction. It's really good for pre-seed and seed. But the ecosystem is not very mature in terms of Series A to B and beyond, because we just don't have that much capital."

The most common solution to overcome the post-seed funding barrier is to seek financing abroad. Respondents mentioned turning to VCs in western Europe or the United States; and to angel investors and mentors in more developed markets. With the local ecosystem still at a relatively early stage of development, few international VCs have operations in Poland. Some of Poland's largest entrepreneurial companies, such as Booksy, Silent Eight, and Ramp, are headquartered abroad, often to access capital, even though they maintain over half of their workforce within the country.



Pictured: Andrew Sieja, founder of Relativity and board member at Endeavor Poland

#### Availability of Engineers and Other Technical Talent

Technical talent is one of Poland's strengths. Only 32 percent of founders of scaled companies and 21 percent of smaller companies reported access to engineers and other technical talent as a major or severe obstacle. Founders reported that they benefit from a deep pool of high-quality engineers and developers.

Salary inflation has made hiring more challenging. With the onset of COVID-19 and remote work, Polish talent could work for companies anywhere in the world, and salary demands rose. However, founders noted that layoffs by international tech companies since 2022 and a slowdown in hiring by software houses within Poland have helped to stabilize the market. Although the cost differential with western Europe has narrowed over time,

the lower cost of technical talent in Poland is still an advantage.

For deep tech companies with lab-based operations, the advantage for Polish companies is even more pronounced. As one founder of a biotech company explains, "To rent my lab, I'd be paying 5-10 times as much in Boston, and it's the same lab space. And people cannot work remotely in this industry, so for me the talent market is much more localized."

Although talent is abundant, founders who retain their employees have fewer disruptions and higher productivity. Founders reported that they hold onto the best people by creating an attractive employer offering. Companies that operate in generative AI, or in impactful areas such as healthtech or cleantech are more likely to attract and retain tech talent.



Pictured: Gdańsk University of Technology

### VI. Support Systems

There are several actors in any entrepreneurial ecosystem that make it possible for founders to succeed, including incubators, accelerators, universities, public support initiatives, and international corporations. This section analyzes the current role of these other actors in Poland's tech ecosystem.

#### **INVESTORS**

The capital providers supporting Poland's tech sector are made up of public financial institutions, venture capital firms, and individual investors. A report by VCLeaders notes that there were approximately 90 VC firms in operation as of 2023 and offers 2022 data on the top 25 most active firms.<sup>39</sup> According to a report published by PFR Ventures and Inovo VC, 210 VC firms (including international funds) were involved in the 438 deals in 2023.<sup>40</sup> Endeavor's assessment of the support system focuses on the role of founders in advancing the ecosystem.

## Several founders have become VC partners, making Poland a more founder-friendly investment environment.

Maciej Noga, along with his Grupa Pracuj cofounders Paweł Leks and Przemek Gacek, established **Pracuj Ventures** in 2019, with a focus on seed and early stage HR tech companies in Poland and Ukraine.<sup>41</sup> The three cofounders are also limited partners (LPs) in **Market One Capital** (MOC), a Warsaw-based VC firm whose

managing team and partners are former entrepreneurs. These include Marcin Kurek, who exited his marketplace business Pomocni in 2011, and Marcin Zabielski, who exited his online auction company Vatera in 2002 before going on to become the Business Development Director for Grupa Pracuj and then managing partner in Hedgehog Fund and MOC.

Other entrepreneurs who have gone on to found their own VC firm include Artur Banach, who founded **Movens Capital** in 2018 after exiting Netsprint, and Borys Musielak, the founder of Filmaster, who went on to cofound **ReaktorX** (a pre-acceleration program for first-time founders) and **SMOK Ventures.** 

A few successful founders have become angel investors in a range of local companies. However, angel investment remains rare in Poland, and angel networks are under-developed given Poland's ecosystem maturity. Many instead take a more hands-off approach by co investing with others, or by becoming LPs in local VC firms.<sup>42</sup>



Pictured: Investors Meetup organized by Endeavor Poland

### **SUPPORT ORGANIZATIONS**

Polish founders frequently participate in programs led by support organizations, which include incubators and accelerators. Interviewees reported taking part in more than 50 accelerator or incubator

programs worldwide, only 20 of which were headquartered in Poland. Nearly all of the local programs were primarily focused on pilot or early stage companies.



