

MAPPING THE SOFIA TECH SECTOR

A Network Analysis of the
Entrepreneurship Community

A REPORT BY:

endeavor
INSIGHT

ABOUT ENDEAVOR INSIGHT

Endeavor Insight 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. Learn more about our research at endeavor.org/insight.

The methodology utilized in this study builds on previous Endeavor Insight research supported by the Omidyar Network, the Kauffman Foundation, and the Heron Foundation.

ENDEAVOR INSIGHT STAFF

Leah D. Barto

Ana Paula Gil

Marine Fujisawa

Alejandro Noguez-Ibarra

Martin Pickering

Hamza Shad

Divya Titus

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BESCO

Bulgarian Startup Association

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Bulgarian Development Bank has recently returned its focus to supporting SMEs with high-growth potential by providing debt and equity instruments that are tailored to fill market gaps. The Bank's subsidiary, Capital Investment Fund (CIF), is positioned to support scale-up companies by co-investing alongside other local and regional VCs, thus facilitating larger investment rounds. CIF's role as a quasi-sovereign investor also helps to position their investees in markets where this plays an important role. A notable example is their investment in IPS, a leader in power management technology, to support their market expansion in Saudi Arabia servicing flagship clients such as Saudi Aramco.



**BULGARIAN
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**FUND OF
FUNDS**

FUND MANAGER OF
FINANCIAL INSTRUMENTS
IN BULGARIA



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Executive Summary

Endeavor Insight has partnered with Endeavor Bulgaria to study the entrepreneurship ecosystem for tech companies in Sofia, Bulgaria. With additional research support from the Bulgarian Startup Association (BESCO), 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.

Context

Bulgaria built a strong reputation as a software producer when formerly state-owned ICT and hardware companies were no longer viable and individuals began to build successful IT services companies. Since joining the EU, Bulgaria has had access to funding mechanisms for startups. By the early 2010s, many companies experienced rapid profitability from low operational costs and international demand. Specialization in high-value sectors and further development of local VC funds accelerated local growth. **Several companies have experienced outsized international success and the tech sector is now critical to the Bulgarian economy.**

Opportunity

Bulgaria has the potential to become a regional tech hub in Southeast Europe. Compared to many of its Southeast European peers, **Bulgaria has a more developed ecosystem** in terms of support for companies at the growth and expansion stages and **the country's support programs provide more extensive services** to entrepreneurs establishing their businesses. Bulgaria now has the opportunity to leverage its assets and coordinate regionally with other leading economies to increase foreign investor interest in the entire region.

In order for Bulgaria to serve as a regional anchor, it should help more tech companies reach scale. A small proportion of companies reach the size of 50 or more employees, but they are responsible for a disproportionate share of the jobs created. **Scaled companies can do more for the economy and help address the country's population decline, so more efforts should be devoted to helping tech companies grow**, especially in high-value sectors that can help fulfill Bulgaria's potential as an innovation hub.

Network Analysis

A snapshot of Sofia's tech entrepreneurship network shows two important lessons:

- 1. Founder-to-founder connectivity is strong.** Local founders are actively taking knowledge and other resources acquired from founding one firm and using it to help launch or grow another through previous employment, mentorship, and investment.
- 2. Certain types of network connections help founders scale.** Founders who had worked at other local scaled tech companies, and who had received mentorship or angel investment from another local founder were more likely to be top-performing companies in terms of scale.

Telerik is the most influential entrepreneurial company in the network, having employed people who went on to found nearly 40 other local companies. The founders have played a significant role in the development of the network through making investments, creating a training academy, and serving as board members.

Founder Challenges

Access to **technical talent** was the most common challenge cited by Sofia's tech founders, followed by access to **qualified managers**. To overcome these barriers, several companies have established training programs or in-house academies that provide talent for their own businesses as well as the wider tech community. Founders reported follow-on **capital** beyond the seed and early stages is very difficult to secure and they face extra scrutiny in accessing foreign VC due to the geography. Access to **customers** was less of a challenge, and successful companies often set up specific strategies for acquiring international customers. The lack of **legal frameworks** has also hindered the growth of the tech sector.

Support Systems

Support organizations such as **accelerators, incubators, and member networks** play an important role in the local tech sector by offering services that connect founders with resources they need. In addition, a number of **coworking spaces, trade associations, and media outlets** help create an enabling environment.

Lessons From Western European Ecosystems

Other countries, especially those in Western Europe, can provide examples of **policies that recognize, incentivize, and reward high-potential entrepreneurs**. Policy reforms spearheaded by BESCO would address some of the existing limitations with regards to accessing capital, accessing talent, and the ease of doing business.

Recommendations

This report offers four strategies that decision makers in Sofia can use to align their efforts and support the local tech sector.

1

Take action to help more tech companies reach scale and continue to grow.

2

Increase support for founder-led ecosystem development.

3

Put in place legal frameworks and policies that enable local entrepreneurship and innovation.

4

Coordinate regionally to establish Southeast Europe's global competitiveness.

ABOUT THE DATA

The findings are based on more than **100 interviews with local tech entrepreneurs** from June through August 2021, and data on more than **500 companies** and their founders. In addition, data was collected on more than **160 support organizations, investors, and mentors** that support the local tech community. This report focuses on the entrepreneurship community in the city of Sofia, Bulgaria. This is where the vast majority of entrepreneurial tech activity is concentrated in the country, as indicated by **90 percent of BESCO's 500 member companies being located in Sofia**. The data on the local ecosystem was collected in collaboration with BESCO and other partner organizations and the authors believe the sample is sufficiently representative to substantiate the validity of the observations and conclusions made in the report.

Endeavor also analyzed more than **100 entrepreneurship support programs in other European countries** for comparative policy analysis.

BULGARIA BUILT A STRONG REPUTATION AS A SOFTWARE PRODUCER

Sofia's tech sector dates back to the 1960s when the information and communications technology (ICT) industry was built from the Soviet Union-led Council for Mutual Economic Assistance (CMEA).¹ The proactive industrial policy had led Bulgaria to become, along with East Germany, the largest producer of hardware and software in CMEA. With the end of the communist regime in 1989 came the dismantling of large state-owned enterprises. Research and development centers were closed and the hardware-based areas of the sector swiftly collapsed.

At the time, the electronics and telecommunications sectors accounted for 25 percent of industrial production in Bulgaria employing about 130,000 people, including 8,000 highly qualified engineers.² By the late 1990s, individuals and teams of managers and programmers from the formerly state-owned companies started to develop Bulgaria's private sector. Many of these software companies became integrated in global value chains, initially as sub-contractors offering strong technical skills and low labor costs, with several moving up the value chain to more complex operations and high value-added projects.

By 2000, Bulgaria had developed a good reputation as a software producer, often in niche areas, and was the world's 25th fastest growing ICT market from 2003 to 2007.³ The local economy was further boosted in 2007 with accession to the European Union (EU), which provided open labor and export markets among its member states. EU membership also granted Bulgaria

access to a range of European funding mechanisms. The European Investment Fund's (EIF) JEREMIE program provided €21 million in funding for the accelerator and early-stage fund **Eleven**, as well as the **LAUNCHHub** seed fund. Further EU subsidies of €34 million have supported the creation of **Sofia Tech Park**, the first science-and-technology park in Bulgaria.⁴

The development of the ecosystem started with isolated company successes.

Early events in the development of Sofia's modern tech sector laid the foundation for an ecosystem which has steadily matured since the mid-2010s. The sector started to develop with companies such as **Musala Soft**, which was founded in 2000 by Elena Marinova and Delyan Lilov and offers a wide range of software engineering services, and **SiteGround**, a web hosting provider founded in 2004 by Ivo Tzenov and Tenko Nikolov. Given the constraints of a small local market, both started by providing services to foreign customers. SiteGround bootstrapped and is now one of the world's leading web hosting companies.⁵ The company now hosts over two million websites and has grown its staff to over 500, with four offices in Europe and the United States, and six data centers across the world.⁶ Another company that bootstrapped to become a leading global presence is **Chaos**, a computer graphics company founded by Peter Mitev and Vladimir Koylazov. Its products — 3D rendering, real-time rendering and simulation software — are used by design studios, architectural firms, advertising agencies, and visual effects

companies. The company has won one sci-tech Oscar in 2017, and an Engineering Emmy in 2021.⁷ Chaos has grown to have offices in Sofia, Los Angeles, Seoul, and Tokyo.⁸ Other such early founders identified gaps in the market where they could start their own IT services companies and develop software to better address client needs.

Another company that achieved early profitability is **JetFinance International**, founded in 2001 by Elvin Guri and Ivan Hristanov. The company grew to become the region's largest independent consumer lender, with 3,600 outlets in 150 towns in Bulgaria, before being acquired in 2007 by Cetelem, the consumer finance subsidiary of BNP Paribas.⁹ Guri has gone on to become an angel investor and mentor in Eastern and Central Europe.¹⁰ He is now the CEO of **Empower Capital**, a private equity firm set up in 2014 with the support of the European Investment Fund. The €21 million fund invests in a range of Bulgarian startups in fields including tech, manufacturing, and life sciences.¹¹

Other successes include **Easy Credit**, a fintech company founded in 2005 by

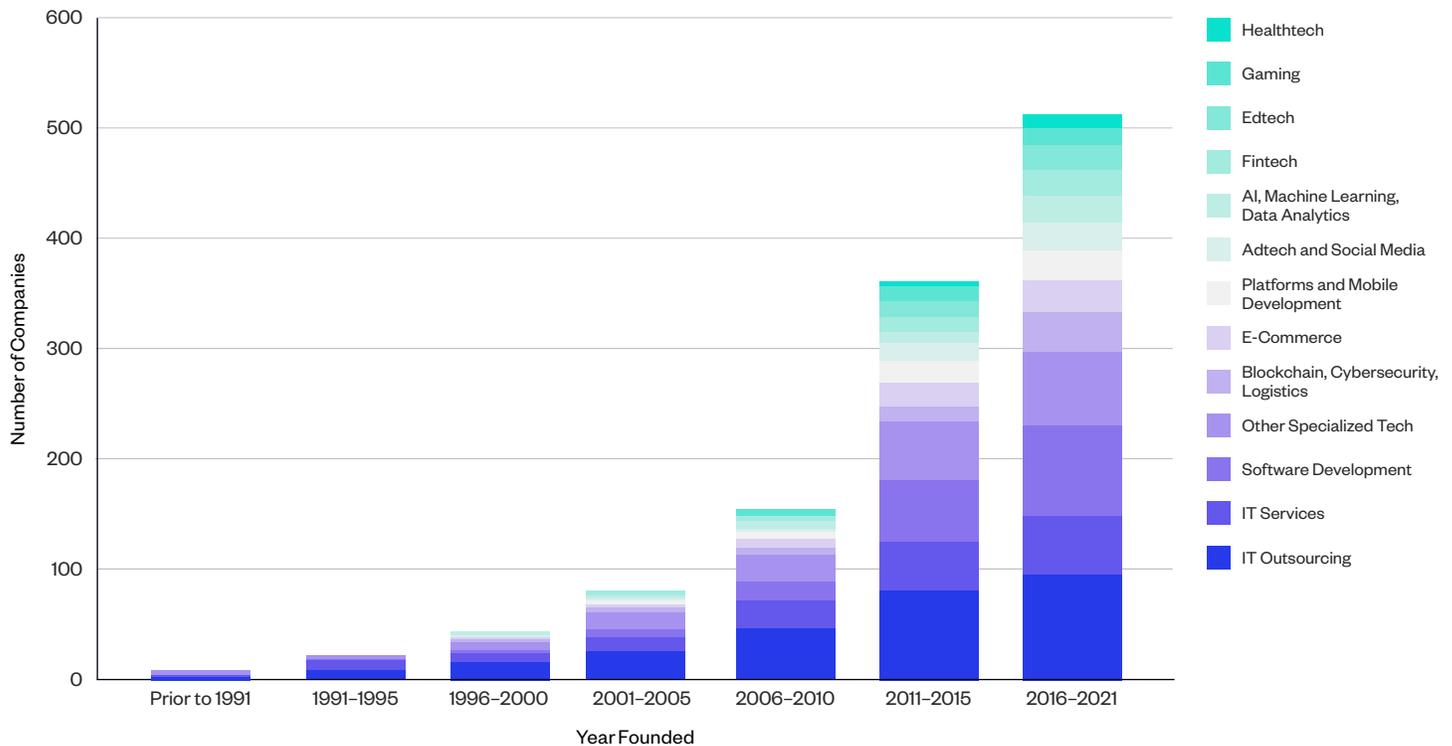
Nedelcho Spasov and Stanimir Vasilev, and **Tiger Technology**, founded in 2004 by Alexander Lefterov and Robert Keske, which provides software for companies to share, manage, and migrate their data more easily. These companies took advantage of the low-cost technical workforce available in Sofia when they started, and secured high-paying foreign customers. Other factors that helped enable the sector's early growth included low operational costs such as office space and the country's flat corporate tax rate.