"The number of initiatives connecting entrepreneurs has been growing, including now Endeavor. Before that we had organizations such as Young Presidents' Organization (YPO), Entrepreneurs' Organization (EO), CEO Roundtable. The support network is pretty strong, but more is needed around mentorship. One-on-one mentoring that is structured and organized is evolving, but it is not used by startups to the extent that it could be. In my experience they are more keen on informal networking without a structured process of mentoring."

**GREG ALBRECHT** 

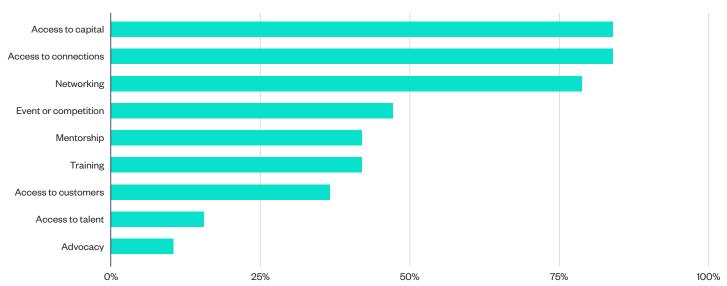
COFOUNDER OF ALBRECHT&PARTNERS, ANGEL INVESTOR, AND MENTOR

The services offered by local support programs are not fully aligned with founder needs. As shown in the graph below, few address the top challenges expressed by founders of scaled companies. The most common kinds of support that are offered (as described in publicly available information on their websites) are access to capital and access to connections,

which is not surprising as many of the local support programs originate from investment firms. Only 16 percent provide support for access to talent, and only 37 percent support access to customers. According to interviewees, the most valuable aspects of programs are introductions to investors and mentorship from experienced founders.

### LOCAL SUPPORT PROGRAMS OFFER A RANGE OF SERVICES.

Percentage of Programs Offering Services in Poland's Tech Sector



Note: Based on 20 support organizations that are based in Poland, serving companies interviewed for this study, where data was available. These are primarily comprised of accelerators and incubators.

Sources: Endeavor Insight founder interviews and analysis, organization websites, LinkedIn.

According to one founder who participated in multiple programs, "They were a good way to get access to mentors, capital, corporate contracts, and so on. Each gave me a list of mentors and advisors that I'm happy with, some of them became my shareholders."

However, several founders reported that some programs were not sufficiently tailored to their business model or level of experience. According to one, "What didn't work were the obvious classes, such as about pitching and marketing strategy. The mentorship wasn't at the highest level."

### **UNIVERSITIES**

Universities play an important role in the Polish tech ecosystem. They provide many outstanding courses in science and engineering subjects, producing a strong supply of technically gifted graduates. Universities are also the location where founders often meet their co-founders or the birthplace of innovations that become new startups.

However, when Endeavor Insight interviewed founders, there was consensus that there are few formalized partnerships between universities and entrepreneurial companies. Some founders reported that it was difficult to find willing collaborators. One founder who is also a university lecturer reported that, "establishing collaborations with universities, with public

institutions, is really challenging. They're not open or willing to do it. It's definitely a limitation in Poland."<sup>43</sup> The only formalized areas that are working are internship programs and collaborations with some companies in specialized fields such as biotech or healthtech.

To generate closer ties between universities and entrepreneurs, decision makers can start with the universities that are already generating the country's successful entrepreneurs. The table below lists the most common universities attended by tech entrepreneurs who scaled their companies. While the top three are located in Warsaw, several other cities are also represented.