Recent examples indicate the sector's ability to support fast growing companies that are successful on the global stage. At the end of 2021, **Payhawk**, a company offering financial solutions for businesses, raised a \$112 million Series B round and has expanded to offices in London, Berlin, and Barcelona.¹² **Gtmhub**, an OKRs management software, raised a record \$120 million Series C round. It was founded in 2015 and now has 240 employees across offices in Sofia, Berlin, London, and Denver.¹³ Both companies have founders who were former employees of **Telerik**, an enterprise software company founded in 2002 that went on to be acquired for \$263 million.



CUMULATIVE GROWTH OF TECH COMPANIES IN SOFIA BY SUBSECTOR

Sofia's tech sector grew out of IT services and outsourcing and has diversified into higher-value industries and product development.



Note: Based on available data from 514 companies. The "Other Specialized Tech" category includes subsectors with fewer than 10 companies (AR/VR, LegalTech, IoT/Hardware, and TravelTech).

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

Specialization in high-value sectors and access to early-stage funding has enabled growth.

Companies founded in the early 2000s began specializing in a range of industries including offering higher-value services and niche products, as the graph illustrates. Bulgaria's tech sector is shifting from business models based on providing outsourcing services with low-cost labor and low added value, to R&D-intensive and high-value-added products and services. While the public authorities were slow to support the local industry in the early years of its modern development, attitudes have changed, and public support has increased. In 2014-20 Bulgaria adopted and implemented a Strategy for Smart Specialisation, an EU-funded initiative that provided targeted support for certain priority industries, including ICT.¹⁴ In 2016 the city of Sofia developed

and adopted its own, tailored Strategy for Smart Specialisation, providing a further official boost to the local sector.

The number of local VC and private equity funds has grown to 17, set up either by European investment funds; and since 2015 augmented by the **Fund of Funds**, co-financed by the EU-supported European Structural and Investment Funds, and owned by the Bulgarian state.¹⁵ This has allowed companies to secure early-stage funding, with many growing to a sufficient size to attract larger ticket VC from outside Bulgaria. In 2022 the Fund of Funds launched its fifth fund, a mezzanine/growth fund to be managed by **Silverline Capital** with €42 million under management, an important milestone for the ecosystem.¹⁶ This further extended the available funding coverage by the Fund of Funds to all stages of the business life-cycle.

Bulgaria's oldest VC fund is **NEVEQ**, founded in 2006 with the support of the European Bank for Reconstruction and Development (EBRD) and private investors from Europe and the United States. The EIF joined as a key supporter later, allowing the creation of a second fund, NEVEQ II, in 2015.¹⁷ The two funds have invested over €15 million in 14 companies in the growth, early, and seed stages, in sectors including enterprise software, fintech, analytics, and internet.

Since the establishment of NEVEQ, Eleven, and LAUNCHub, a second wave of funds has emerged, supported by a variety of sources. The Fund of Funds Bulgaria helped set up new initiatives, which, along with efforts from JEREMIE and EIF, totalled around €400m, but the capital was spread thinly. New VC and private equity firms also sought money from private enterprises such as pension funds and other international investors.

BlackPeak Capital was established in 2014 by Ivailo Gospodinov, Rossen Ivanov, Angel Stefanov, and Kiril Ivanov, with the support of the EBRD, the International Finance Corporation (IFC), as well as pension funds and other private financial institutions. It has grown to manage two funds with assets of €150 million, investing in companies in Bulgaria, Romania, Serbia, and Slovenia. Portfolio companies are in a range of industries, including software, IT services, manufacturing, and telecommunications.¹⁸ In 2021 BlackPeak targeted additional funding of €120 million for its South Eastern Europe (SEE) Fund, raising €68.5 million by mid-year.¹⁹

The tech sector has become critical to the Bulgarian economy.

The overall IT sector has outperformed GDP growth since 2010, and in 2020 computer programming, consulting, and information services accounted for 5.6 percent of GDP, up from 4.9 percent in 2019, and only 1.8

percent in 2011.²⁰ And this may not capture the full extent to which tech is driving the economy since national policies, including data collection on the tech sector, is lagging behind the growth and diversification of the industry.* According to a 2021 report from the Bulgarian Association of Software Companies (BASSCOM), the software sector employed more than 34,300 people in 2020, with an average wage more than three times the national average. The sector's revenue grew by 18.4 percent in 2019, to €2 billion, more than 80 percent of which were export-focused, mostly in the EU and United States.²¹

The development of Sofia's tech sector has benefited from having a skilled workforce. According to the EU STEM Coalition, more than 10,000 students graduated from STEM careers in 2019.²² Bulgaria was also ranked 20 out of 100 countries measured in the English Proficiency Index 2020, which indicates that its workforce and business community have greater access to foreign English-speaking markets than lower ranking countries such as Greece, Estonia, and Latvia.²³

Bulgaria's annual average GDP growth was 3.4 percent from 2017 to 2019, and after a sharp pandemic-related contraction in 2020, growth is forecast to trend towards a "potential" 2.75 percent per year by 2025.²⁴ This would be below the levels required to support substantial societal improvements. The tech sector is well placed to drive more rapid economic growth, having been an important economic engine before the pandemic struck. It accounts for an estimated 4 percent of GDP and was growing at an annual average rate of around 10 percent before the pandemic.²⁵

* Available macroeconomic data for the European Union is limited to the NACE Rev. 2 categorization, where the tech sector falls under "Information and communication" or the more nuanced category, "IT and other information services." This does not currently capture the tech-enabled development in other industries such as e-commerce in "wholesale and retail trade," healthtech in "human health activities," or fintech in "financial and insurance activities."

II. Opportunity

BULGARIA HAS THE POTENTIAL TO BECOME A REGIONAL TECH HUB IN SOUTHEAST EUROPE

Given the dynamic growth of the tech sector in Sofia, Bulgaria has an important role to play in the Southeast Europe region.

As its entrepreneurial ecosystem continues to mature, Bulgaria can serve as a regional leader for peer countries such as Albania, Bosnia and Herzegovina, Croatia, North Macedonia, Romania, Serbia, and Slovenia. In relation to these neighboring countries, Bulgaria is well positioned to be an anchor for the region because of its founder-driven ecosystem.

Prior to the onset of COVID-19, Bulgaria had one of the lowest unemployment rates in Southeast Europe, standing at 4.2 percent

in 2019 as outlined in the table below. It also had one of the lowest youth unemployment rates in the region, 8.9 percent, which is an indicator of socioeconomic stability and a positive outlook for the country's economic future. The World Economic Forum's 2019 Global Competitiveness Report, which compares the productivity of countries' economies, ranks Bulgaria 49th internationally.²⁶ This places Bulgaria ahead of all its regional peers, with the exception of Slovenia. Unlike some of its neighbors, Bulgaria also is a member of the European Union, which integrates it with many of the world's most advanced economies.

COMPARISON OF SOUTHEAST EUROPEAN COUNTRIES

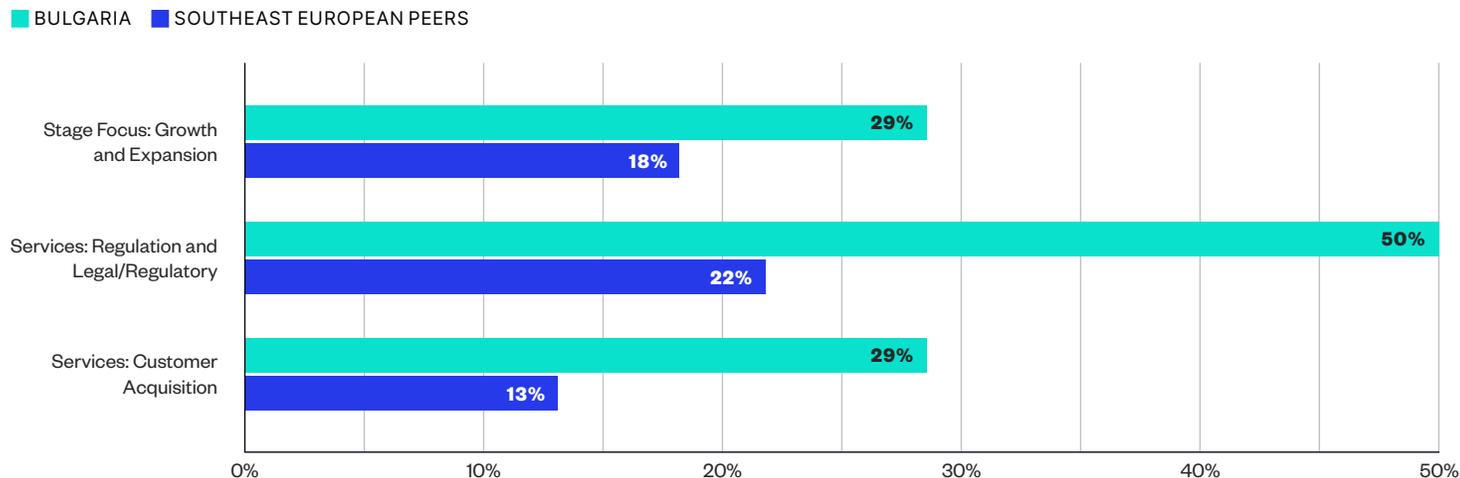
Country	Population (2019)	Unemployment, total (% of total labor force, in 2019)	Unemployment, youth (% of total labor force ages 15-24, in 2019)	EU Member?
Albania	2,854,191	11.47	26.99	No
Bosnia and Herzegovina	3,300,998	15.69	33.97	No
Bulgaria	6,975,761	4.23	8.89	Yes
Croatia	4,065,253	6.62	16.62	Yes
North Macedonia	2,083,458	17.26	35.55	No
Romania	19,371,648	3.91	16.78	Yes
Serbia	6,945,235	10.4	27.12	No
Slovenia	2,088,385	4.45	8.15	Yes

Note: Unemployment rates are modeled estimates from the International Labor Organization (ILO).