#### MOST COMMON UNIVERSITIES ATTENDED BY FOUNDERS OF SCALED TECH COMPANIES IN POLAND

Rank	University	City
1	SGH Warsaw School of Economics	Warsaw
2	University of Warsaw	Warsaw
3	Warsaw University of Technology	Warsaw
4	AGH University of Science and Technology	Kraków
5	Gdańsk University of Technology	Gdańsk
6	Wrocław University of Science and Technology	Wrocław
7	Poznań University of Technology	Poznań
8	Silesian University of Technology	Gliwice
9	Adam Mickiewicz University	Poznań
10	Poznań University of Economics Poznań	

Note: Only founders of companies with at least 50 employees were included. In the cases of two universities being tied by the number of alumni founders, the average employee size of companies founded by each university's alumni was used to determine the final ranking.

Sources: Endeavor Insight interviews and analysis, LinkedIn.

### **PUBLIC SUPPORT INITIATIVES**

Poland has solid government support for entrepreneurship in the form of funding, but that is not the only sphere that requires public attention. The NCBR and PFR are two notable public institutions that have boosted the local ecosystem of funding for tech companies. However, compared to top-performing European countries, Poland lacks many of the public support initiatives that help growth-stage companies.

The table below compares the existing public support initiatives across four dimensions in Poland with top-performing markets in Western Europe. While Poland has high government support for R&D and IP protection, it lags behind the others on the other three aspects. PFR does provide some support for international expansion

through its Go To Brand accelerator, yet other European countries offer more extensive initiatives.

Most of the Western European markets have special visa programs for entrepreneurs and tax benefits for ESOPs, whereas Poland has neither. In order to facilitate the provision of ESOPs and clarify the route by which companies can access tailored tax relief, some countries have introduced dedicated startup laws. Spain passed such a law in 2022, 44 and Italy did so in 2012. 45 Such a law can also serve as a vehicle to codify special visa programs for founders and digital nomads.

	High government support for innovative R&D and IPR	High government support for growth and international expansion	Special visa program	Tax benefits for employee stock option plans
Poland	Yes	No	No	No
France	Yes	Yes	Yes	Yes
Italy	Yes	Yes	Yes	Yes
Germany	Yes	Yes	No	No
The Netherlands	Yes	Yes	Yes	No
Spain	Yes	No	Yes	Yes
United Kingdom	Yes	Yes	Yes	Yes

Sources: Endeavor Insight research and analysis, government websites.

### INTERNATIONAL CORPORATIONS

Recognizing the country's advantages, international corporations have increased operations in Poland. Boston Consulting Group (BCG) opened its Warsaw office in 1997. In 2019, it established a technology hub for Central and Eastern Europe (CEE) in Poland with multiple programs to provide technology-related services and solutions to businesses, including BCG Platinion and BCGX. BNP Paribas has a long-standing presence in Poland and was listed on the Warsaw Stock Exchange in

2011. PwC has had a presence in Poland since the 1990s, and it expanded its operations in 2021 with an investment of at least \$100 million with a goal to create 5,000 more jobs by 2026.<sup>46</sup>

International corporations are supporting founders through banking or consulting services to high-growth entrepreneurial companies, as well as encouraging the leadership role of founders as they build the ecosystem.



"At BCG, we foster the leadership of founders in shaping the Polish ecosystem. Through programs like EmpowerPL or the Poland 2.0 Summit, high-growth founders engage in mentoring, embodying leadership by giving back to emerging startups or young professionals. We also provide our own leaders with opportunities to take leaves of absence to pursue startups. Our involvement in hackathons and prominent tech conferences also underscores dedication to advancing the Polish tech scene."

**NATALIA KWIECIEŃ**PROJECT LEADER AND RECRUITING DIRECTOR, BCG POLAND



"We want high-growth companies to scale and succeed. The key is partnership, trust, and tailored-made support when needed. We try to open doors to our network and experts for high-growth founders, both locally and on the Group level. But also we ask them to educate us, to understand their needs better, as they are not only setting an example for the next generation of founders, but also they help us to understand and adopt the latest technologies or business models."

PAULINA SKRZYPIŃSKA CHIEF INNOVATION OFFICER, BNP PARIBAS POLAND BOARD MEMBER, ENDEAVOR POLAND



"PwC actively fosters founder leadership through networking, collaboration, and international expansion initiatives. We facilitate industry events and provide access to global markets, investors, and expertise, enriching the Polish ecosystem. Our support extends to thought leadership, mentoring, and advocacy for policies enhancing the entrepreneurial environment. We empower founders to lead with vision, integrity, and purpose, driving both the Polish and global economy."

MICHAŁ MASTALERZ CEO AND MANAGING PARTNER, PWC POLAND



Pictured: Warsaw, Poland skyline

### VII. Recommendations

## DECISION MAKERS SHOULD LEVERAGE THE LEADERSHIP ROLE OF POLAND'S FOUNDERS TO FOSTER THE GROWTH OF THE ECOSYSTEM.

At the time of writing this report, it has been 20 years since Poland joined the European Union, and its tech ecosystem has come a long way. Poland now has many strengths that make it a thriving home for entrepreneurship, with 80 percent of founders reporting that Poland's solid tech talent makes it a good

place to grow a business. Yet more needs to be done so that Poland can become more globally competitive. Decision makers in Poland should now work to align their efforts around the needs of founders and take action that lowers barriers for the most promising companies.



Pictured: The flags of Poland and the European Union

### **Ecosystem Benchmarking**

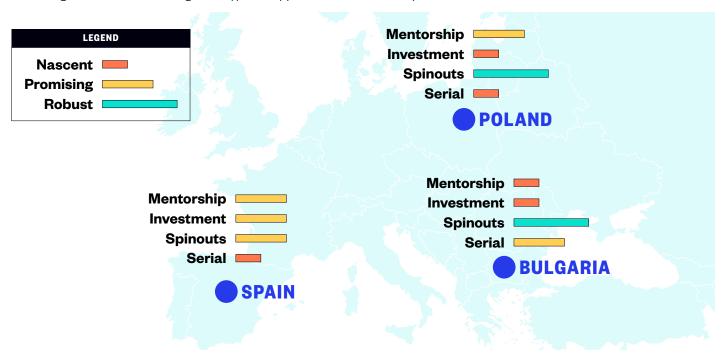
# The proportion of founders paying it forward is an indicator of ecosystem maturity.

Endeavor Insight has studied the development of ecosystems around the world and recently mapped the tech sectors in Bulgaria and Spain. A comparison of these markets offers a new framework for assessing the maturity of entrepreneurial ecosystems through the lens of founder-to-founder connectivity.

The map below presents "multiplier scores" for each of the three markets, calculated as the percentage of founders that provided support to other entrepreneurs. The results demonstrate how ecosystems that are strong in one dimension are not necessarily strong in the others. In Poland, there is a relatively high proportion of companies generating employee spinouts compared to other markets. On the other hand, the rates of investment and serial entrepreneurship are relatively low in Poland.

#### **COMPARISON OF MULTIPLIER SCORES**

Percentage of Founders Providing Each Type of Support or with Previous Experience



Note: Multiplier scores were calculated based on Endeavor Insight's network mapping studies of each country. Investment refers to angel investment. Sources: Endeavor Insight founder interviews and analysis, LinkedIn, Crunchbase, PitchBook, company websites.

More should be done to encourage founders of successful companies to become angel investors and to ensure that serial founders are providing meaningful value to the country. Decision makers can focus on supporting successful founders as they follow the founder-to-funder pathway by making resources available for information sessions on becoming an angel investor, forming angel networks among founders, and providing support for founders who want to start a VC fund, as they can make more informed

General Partners than those without entrepreneurship experience.

Serial founders are among the most important assets to a growing entrepreneurship community, as they take their knowledge of scaling one company and apply it to the next. These types of founders also make excellent mentors for other founders. Decision makers should do more to identify and support these more experienced entrepreneurs so they can create jobs and value within Poland, rather than elsewhere.

### The Principles of Self-Propelling Ecosystems

Endeavor Insight has created a framework for economic development based on more than a decade of studying markets around the world.\* The following strategies are tailored to help decision makers in Poland.

1

### Focus resources on companies with the most potential.

Local decision makers should give more focus to the fastest-growing companies that have the greatest potential to scale. Companies that can reach global customers, such as companies in specialized subsectors or with "international-first" business models, can do the most to benefit the local economy. While there is widely available support for idea and early stage businesses, large gaps exist for growth-stage companies.