Source: World Development Indicators, World Bank (2019).

BULGARIA OFFERS MORE SUPPORT FOR KEY ENTREPRENEURIAL NEEDS THAN REGIONAL PEERS

Comparative Analysis of Support Organization Offerings



Note: Percentages represent the number of entrepreneurial support programs in the geography with the given offering divided by the number of total programs identified in the geography. "Southeast European Peers" are defined as the following countries: Albania, Bosnia and Herzegovina, Croatia, North Macedonia, Romania, Serbia, and Slovenia. Analysis was based on available data from 37 support organizations.

Source: Endeavor Insight research and analysis.

According to global investment magazine fDi Intelligence's 2019/20 evaluation of worldwide fintech markets, Sofia was identified as the most cost-effective location for businesses.²⁷ This is a major competitive advantage, as the ranking takes into consideration the cost of establishing a business, corporate tax rate, average salaries, and office rent prices. Bulgarian entrepreneurs continue to have the capacity to deliver high-quality services and products to customers around the world at lower prices than others. Success stories like that of Telerik demonstrate that this cost effectiveness exists not only in fintech, but also in other tech subsectors as well.

More recently, Bulgaria has been hit hard by the COVID-19 pandemic, with the highest per capita death rate in the European Union. Other Southeast European countries also rank highly in terms of that metric.²⁸ Bulgaria's economy has suffered in terms of disruptions

to production and higher prices as a result, but the government has also introduced a wide range of economic relief measures to mitigate the damage.²⁹ While the long-term economic effects remain unclear, some features of Bulgaria's entrepreneurial ecosystem suggest that it will remain a regional leader.

Compared to many of its Southeast European peers, Bulgaria has a more developed ecosystem in terms of support for companies at the growth and expansion stages.

Endeavor Insight found that 29 percent of Bulgarian support organizations focused on growth and expansion, compared to only 18 percent of those in Southeast European peer countries. The **Bulgaria Innovation Hub**, for example, has an accelerator program that aids Bulgarian tech startups in expanding internationally to the United States by providing legal guidance and connections to potential investors and customers.³⁰ **Endeavor Bulgaria's** programs

assists companies in growing and becoming globally competitive through focused workshops, one-to-one mentorship, and networking opportunities.³¹ In contrast, top programs in neighboring countries are largely focused on the idea or incubation stages, including Croatia's ZIP Startup Program and the incubator at INTERA Technology Park in Bosnia.

Endeavor Insight also found that Bulgarian support organizations provide more extensive services to entrepreneurs in establishing their businesses. As the graph illustrates, half of Bulgaria's programs provide assistance with company registration and regulatory/legal considerations, compared to only 22 percent of programs in peer Southeast European countries. In addition, 29 percent of Bulgarian support organizations explicitly offer guidance in acquiring customers, compared to only 13 percent of those in regional peer countries.

Bulgaria can leverage its entrepreneurial ecosystem to bolster not only its own economy, but also those of neighboring countries, and thereby increase foreign investor interest in the region.

There are already signs of Bulgaria playing a lead role in this mutually beneficial, cross-country coordination. For example, the Bulgaria-based investors Eleven, BlackPeak, and LAUNCHub invest in and support companies across Southeast and Central Europe. Eleven has also partnered with companies to establish two region-wide accelerator programs: the **Visa Innovation Program**, which supports fintech companies, and the **SOinventure Program**, which supports healthtech companies.³² These programs are connecting innovative entrepreneurs across Southeast Europe into a larger network. While the Visa Innovation Program is non-residential and co-hosted in Greece and Turkey, the SOinventure Program brings selected founders to Sofia to provide access to mentorship, business training, and technical support. Endeavor Bulgaria also cooperates regionally with Endeavor's offices in Greece, Turkey, and Romania, by holding joint investor pitches, exchanging mentors, and coordinating their scale-up support programs.

Greece and Turkey are large countries with more mature tech ecosystems, although they do not have as close linguistic and cultural ties to the other Southeast European countries as Bulgaria.

Greece, Bulgaria's southern neighbor, has faced economic difficulties since its 2009 debt crisis and continues to have a high unemployment rate. At the same time, it has incentivized its well-established diaspora networks around the world to contribute to its recovery and growth.³³ As digitalization has further lowered the barriers for maintaining global connections, Bulgaria can also leverage its extensive diaspora.

Although Turkey is not an EU member, it is a leading economy in the region and is also well-connected to Middle Eastern economies. Turkey has a large community of tech entrepreneurs, with significant local support infrastructure and founder-to-founder reinvestment within Istanbul's ecosystem. However, a previous Endeavor Insight study found that due to geopolitical and economic instability since 2018, fewer resources were being invested back in the community, and the ecosystem's growth had slowed down.³⁴

Bulgaria can act regionally with Turkey and Greece for each country to complement the others' strengths and facilitate the exchange of knowledge and resources across Southeast Europe as a whole. The Visa Innovation Program already exemplifies this type of regional connectivity. While Turkey and Greece may have more mature ecosystems, Bulgaria is contextually closer to other Southeast European countries, so its dynamic ecosystem can serve as a more relevant model for the region.



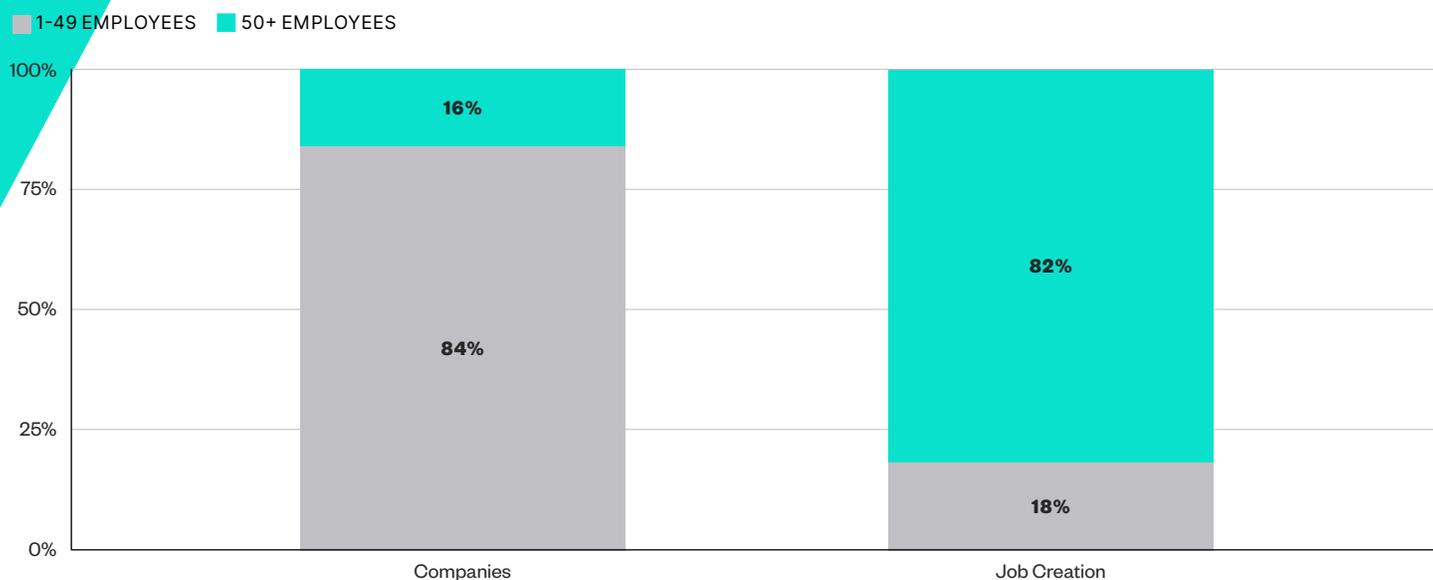
IF MORE TECH COMPANIES SCALE, IT WOULD STABILIZE THE ECONOMY

In order for Bulgaria to become an anchor and strong regional partner, decision makers should seize the opportunity to better support its most promising companies. Focusing on companies that scale is important because they offer several benefits including higher average wages and improved economic

stability.* In Sofia's tech sector, there is a small proportion of companies that have reached 50 or more employees — just 16 percent of all tech companies in the study. This small group of companies generate a disproportionate number of jobs (82 percent), as the chart below illustrates.

JOB CREATION BY COMPANY SIZE IN SOFIA'S TECH SECTOR

Scaled companies are a small proportion of the total number of local companies, but they have generated the bulk of jobs.



Note: Based on data from 472 active companies, where data is available.

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

The businesses that grow to 50 or more employees do the most for the economy.

While most of the tech sector is made up of companies with fewer than 50 employees, it is the businesses that grow larger that can provide the most benefit. Previous studies from Endeavor Insight have outlined 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.³⁵

Cities where new tech companies are continuing to reach scale have more

productive economies. In the past decade, more than 320 companies have been founded in Sofia, but fewer than 10 have scaled to 50 or more employees. More new companies need to scale to ensure the future of the tech sector's economic contribution.

According to preliminary results from the 2021 census, Bulgaria's population has declined by 11.5% in the past decade.³⁶ Projections offered by the United Nations indicate that if these patterns continue, Bulgaria will contract further to about 5.4 million people by 2050.³⁷

* See "How to Identify the Best Businesses for Local Economic Growth" at endeavor.org/best-businesses.



If more companies that start up reach scale rapidly, it would not only add more higher paying jobs, but it could also help address population declines among working-age people. A survey by BASSCOM of thousands of Bulgarians living in more than 70 countries, showed that 57 percent would return home if offered a job in the IT industry.³⁸ If more scaling tech companies could offer competitive salaries and fast career development, it could contribute toward a larger homecoming strategy to address the persisting “brain drain”.

Focusing on high-value companies is necessary for the sector’s future growth.

It is important to identify the types of businesses with the most potential to scale and understand how to help them grow more rapidly. Endeavor Insight identified certain types of tech companies that make up Sofia’s group of high-value companies. These include those that are:

1. Operating in subsectors that provide industry-specific products and services with the potential to serve customers internationally (e.g., adtech, fintech, healthtech, and ecommerce), or
2. Utilize sophisticated technologies that can give them a competitive advantage over global competitors (e.g., blockchain, AI, machine learning, mobile development).

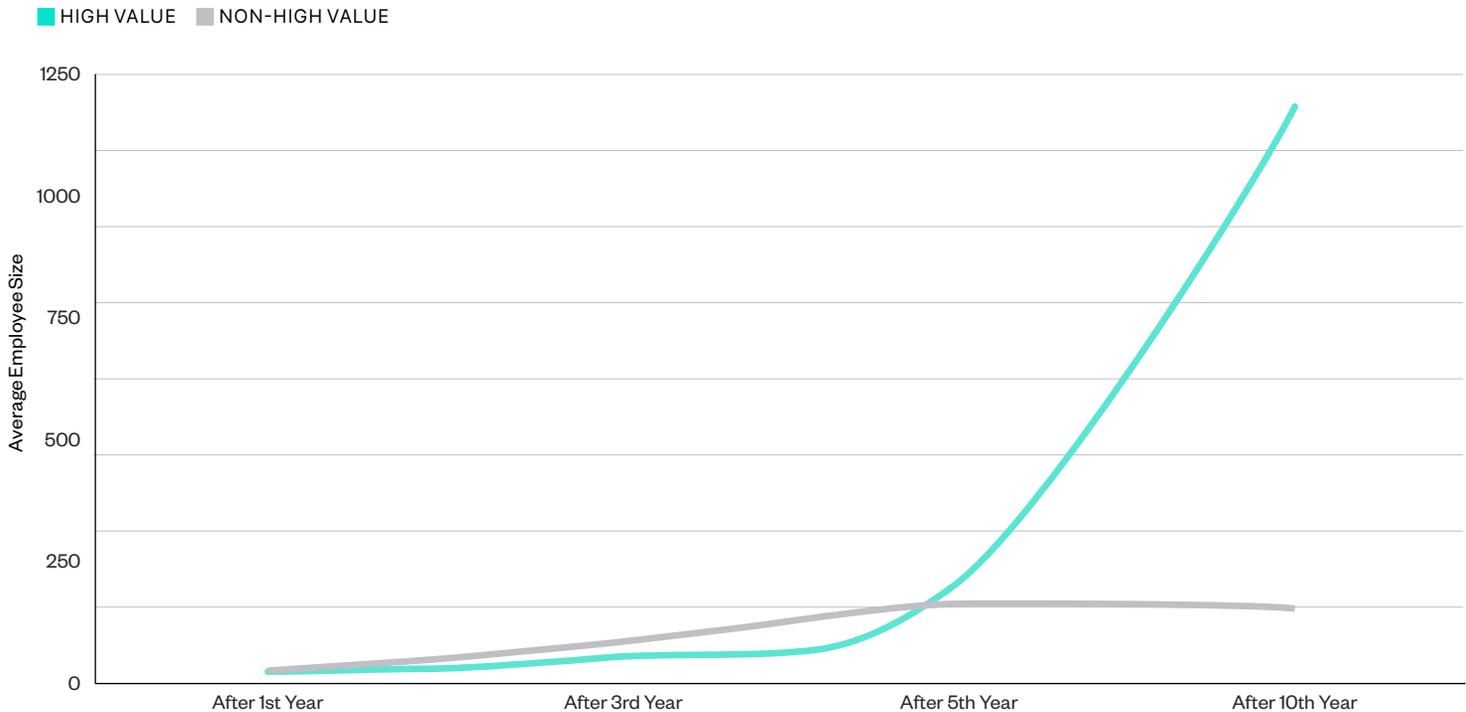
High-value companies not only have larger than average employee sizes overall, but also different growth patterns than other businesses. High-value companies are more likely to be those developing cutting edge technologies that showcase Bulgaria’s distinctive assets as an innovation hub. Therefore, they have distinctive needs as startups and deserve particular attention.

When analyzing the companies that have achieved the size of 50 or more employees, high-value companies grew more slowly than other businesses in their first five years as illustrated on the graph on the next page. This suggests that they are presented with greater obstacles, which could be due to the nature of their business models (e.g., the need to prototype, secure specialized staff, or amass more upfront capital). However, after five years, high-value companies had much higher overall growth compared to their counterparts, which stayed at the size they had reached at five years, on average.

In previous Endeavor Insight research, companies that eventually reach scale often do so much more rapidly on average — in some markets within their first one-to-three years. In Sofia, the longer timeline suggests that founders are not only facing higher startup barriers due to their business models, but also experiencing more systemic challenges in scaling their business compared to other markets.

AVERAGE GROWTH TRAJECTORY AMONG SCALED TECH COMPANIES IN SOFIA

High-value sectors experience greater growth in the number of employees than data analytics or IT.



Note: Based on data from 72 interviewed respondents, where 24 of their companies had scaled to 50 or more employees. High-value companies include those operating in adtech, artificial intelligence, augmented reality, blockchain, cloud services, cybersecurity, ecommerce, edtech, fintech, healthtech, machine learning, mobile development, enterprise tech, and traveltech. Non-high-value companies operate in subsectors including data analytics and IT outsourcing.

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

Helping more tech founders reach scale is a necessary part of driving Bulgaria's economy.

Fast-growing tech companies in high-value subsectors represent some of the most promising avenues for Bulgaria's economy. These findings demonstrate the importance of focusing resources on companies with the highest potential to scale. If more companies scale in the tech sector, it could drive economic solutions by creating more well-paying jobs, especially those that can help retain the working age population or attract Bulgarians abroad to return home. If more resources are devoted to those scaling in high-value sectors, it would accelerate

their development timelines and offer more opportunities for Bulgaria to fulfill its potential as an innovation hub.

Bulgaria now faces an urgent need to better understand the founders that are driving its economy and help more tech companies reach scale. A key step in ensuring the future of the sector is understanding the relationships that enable founders to scale and the challenges that are hindering their growth. The future of Bulgaria's economy depends on its ability to support these founders and retain the value that they create. The next sections will explore these dynamics further.



III. Network Analysis

Networks are important vehicles to transmit resources and information in a community. Network analysis helps trace the flow of people, capital, and information among entrepreneurs, their co-founders, employees, mentors, investors, and other stakeholders. To get a snapshot of Sofia's tech entrepreneurship network, Endeavor Insight interviewed more than 100 local founders and analyzed data on the connections among them.

The methodology looks at three types of relationships among founders and companies that illustrate the ways in which local founders take knowledge and other resources acquired from founding one firm and use it to help launch or grow another.

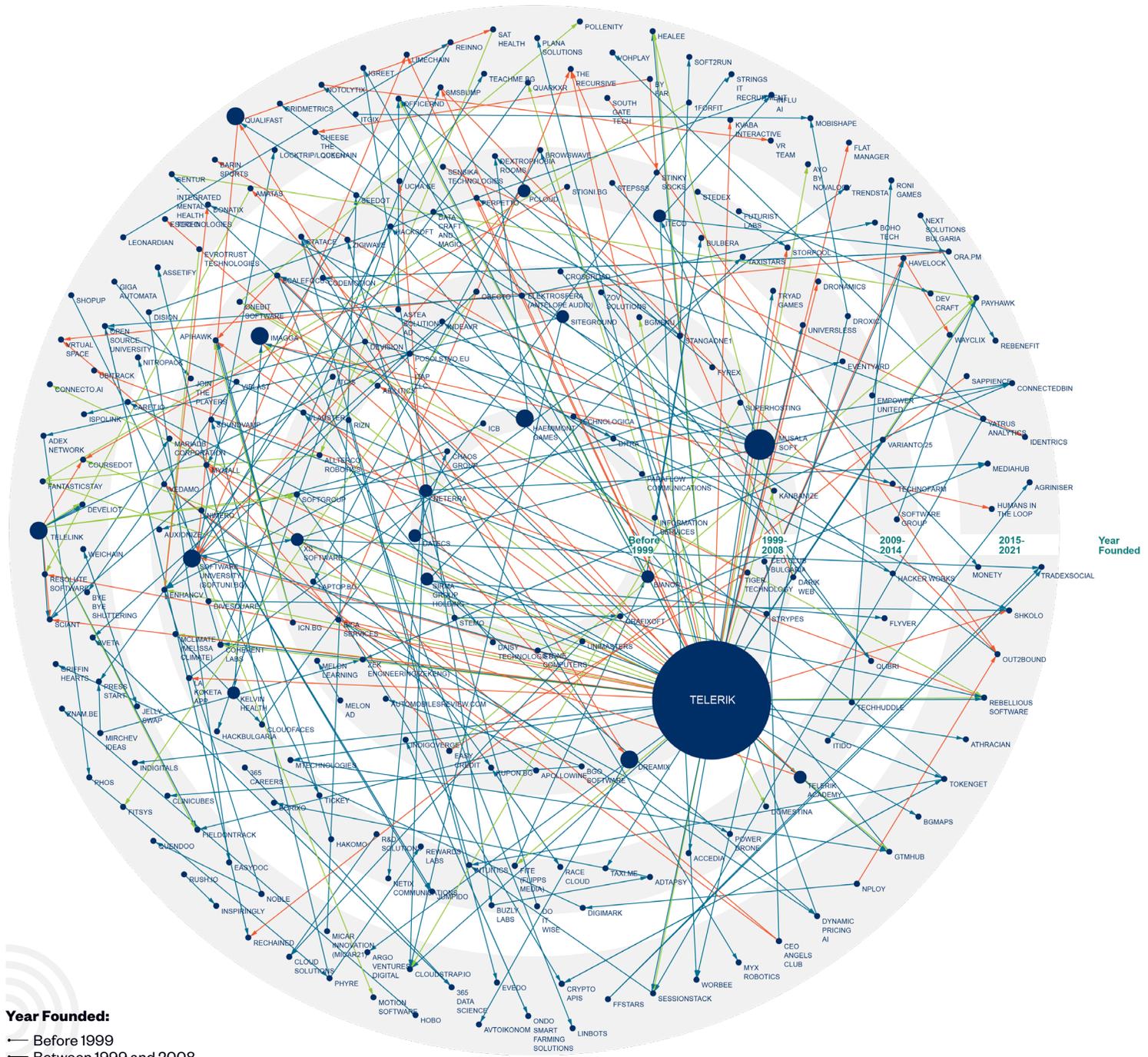
These are:

1. Former employment;
2. Mentorship; and
3. Investment.

The network map on the following page shows entrepreneurial companies and how they are connected to one another through former employment, mentorship, and investment. The size of the 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 have started multiple companies are represented by their most prominent company or organization.



NETWORK MAP OF SOFIA'S TECH COMPANIES



- Year Founded:**
- ← Before 1999
 - ← Between 1999 and 2008
 - ← Between 2009 and 2014
 - ← Between 2015 and 2021

- Connections:**
- **EXPERIENCE:** Former employment or serial entrepreneurship
 - **SUPPORT:** Mentorship or program participation
 - **INVESTMENT:** Angel or venture capital

Actors:
Entrepreneurial Companies ●

The size of a 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 or organization.

Source: Endeavor Insight founder interviews and analysis.

TWO IMPORTANT LESSONS EMERGED BY LOOKING AT THE CONNECTIONS AMONG ENTREPRENEURS.

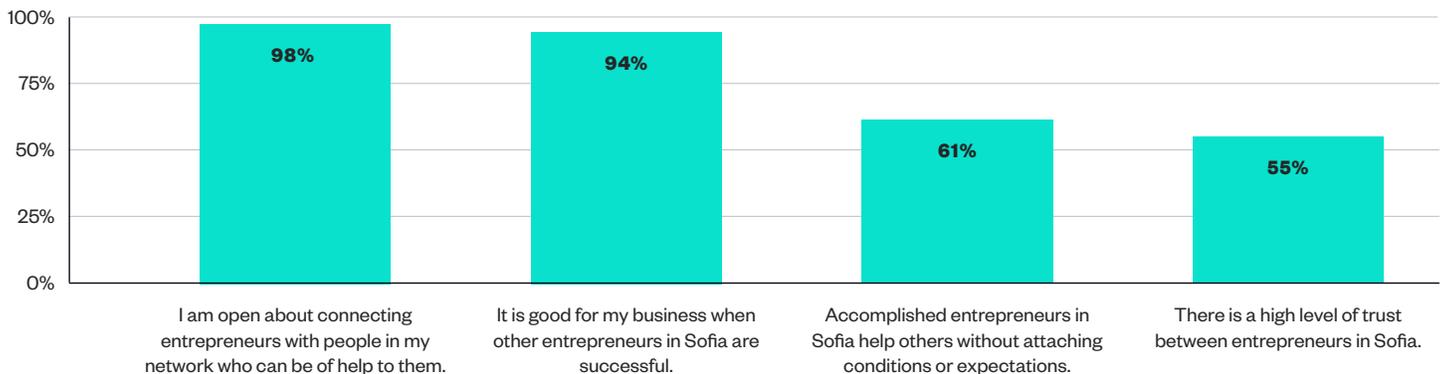
1. Founder-to-founder connectivity in Sofia's tech sector is strong.