Decision makers should do more to identify and support promising female founders, as they could unlock more potential in the ecosystem. There are opportunities to better understand the specialized needs of female entrepreneurs, help connect them with relevant networks, and address systemic biases within the entrepreneurship and venture capital systems.

2

### Increase the level of local and global connectivity among Polish founders.

When local founders receive mentorship and investment from other successful Polish founders they are more likely to scale. As companies scale up, they are more likely to pay it forward to up-and-coming founders. This virtuous cycle of ecosystem growth is what will sustain Poland's tech sector for the long term.

There is already a culture of collaboration among founders, but support organizations can play a large role in encouraging more founders to serve as mentors, and facilitating introductions to successful role models.

There are many Polish-origin founders living abroad who do not necessarily have operations in Poland. Their expertise could still be extremely valuable to ecosystem growth and is likely an untapped resource. More could be done to research and engage these diaspora founders. For example, **ElevenLabs**, which develops AI voice synthesis software, was founded by two Poles in New York in 2022. It attained unicorn status in 2024.<sup>47</sup> Another success story with a Polish-origin founder is **ICEYE**, based in Finland. It builds cutting-edge solutions for satellite imaging and has raised over \$300 million.<sup>48</sup>

3

### Provide more tailored support to address the challenges of scaling businesses.

Investors and support organizations should help address the challenges specific to scaling businesses, including the availability of local growth-stage capital, access to qualified managerial talent, and international expansion.

Support organizations should tailor their offerings to better match the needs of the sector, business model, and customer type of their participants. Programs should include entrepreneurs in decision-making roles, allowing them to contribute to curriculum design and investment decisions.

<sup>\*</sup> For more information see the report titled "Self-Propelling Ecosystem Development" at endeavor.org/self-propelling-ecosystems.

## Founder-Led Ecosystem Development Will Strengthen Poland's Economy for Generations to Come.

Poland's tech founders have an extremely positive outlook on the future of the entrepreneurial ecosystem. Nearly all interviewed founders responded that they are positive or very positive about the future state of Poland's entrepreneurship community. The findings in this report point to the importance of continuing to celebrate founders as role models who inspire future generations. Several

interviewees reported that choosing entrepreneurship as a career path is more appealing as the ecosystem matures and more success stories appear.

Now is the time for Poland to solidify entrepreneurship as a driving force of its economy, with an eye toward global connectivity and the leadership role of successful founders.



"This report stresses the importance of Poland not just participating in, but being at the forefront of technological advancement. Collective involvement and coordinated efforts are clearly required to expedite the growth of the entire ecosystem. Promoting greater trust and mutual support among founders, investors, and ecosystem supporters is crucial for building a resilient and innovative tech community in Poland."

**OKTAWIAN ZAJĄC**MANAGING DIRECTOR, SENIOR PARTNER & HEAD, BCG POLAND
BOARD MEMBER, ENDEAVOR POLAND



"We are finally giving a voice to founders who have achieved significant success around the world and are willing to share their experience and knowledge with those who are just starting out. It's my sincere hope that this report will help us continue the cross-sector discussions between the government, VCs, and founders on how to support other startups that dream big, scale faster, and are ready to pay it forward."

PAULINA SKRZYPIŃSKA CHIEF INNOVATION OFFICER, BNP PARIBAS POLAND BOARD MEMBER, ENDEAVOR POLAND



"Leveraging their entrepreneurial spirit and creativity, local startup founders can offer a lot of highly innovative ideas especially in fintech, B2B software, medtech, and Al. The Polish startup ecosystem needs to continuously change and develop in order to support them, especially in the post-seed stage of growth, where local financing sources are extremely limited."

ADAM OSTASZEWSKI
DIRECTOR OF MERGERS & ACQUISITIONS, PWC POLAND

### **Advice from Founders**



"If there are two pieces of advice I would give to any startup that is looking to seriously scale, one is to start your go-to-market strategy early on. And second, reach out to highly experienced and hands-on salespeople. From any industry, not just the digital space."

LUCJAN SAMULOWSKI DOCPLANNER

"Do not miss the business angle. The technology is not everything. If you're a technical founder, is it the best use of your skills to spend 50 percent of your time talking to customers, 30 percent managing the company, and 20 percent on the tech? Find a great person for every role, and very often it will not be you."

**MARCIN ŻUKOWSKI** SNOWFLAKE





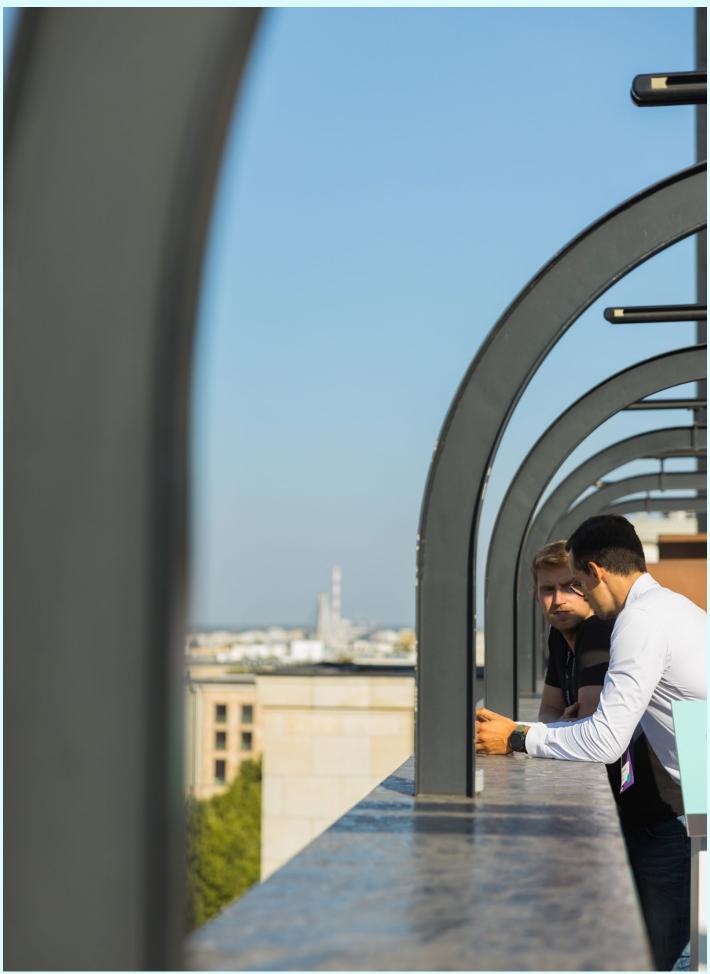
"Organizations like Endeavor connect you with people from other countries with proper experience. Joining those kinds of initiatives and being exposed to people with proper experience is a way to go."

MARIUSZ GRALEWSKI DOCPLANNER

"I would like to see more organized development around going abroad and scaling. With Endeavor, I think we can provide this. We can put our entrepreneurs together with founders in other countries to help in ways like creating enterprise sales and exchanging ideas. Such an international structure would really help."

MACIEJ NOGA GRUPA PRACUJ





Pictured: Investors Meetup organized by Endeavor Poland

## **M**ethodology

### Sampling Frame:

Companies were considered "targets" and included in the sampling frame if they met the following criteria:

### 1. The company is local.

Companies were included if they were: a) founded in Poland, or b) headquartered outside of Poland but with at least one Polish national on the founding team and at least 50 percent of the full-time workforce located in Poland. Target companies also included businesses that have closed after being founded or headquartered in the country, or those that have been acquired after being founded or headquartered in Poland.

### 2. The company fits the definition of a technology company.

Technology companies are defined as for-profit businesses whose primary activity could be described as either:

- Software development for enterprises (e.g., CRM and logistics systems, security software, outsourced software, and app development), or consumers (e.g., mobile apps, digital gaming), or
- E-commerce: Internet-based or mobile-based retail or services (e.g., e-commerce, delivery platforms, content platforms, online lenders), or
- Electronic hardware design and manufacturing (e.g., data storage components, IoT devices), or
- Other tech-enabled businesses, considered on a case-by-case basis where substantial operations relate to technology (e.g., retail or manufacturing that utilizes tech-enabled business models for reaching/serving customers).