The Sofia tech community is highly interconnected. Of an estimated 524 entrepreneurial tech companies in the sector, Endeavor Insight uncovered data showing that 142 were connected to at least one other company through former employment, mentorship, and/or angel investment. More than one-third of companies represented on the map had an employee who had previously worked at another local tech company. This level of connectivity is quite strong compared to other recent network mapping projects that Endeavor Insight has performed in cities in Turkey, Italy, and the United States.

There is also strong peer-to-peer connectivity: Tech entrepreneurs in Sofia seem to appreciate the importance of building a strong network with one another. Nearly all of the tech entrepreneurs who answered questions about their perspectives were open to connecting other entrepreneurs with people in their network and believed it was good for their business when other entrepreneurs in Sofia are successful, as illustrated on the chart. A majority of founders had positive attitudes about other factors that promote a strong network such as willingness of accomplished entrepreneurs to help others and trust.

TECH FOUNDER PERSPECTIVES ON SOFIA'S ENTREPRENEURIAL COMMUNITY

Percentage of Respondents Who Agree or Strongly Agree



Note: Data is based on the 95-97 founders who responded to each respective question.

Source: Endeavor Insight founder interviews and analysis.

One of the 109 founders that Endeavor Insight interviewed for this project summed up the broad sentiment of the entrepreneurial community, "Over the last two years there's been a lot of improvement. People like me were operating in a vacuum when we started out, we did not know there were other people who were fighting the same battles, and you had no way to know. Now you have all these connections, people are learning from their peers, there

is trust being built. The next generation of entrepreneurs know which successful entrepreneurs to connect with and learn from."

Nearly 90 percent of founders interviewed had a positive or extremely positive view of the current state of Sofia's tech entrepreneurship community, and 96 percent of respondents had a positive or extremely positive outlook on its future.

2. Certain Types of Network Connections Help Founders Scale

The network is characterized by high-quality connections. Nearly 40 percent of the local tech companies that reached the scale of 50 or more employees were connected to at least one other company through former employment, mentorship, or angel investment. Previous research by Endeavor Insight has shown that when entrepreneurs at scale are more connected to other founders, entrepreneurship communities are more productive.³⁹

Endeavor Insight further analyzed top-performing companies to see how their connections differed from companies that did not achieve significant growth. Top-performing companies are the top 20 percent with the highest compound annual growth rate in employee size.* One of the largest differences between top performers and the rest of the sample, was having a founder who previously worked

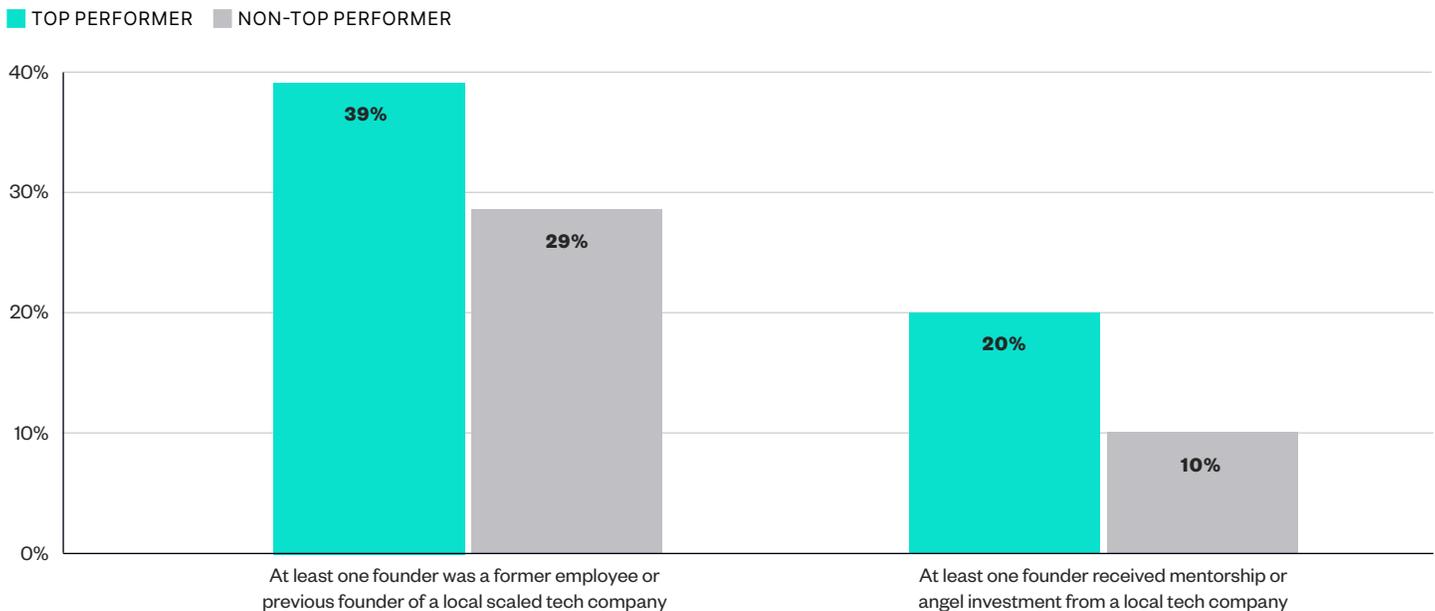
for a local tech company that had scaled to reach the size of 50 employees or more. Top-performing companies were also more likely to have received mentorship and angel investment from other local companies, as demonstrated by the chart below.

Research by Endeavor Insight suggests that previous employment at a scaling company offers founders important opportunities to learn how to navigate the challenges of building a local business. It also allows them to build important contacts that can make a meaningful difference in success when they start their own company.

Once a founder has launched their company, Endeavor Insight's research has consistently shown how mentorship and angel investment, especially from successful entrepreneurs can demonstrably improve a company's chances to be one of the fastest growing companies by number of employees. The network map in Sofia tells the same story.

TOP-PERFORMING COMPANIES ARE MORE LIKELY TO HAVE WELL-CONNECTED FOUNDERS

Percentage of Tech Companies in Sofia With Founders Who Have Received Connections



Note: Data is based on 499 companies where data was available. Top-performing companies are the top 20 percent in the sample with the highest compound annual growth rate in employee size. Local scaled tech companies refers to those in the study that have reached the size of 50 or more employees.

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

* Employee size is used as a proxy for other measures as it provides more comparable data across subsectors and geographies. It is also more readily available than other variables such as revenues or valuations.



CASE STUDY: TELERIK

Telerik was founded in Sofia, Bulgaria in 2002 by four friends who had recently graduated from university, Vassil Terziev, Boyko Iaramov, Hristo Kosev, and Svetozar Georgiev. In just 12 years they grew the business — an enterprise software company — and achieved Bulgaria's most successful software company exit. They have continued to build on their legacy by developing a thriving local entrepreneurial ecosystem which now has global aspirations.

The founders came up with the idea of starting a company after working at the Bulgarian office of a British software company. They left to found Telerik and spent the first months developing websites for clients. One of these projects led to their first product, an HTML editor for the upcoming Microsoft development platform, the .NET framework. Encouraged by the early success of this product, they pushed to grow the team and add new tools for building applications.

Telerik grew rapidly, both organically and by acquiring companies across Europe, the United States, and Canada. A focus on customer service, innovation, and speed of execution gave Telerik a reputation as a global leader in its field. With strong sales

recorded in the U.S. market, they started to attract interest from top-tier American VC funds. In 2008, **Summit Partners** invested in Telerik and also provided access to a network of experienced business leaders. Georgiev explains, "Some of the key mentors were the senior executives and board members that Summit helped us recruit. If our company did one thing right, it was institutionalizing knowledge." By 2013, Telerik had scaled to 800 employees and 15 offices worldwide. The company was sold to **Progress Software** in 2014 for \$263 million.

When the founders started Telerik, there had been little in the way of a local entrepreneurial ecosystem and this motivated them, once successful, to give back and train the next generation of entrepreneurs. They wanted to help other companies establish themselves in Bulgaria, drawing from their own experiences and applying knowledge from more developed ecosystems. They set out to build the missing pieces in the Bulgarian ecosystem, around training technical talent, community-building, and access to capital.

To facilitate the company's rapid growth, the founders expanded the local talent pool. Although Bulgaria already had a strong base of engineering talent, the company's rapid growth meant that demand for such talent was outstripping supply. So, in 2009, they founded the **Telerik Academy**, Bulgaria's first large private tech-education initiative. The academy helped the company grow by 100 to 150 people per year and also seeded the local ecosystem with technical talent, as Telerik only employed 10 to 15 percent of the academy's graduates. The rest received a boost to their IT careers, further strengthening the local sector. In 2017, Telerik Academy spun off into an independent organization to provide training across the broader Bulgarian tech sector, adding both tech and business programs.

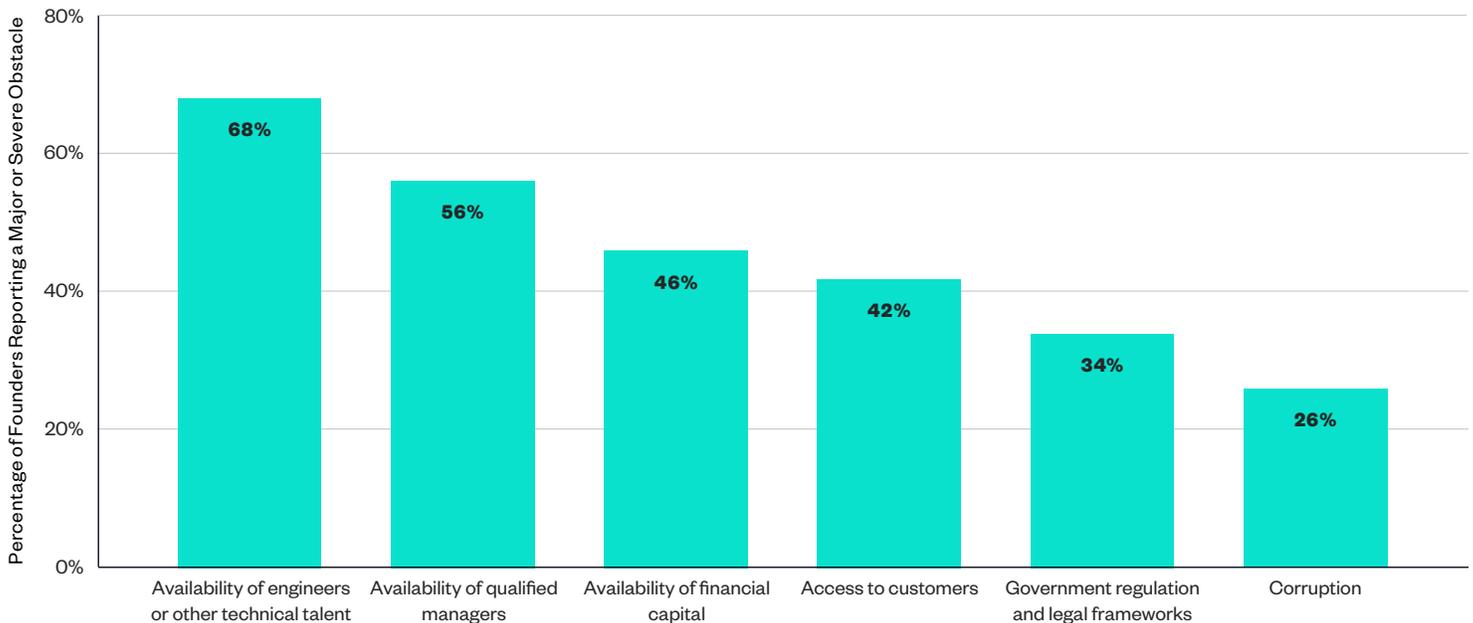


IV. Founder Challenges

In order for Sofia's tech sector to continue to mature, more companies need to be able to reach the level of success that Telerik experienced. Decision makers should work to better understand the challenges that founders face and take action to improve the conditions for scaling companies. Endeavor Insight asked founders about

their most common challenges, how serious they considered these were to operating their businesses, and whether they were able to overcome them. The findings below are based on the responses of the 109 entrepreneurs who participated in the survey.