This definition excludes firms for which software development is a secondary activity, such as consulting firms, graphic design firms, BPOs, etc., as well as businesses in which internet and mobile-based platforms are secondary business lines, such as print newspapers and brick-and-mortar retail stores, and companies for which the creation of electronic hardware is a secondary activity, such as car manufacturers.

### 3. The company is entrepreneurial.

Entrepreneurial companies are for-profit businesses started by individuals. It excludes businesses that began as either government entities or local divisions of corporations based in other countries.

#### Data Collection:

The data collected for this project comes primarily from interviews with entrepreneurs and stakeholders.

This study began by identifying "VIP entrepreneurs" and other stakeholders who had an in-depth perspective on the sector. VIP entrepreneurs selected for interviews were identified based on:

- A) Scale i.e., the current largest companies in the sector, or
- B) Influence i.e., companies that have made large exits, received large investments, or were otherwise noteworthy or influential.

The responses helped characterize the relationships between founders and establish a list of the sector's most "influential organizations," i.e., organizations with outsized influence. They also provided critical data on the challenges, network characteristics, and subsector dynamics that helped inform later analysis.

The resulting primary company list formed a basis for the study, along with additional companies identified through other sources including databases such as Crunchbase and PitchBook, as well as the portfolio companies of investors and entrepreneurship support organizations operating in the country. Only target companies were considered for further investigation, i.e., those fitting the aforementioned criteria. Entrepreneurs from the target list received invitations to set up an interview via video conference. This mass outreach campaign used standard questions, but the interviews were adapted as needed to be more conversational.

In order to ensure that the company list was comprehensive, a secondary list of companies was compiled from those mentioned in the interviews that were not already on the primary list. The secondary list included additional companies sourced from the portfolio companies of those associated with the new

mentions, and new companies found on LinkedIn, while collecting data on entrepreneurs and companies. These secondary targets then received invitations to complete interviews. Additional data was included on investments and support organization portfolios.

**Network Analysis:** 

Previous research by Endeavor Insight has found that there are four main connection types among entrepreneurs that drive the growth of an industry. These are:

- 1. Investment;
- 2. Mentorship and other types of support;
- 3. Serial entrepreneurship; and
- 4. Former employee spinouts.

To learn about these connections within entrepreneurship communities, the interviews focused on questions such as:

- 1. Who invested in your company? (Including both angel and institutional investors.)
- 2. Who was your mentor during the growth and development of your company?
- 3. What other companies have you founded?
- 4. Which of your former employees have gone on to found tech companies in Poland?

LinkedIn provided data for the analysis of founder work and education histories. This combined primary and secondary data formed an edge list of connections among companies, along with a corresponding set of outbound connections. The edge list then informed all subsequent network analysis and created the network map visualizations.

For the network analysis, each founder was assigned to only one company. Where an entrepreneur had founded multiple companies, his or her most prominent company represents his or her influence in the analysis and on the map. Prominence was assessed on a case-by-case basis by taking into account founding date, number of employees, and capital raised.

The size of a company's influence in the network was based on directed closeness centrality for unconnected graphs. In other words, the size of a company was a function of the number of first-, second-, third-, etc. degree connections that the company and its entrepreneurs had to others in the

network. All connections on the map were weighted equally. Financials and employee counts did not factor into a company's centrality.

Companies were only included in the analysis if it was possible to identify their founding year. Companies that were no longer operating were included in the analysis if it was possible to find enough data to target them. For companies that were acquired, the number of employees at the time of acquisition was used.

### Limitations:

Omitted variables may have played a role in sampling, creating bias that would otherwise expose gaps in the research process. The study's double interview, verification, and analysis procedures were meant to offset any adverse effects. If gaps in or misinterpretations of the data were revealed during the analysis, the map and results were corrected. While efforts were made to be as complete as possible in data collection by using a mixed methodology for data gathering and a detailed respondent verification process, the observed data used in this study is only a highly developed representation of the entrepreneurship network in each community and may omit certain data or attributes.

### **Confidentiality:**

Endeavor maintains confidentiality, and collected data is accessible only to Endeavor and its research partners.

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