TOP OBSTACLES REPORTED BY FOUNDERS OF TECH COMPANIES IN SOFIA



Source: Endeavor Insight founder interviews and analysis.

ACCESS TO TECHNICAL TALENT

Access to technical talent, particularly software engineers, was the most common challenge cited by interviewees.

Endeavor Insight interviews with founders revealed that 68 percent of respondents said that technical talent was a major or severe obstacle to operating their business. Given the dynamics of a fast-growing sector

— both in Bulgaria and worldwide — sharply rising demand for engineers is at the heart of the issue. One founder stated that “We are working with three recruitment agencies, we also recruit on our own and it still takes us about a year to find people. It took us nine months to hire a junior developer with no experience.”

The early months of the COVID-19 pandemic initially brought some respite, as large companies were laying off technical staff and the marketplace opened more to remote working, but after markets reopened the competition became more fierce. In interviews, founders mentioned that the shift to remote work meant increased demand for local tech talent from larger companies in more developed markets. It became even more difficult to compete with these larger companies, and was especially hard for younger startups. The supply-demand dynamic has led to a sharp rise in salaries for software developers.

Several founders noted a particular shortfall for senior tech roles, with one founder noting that “Senior talent is super hard to find or it is super expensive. In the last month alone we conducted 20 to 30 interviews trying to find senior talent. While the majority of the candidates were labeled as seniors, they weren’t qualified for senior roles.”

Interviewees noted the additional challenge of hiring tech talent if their company has particular talent needs. As one founder put it, “We are doing something in a specific niche, getting people who understand this and also have the technical experience is quite difficult. For one hire we decided to hire from across Europe, Serbia, and Bulgaria. We got 500 applications in less than a month, but still struggled to find the right person.”

Founders mentioned several solutions that they had adopted to mitigate the challenge of hiring appropriate tech talent.

These include increasing outsourced hires, freelancers, and part-time positions. A growing number are using intermediaries, such as hiring agencies, to target suitable candidates.

While it remains a challenge, there are a growing number of local initiatives offering routes to tech roles. The Telerik Academy, along with Bulgaria’s **Software University (SoftUni)** and in-house establishments such as the **Scalefocus Academy** are three such private sector initiatives that are producing a steady supply of local tech talent. They each currently train several hundred students per year, helping to provide developers and engineers for both their own businesses and the wider tech community. But with demand for talent continuing to rise both locally and abroad, private-sector bodies are calling for greater emphasis on tech education from the public sector, arguing that this could help Bulgaria not only serve its own tech community, but also position itself to become an educational hub able to export tech talent.

Some entrepreneurs see in-house training as a route forward, but it can be challenging to implement. As one founder explained, “We are still trying to find ways to deal with it. We had plans to hire 50 people and we scrapped those plans because we couldn’t find the people. We’re now trying to train people via boot camps and it takes a lot of time.”

With large established tech companies more able to meet salary demands, some smaller entrepreneurial companies are starting to look to outsource, either within Bulgaria or abroad. One founder stated, “If you are a local company with local clients, it is very difficult to hire as you are competing with Microsoft and IBM for talent. We have started to look at smaller towns, where there is a lot of skilled tech talent. Many don’t want to move to Sofia, so we try to hire them remotely if we can.”

ACCESS TO MANAGERIAL TALENT

The second main obstacle that interviewees reported was the availability of experienced and qualified managerial or leadership talent.

This was considered a major or severe obstacle by 56 percent of respondents. As a developing and fast-growing market, it is understandable that such talent is scarce. As one founder put it, “Earlier there was no managerial talent because there was no need for it. And now with more companies appearing, those skills are being developed.” But it is a slow process, and many companies are having to outsource or look abroad to bring in such talent.

The challenge is particularly severe for senior roles related to marketing, sales, product, and project management. One founder’s description of the problem is typical, saying, “It’s a huge challenge both in terms of number of positions and in terms of skill and quality. The project manager community in Bulgaria is quite young, so it is hard to find the right people. We’ve been trying to hire a chief marketing officer now for about six months, and I have no-one that can do the job in Bulgaria. I have spoken to people that are much more senior in the U.S., but they cost ten times the money.”

Some companies have managed to overcome the problem by training and promoting in-house, but this is not an ideal solution because it carries its own time-related costs.

As the founder of one company which has scaled to over 50 employees says, “For roles such as product, marketing, and sales we were competing on a global scale, and needed top tier talent to match that. Many people who were technically proficient, and who had grown with us, woke up one day and had to be managers, and some of them were not ready. So we designed internal training programs for them which took almost eight months.”

Some companies are going further than training management in-house. One, following the example of Telerik, is opening its own training center, saying, “We are looking for sales development and business development reps, but the talent pool with experience in tech companies is shallow. We are solving this problem by launching a sales academy where we will train people.”

Another solution has been to pull in experience by opening offices elsewhere. According to one founder, “This region does not offer experienced talent in marketing and sales, so we hire for these roles in other markets. This is why we have an office in the United States.”

ACCESS TO CAPITAL

Access to capital was the third greatest challenge reported by Sofia's tech entrepreneurs, with nearly half of founders reporting it as a major or severe obstacle to operating their business.

While low levels of seed funding can be secured, capital for growth stages can be a problem. As one respondent stated, "The local ecosystem is missing follow-on capital. We have very early-stage funds, some that do seed and pre-series A rounds, but the existing network of VCs is limited." As an alternative, founders mentioned angel investment and local investors such as LAUNCHub or Eleven as important enablers.

The lack of available funding, at least in the early years of the development of the local ecosystem, promoted bootstrapping among several founders, where they use personal finances and operating revenues to grow their business. Nearly 25 percent of interviewed founders had bootstrapped their companies, with one recalling that, "Getting capital for a start up in Bulgaria is challenging, since banks are not very cooperative and VCs are only willing to invest small amounts. My solution was to use my own funds for the company and make it self-sustainable."

There are now several active VCs in Sofia, but the overall funding capacity remains relatively low.

As more tech companies scale, the funding requirements have increased and the local funding community has not been able to keep up in offering larger ticket sizes, so founders are forced to look elsewhere.

Founders reported that access to VC is particularly difficult to secure. According to one founder, "Our location makes it harder to raise capital. If you are in the United States, this would not be a problem; if you're based out of London, it would be surmountable. But it's a problem for those of us in Eastern Europe, as there is a lot of scrutiny. When you grow to a certain stage, it becomes easier to attract global investors." Founders of mid-size companies mentioned that U.S. investors wanted to see the company have a presence there before investing in them. Many companies choose to start sales offices in the United States in order to be able to raise investment.

Despite this, entrepreneurs are noting improvements. According to one, "As a Bulgarian entrepreneur, trying to fundraise in Western Europe or the United States is hard, but it is easier now than it was five years ago." Another founder noted, "Now there is more venture capital funding available, but when we started in 2017 there was none and we were mainly bootstrapping, which has been a challenge in terms of allowing us to grow faster."

The main strategy to overcome the capital challenge centers on patience, first focusing on securing financing available domestically through local angel investors, incubators, and investment funds. This allows growing companies to build a reputation and develop contacts, before they look to source larger amounts of capital from international markets. These hurdles in accessing financial capital will continue to hinder the ecosystem, but many founders mentioned how efforts have been helped by BESCO.

ACCESS TO CUSTOMERS

Many founders struggled with customer acquisition, but their particular obstacles were broadly split between early-stage customer acquisition and challenges in building awareness or trust with customers.

Respondents stated that expanding abroad brought renewed challenges for reaching customers, with one founder saying, “Bulgaria does not have experienced people who have skills and experience dealing with international clients. We do not have enough outbound sales professionals, there are no major VC funds based here, and as a result startups do not get significant market connections.”

Most of the founders who experienced obstacles with customer acquisition reported that the small size of the domestic market was a limiting factor, and that it was difficult to build awareness and then trust of a new product. According to one founder, “We were doing something quite innovative and found that the first challenge was getting to potential customers. Converting these potential customers, getting them to become our customers, was more challenging. You have to drive awareness, and then you have to build credibility.”

Founders noted that focusing on marketing strategies that built a local customer base and raised brand awareness were key to overcoming this challenge. Some achieved this through attending events, which helped to increase visibility as well as allow them to network and build relevant contacts. One founder said, summing up their experience, “We approached and landed more customers, and got customer reviews. But it is a chicken and egg problem — you can’t have good customers without a good reputation, and you can’t have a good reputation without good customers. This happens slowly.”

Given the limitations of the local market, companies look abroad to foster growth.

Several founders reported that acquiring customers outside of Bulgaria was a problem. Strategies that companies adopted included opening foreign sales offices, asking for help from their international investors to reach certain markets, and running commercials in targeted geographies.

Some founders reported that geographic barriers have been reduced by the COVID-19 pandemic. Bulgaria’s high standard of language education has also helped. As one stated, “These days it’s much more acceptable to work in a virtual manner and Covid has enhanced that. One of the positive things about working here is that many people speak foreign languages, so it’s relatively easy to find people who speak excellent languages, and are thus able to do business remotely.”

One local initiative has been designed to address this challenge. In 2019, **Export Hub Bulgaria** was established by 16 public and private-sector organizations — including **The Bulgarian Small and Medium-Sized Enterprises Promotion Agency (BSMEPA)**, **Sofia Tech Park**, **BESCO**, and **SoftUni** — to help businesses access customers abroad.⁴⁰ It organizes networking events and offers a 12-week incubator program focused on business development and export potential, with the first incubator in 2021 hosting 15 companies.⁴¹

One founder mentioned support from the government through Bulgarian commercial attachés in other countries. The founder noted that some were quite proactive and they secured many connections this way, but few other interviewees mentioned assistance from trade representatives.

GOVERNMENT AND LEGAL CHALLENGES

Government regulations and the legal system presented major or severe challenges for many interviewed founders.

Founders noted a lack of government support for startups and a lack of clarity in regulation or processes, which can significantly hinder companies that are growing. Many of these challenges stem from the fact that Bulgaria's transition to democracy is still relatively recent, which has brought delays to legislation for the digital age. As one founder summarizes, "Legal frameworks are always a challenge. Bulgaria is coming from a communist legacy, we still have a lot of laws that were drafted then, and they don't cover a more dynamic and open world. Changes are taking place but very slowly. There have been breakthroughs in the last few years, but it is moving slowly."

The main issue with legislation concerns labor laws, an unsurprising concern given that attracting talent is the single greatest obstacle for companies in the local ecosystem. The labor code is described by many founders as old and in need of renewal, and there are onerous administrative barriers to hiring people from outside the EU. More flexible employment laws and simplified processes were common demands from the interviewed founders.

Many founders have hired external consultants or advisors to navigate the current legal framework, implying an additional cost for doing business locally. Ten percent of interviewed founders reported that they have moved their legal entities abroad to avoid dealing with these challenges.

E-government initiatives in Bulgaria lag those of the rest of the EU, with under 25 percent of Bulgarians using the internet to interact with public authorities in 2018, compared to an EU average of over 50 percent.⁴² The government has established some initiatives to help businesses as part of its e-government strategy, but these are limited and some still involve physical documentation. There is an online commercial register that can be used when setting up, restructuring, or liquidating a business, for which an electronic signature — attainable from another government agency — is required. Tax declarations and payments can also be submitted online, and the government has established a point of single contact (PSC) portal which allows companies to access information and electronically complete all administrative procedures to allow them to trade in Bulgaria and the EU.⁴³ Further improvements will be necessary in order to address founder concerns and not fall further behind other EU countries.

CORRUPTION

Bulgaria is considered by Transparency International to be the most corrupt country in the EU, ranking alongside Romania and Hungary as the joint 69th cleanest country globally. This places Bulgaria in a better position than its Balkan peers: Serbia, Kosovo, Albania, Bosnia and Herzegovina, and North Macedonia, as well as nearby neighbors Moldova and the Ukraine.⁴⁴ Despite this, most founders did not consider corruption to be a significant challenge to operating their business.

When asked about corruption, some founders did mention obstacles around dealing with government-related projects. The tech sector is considered to be one that is less prone to corruption. As one founder stated, “Those engaged in corruption are not skilled when it comes to the IT industry, they focus on other sectors which make better targets. Most IT companies that operate here have business outside of Bulgaria — either outsourcing or product companies — and are immune to corruption. But those who try to secure grants or look for government projects are those who have to face corruption.”

As a result of the perceived public sector corruption, many try to steer clear of public tenders, considering that there are sufficient

private sector clients. According to another founder, “We have applied for more than 20 public tenders and despite having the best price and perfect tech proposal, we have never won... I’m sure the winner has been negotiated in a different way.” Another stated simply that, “We do not work with institutions in the country, and so we have not dealt with corruption.”

There is an opportunity for change ahead given that the new government was elected on a clear anti-corruption manifesto.

The government, a four-party coalition headed by Prime Minister Kiril Petkov, was inaugurated in December 2021 after a November election. This broke months of deadlock after elections in April and June failed to produce a viable coalition. Petkov is a former entrepreneur, and he teamed up with another entrepreneur, Assen Vassilev, to found a party, We Continue the Change (known as PP locally), in September 2021. The party was formed as an anti-corruption electoral alliance that looked to serve as a uniting force for the fragmented opposition groups that had stood in April and June on similar tickets.⁴⁵



V. Support Systems

There are several actors in any entrepreneurial ecosystem that make it possible for founders to succeed. In addition to the robust founder-to-founder support in Sofia's tech sector, other local organizations are important to the development of the community.

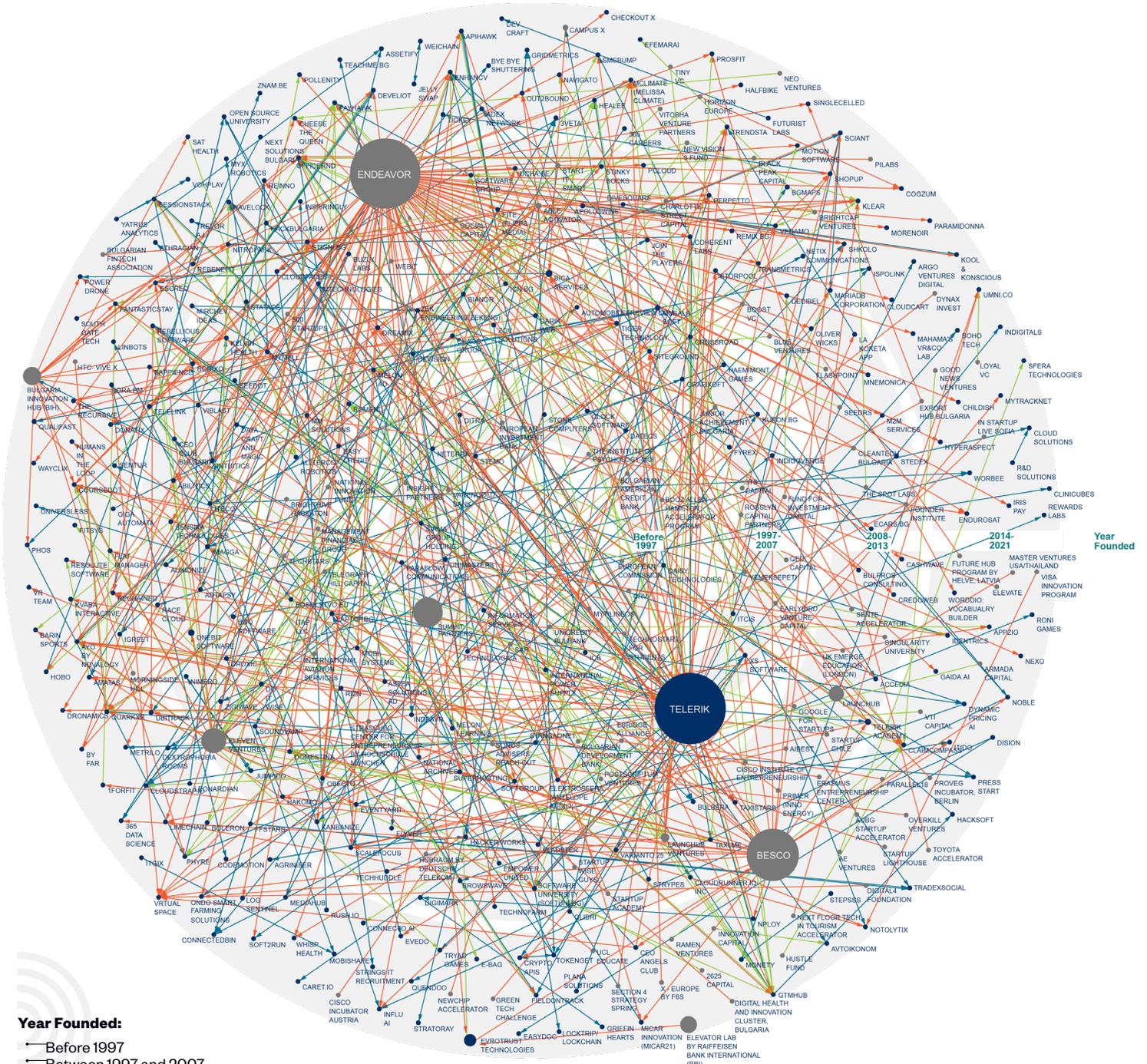
The network map on the next page shows all of the actors in the tech sector that are providing resources to local tech companies. This adds support organizations and investment firms to the previous visualization of founder-to-founder connections, to identify the fuller picture of previous employment, mentorship and other support, and investment connections. Similarly, the size of the 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. Organizations that offer multiple programs are represented only once on the map.

Based on the network map, the top five most influential support organizations and investors in the ecosystem are Endeavor, BESCO, Summit Partners, **Elevator Lab**, and Eleven Ventures. These organizations have higher relative influence on the network because they have supported the most number of tech companies (through primary connections such as mentorship, program participation, and investment), and the founders they have supported have, in turn, been supportive of many other companies (secondary and tertiary connections, which also includes employment).



NETWORK MAP OF SOFIA'S TECH SUPPORT SYSTEM



Year Founded:

- Before 1997
- Between 1997 and 2007
- Between 2008 and 2013
- Between 2014 and 2021

Connections:

- EXPERIENCE: Former employment or serial entrepreneurship
- SUPPORT: Mentorship or program participation
- INVESTMENT: Angel or venture capital

Source: Endeavor Insight founder interviews and analysis, select organization portfolios.

Actors:

- Entrepreneurial Companies
- Other Organizations (e.g., accelerators, investment firms)

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

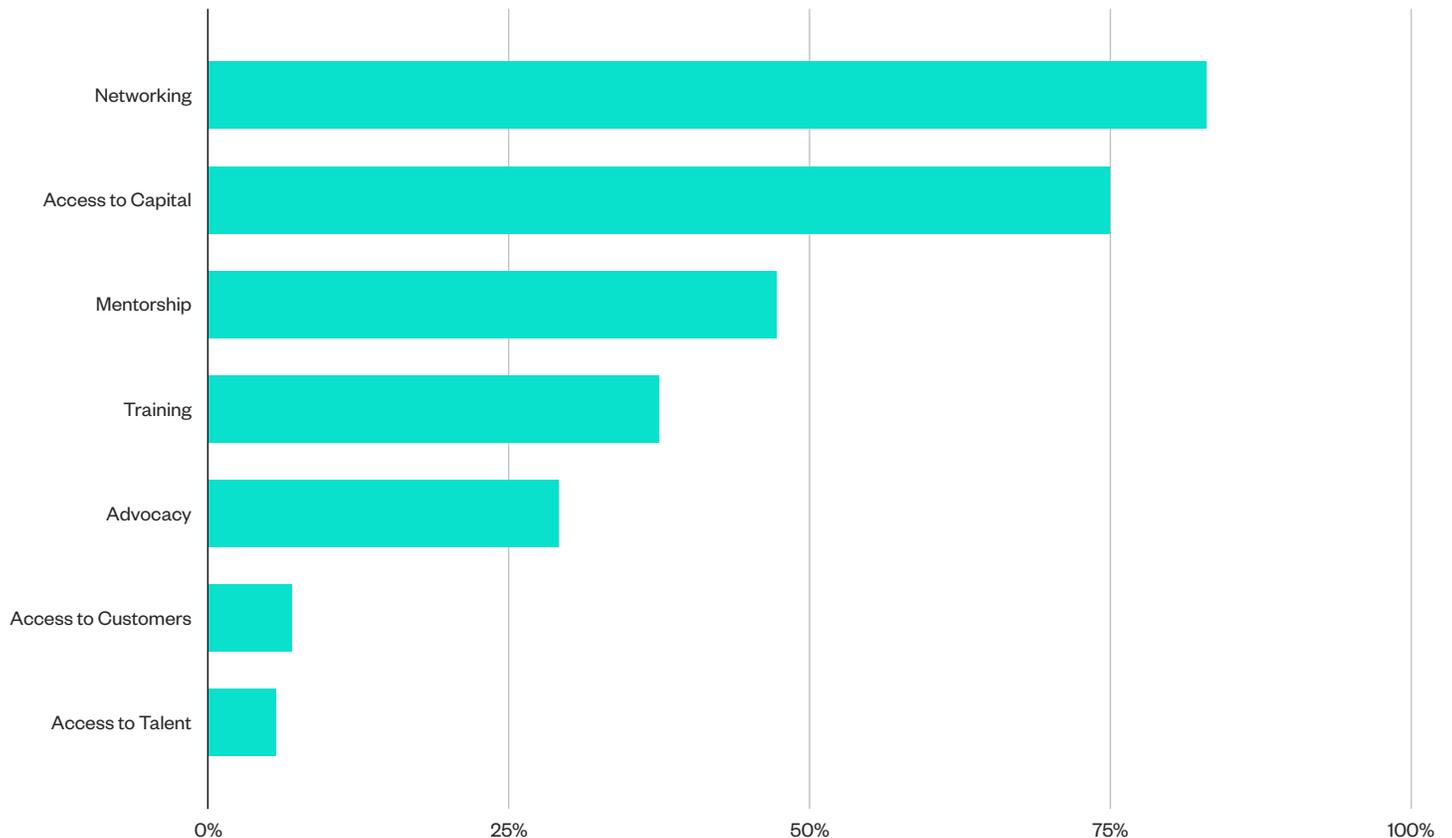
SUPPORT ORGANIZATIONS

Support programs play an important role in Sofia's tech sector, with nearly half of scaled companies having participated in an accelerator, incubator, network, or other activity.

Endeavor Insight identified more than 70 organizations that have supported local tech companies. These organizations offer a range of programs and services with networking opportunities and access to capital services being the most common, as the chart illustrates. Very few organizations offered services addressing access to customers and talent, which is one of the top four most significant challenges that founders face.

That said, when asked about the specific value these programs provide, founders reported the most benefit from programs that did address these issues. Founders mentioned that programs that could help them with customer segmentation were particularly useful, as well as those that assisted them with sourcing qualified talent. Founders also reported that being connected with potential investors, and networking that leads to meeting future board members was beneficial. In contrast, programs that are too general and not tailored towards a specific company stage were said to be repetitive and less relevant to the challenges that founders were facing.

SERVICES OFFERED BY SUPPORT ORGANIZATIONS IN SOFIA'S TECH SECTOR



Note: Based on data from 72 support organizations serving Sofia tech companies.

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

AVAILABILITY OF MENTORS

Fortunately, the availability of quality mentors or networks was not a challenge for most founders. Many interviewees said that they already had a strong network and access to mentors.

The main challenge was the perception — cited by 24 percent of respondents — that the sector was perhaps too young to have developed relevant expertise and networks. One commonly voiced concern was that, “We don’t have a lot of people that you can learn from, as there have not been that many

large companies.” The sector is seen by many as a niche area, which can provide a challenge in accessing relevant knowledge. Those that do need specialized mentorship seek experts from outside of Bulgaria.

The Telerik founders themselves were also frequently cited as having played a key role in mentoring up-and-coming entrepreneurs, and of putting in place systems by which networks could grow. This includes the Telerik Academy, which was opened in 2019, and various hubs and incubators.

COWORKING SPACES

Several founders also said that Sofia’s large number of co-working spaces and events were a great help in forming a network and exchanging ideas. Coworking spaces provide opportunities for networking and knowledge exchange, and more than 30 have been established in Bulgaria since 2012 when the first **betahaus** opened. Sofia accounts for around half of the coworking spaces in the country. Most have a focus on tech, with a few designated for cultural or other business types. They typically host startups, freelancers, agencies, and other businesses connected to the tech sector, and include conference and event spaces. Many offer access to mentors, investment funds, and legal and ancillary services.

One of Bulgaria’s most influential coworking spaces is **Campus X**, set up by the Telerik co-founders. Campus X was designed to be a full ecosystem space, hosting serviced offices for companies at all stages

of growth, as well as providing access to the Telerik Academy and the Eleven and LAUNCHub VC funds. Another is **Puzl CowOrKing**, which hosts more than 90 IT companies in a space of 8,000 m², as well as hosting networking events.

As well as having a large number of individual local coworking spaces set up near business parks and tech universities, newer initiatives such as **Networking Premium Coworking Spaces** offer a broader network of coworking space partners. It has seven locations in Bulgaria, and coworking space partners in 50 cities globally, in which members can work when traveling on business. **Entract 127** is another new coworking space which has a focus on curating internationally-minded companies, handling business travel and accommodation arrangements as part of its offering.

OTHER ENABLING ACTORS

Other ecosystem actors such as journalists and trade associations can provide an enabling environment so that the entrepreneurial network can become more productive. **The Recursive** is an independent media platform for journalism on entrepreneurs and investors in tech communities throughout Southeast Europe. It was founded in 2021 by Irina Obushtarova and Etien Yovchev. Other important outlets include **Forbes Bulgaria**, **Bloomberg TV Bulgaria**, **Economedia** and its publication **Capital**, and **Trending Topics Bulgaria**.

Several organizations are providing services that help professionalize the industry and efforts that will help make Bulgaria's tech sector more globally competitive. This includes the **Bulgarian Private Equity and Venture Capital Association (BVCA)** which seeks to act as a focal point for the investment and entrepreneurial communities in Bulgaria. Its full membership consists of 15 of Bulgaria's 17 PE and VC funds, and associate members include the

Fund of Funds, Bulgaria Innovation Club, and CEO Angels Club. It advocates for the role of private equity investment as a positive force for industry, communicating with the public, investors, businesses, and the public sector in support of its members.

BASSCOM is the industry association of leading Bulgarian software development companies. With a membership of more than 100 companies, it offers industry research, return-to-Bulgaria assistance for IT students and professionals, branding and export support, a working group on innovation, among other promotional and advocacy activities. Another important association is the **Bulgarian Employers Association Innovative Technologies (BRAIT)**, which aims to strengthen companies in high value-added industrial sectors related to innovative technologies. The organization works to improve the economic development of its members in partnership with the government and state institutions.



VI. Lessons from Western European Ecosystems

Countries across Europe actively seek to promote entrepreneurship as part of their economic agenda in order to drive growth and employment. Certain governments, especially those in Western Europe, have had considerable success in developing their entrepreneurial ecosystems. Bulgarian decision makers can learn from the experiences of those countries, which have dedicated considerable time and

resources towards public initiatives to support entrepreneurs. These policies have centered on creating an enabling environment that recognizes, incentivizes, and rewards high-potential entrepreneurs. If the Bulgarian government implements similar programs and policies, it would maximize the potential of Bulgaria's entrepreneurial ecosystem.

PUBLIC SUPPORT INITIATIVES FOR ENTREPRENEURS

Endeavor Insight reviewed more than 90 public programs and policies from six Western European countries to identify those most relevant to improving the legal environment and support infrastructure for entrepreneurs in Bulgaria. The six countries studied were France, Germany, Italy, the Netherlands, Spain, and the United Kingdom. The descriptions below highlight particular strengths of each country's public support initiatives for entrepreneurs.

France: The French government is heavily involved in promoting an active entrepreneurial ecosystem in its country, investing €1.3 billion annually in startups.⁴⁶ It established an agency called the **French Tech Mission** (La French Tech) in 2013, which has an annual budget of €5 million to help France achieve its national goal of having 25 unicorns by 2025.⁴⁷ The **French Tech Next40/120** is its flagship program, which supports late-stage tech entrepreneurs.⁴⁸ Through this program, the French government tests new policies and services with selected companies, receiving input from entrepreneurs before changing regulations. Under President Emmanuel Macron, the French Tech Mission's role has

expanded, with greater incentivization of investors to provide late-stage capital and plans to place officials from the agency into every ministry of the government in order to increase responsiveness to entrepreneurs' needs.⁴⁹ Some of France's other successful policies focus on making use of global opportunities. For example, **Business France** is a public agency founded in 2015 to advocate for the export growth of French businesses and to incentivize international investment in France. Business France organizes trade shows to provide companies with access to customers, talent, and capital in foreign markets. Another successful policy has been the **French Tech Visa** program, providing a fast-track visa process to foreign entrepreneurs, workers, and investors in tech startups.⁵⁰

Germany: With the goal of driving innovation and job creation, Germany's **Federal Ministry for Economic Affairs and Climate Action (BMWi)** leads the country's entrepreneurship programs.⁵¹ As part of its budget in 2019, BMWi allocated €132 million for research and development, €30 million for the digitization of SMEs, and a further €30 million for the promotion of

foreign trade and investment. To foster innovation, the ministry has committed to allocate €713 million for research and development up to 2022.⁵² The German government provides a variety of forms of capital to entrepreneurs through different programs, including grants, equity, and loans for growth, working capital costs, and technology upgrading. It has also set up a dedicated platform, known as the **nexxt-change** initiative, to facilitate business succession, mergers, and acquisitions.⁵³ To assist with international expansion, BMWi funds the **German Accelerator**, which offers customized programs to German companies seeking to enter American and Asian markets that assess their product-market fit and help them develop go-to-market strategies.⁵⁴

Italy: In 2012, Italy passed the **Italian Startup Act**, which included a comprehensive set of policies to spur sustainable growth and enhance innovation in the country. Some of the key aspects of this business-friendly legislation included free incorporation, greater access to public funding, support for international expansion, and fewer legal constraints to internal governance, like allowing tax benefits for stock options.⁵⁵ The primary government agency involved in supporting entrepreneurship is the **Ministry of Economic Development (MISE)**, which was founded in 2006. In 2020, MISE dedicated €200 million to the **National Innovation Fund**, a fund of funds to back innovative firms, as well as €500 million for the establishment of a technology transfer fund managed by the **Enea Tech Foundation**.⁵⁶ The Italian government also provides non-EU founders and investors with specialized visas, and it offers tax

benefits for intellectual property development through its **Patent Box** regime.⁵⁷

Netherlands: The Dutch **Ministry of Economic Affairs and Climate Policy** is responsible for fostering a thriving entrepreneurial ecosystem within the country.⁵⁸ In 2021, the ministry allocated €4.1 billion for investments in R&D, innovation, and infrastructure through its **National Growth Fund**.⁵⁹ The ministry has also included the **Netherlands Enterprise Agency** since 2014, which annually provides €60 million in loans for promising entrepreneurial projects in high-tech sectors through its **Innovation Credit** regime.⁶⁰ Furthermore, the Netherlands offers tax incentives for startups and SMEs, a special startup visa, and support for international expansion. The country has also implemented some more specialized types of support policies, such as subsidies to Dutch companies for hiring and training, as well as the bilateral Indo-Dutch **#StartupLink** for entrepreneurs seeking access to customers and investors in India.⁶¹

Spain: With the renewed goal of transforming into an “entrepreneurial nation” by 2030, Spain introduced a ten-year plan in 2021 that aims to shift the political and economic mindset to look beyond the short term. This strategy, which focuses heavily on digital innovation, includes a budget of €1.5 billion for 2021.⁶² The Spanish government also adopted a draft **Startup Law** in 2021, which introduces new tax incentives and reforms to stock options in order to attract talent to the country.⁶³ Spain’s **Ministry of Economic Affairs and Digital Transformation**, which had a budget of €9 billion in 2021, is the primary entity responsible for supporting

innovation and entrepreneurship in the country.⁶⁴ The **Ministry of Industry, Trade and Tourism** has also managed the **Invest in Spain** initiative since 2005 to attract foreign direct investment, and the country implemented special visa programs for entrepreneurs and investors in 2013.

United Kingdom: The United Kingdom has historically had an attractive environment for entrepreneurs, and in the years following its departure from the European Union, it has reasserted its commitments to them. Its **Department for Business, Energy and Industrial Strategy (BEIS)** was formed in 2016 via the merging of the business and energy ministries. Its 2021 budget contains a range of support and investment for businesses, including a £375 million breakthrough innovation fund for high-tech companies that seek to raise at least £20 million.⁶⁵ In 2021, the UK government also announced a £20 million **SME Brexit Support Fund** to offer grants to help businesses involved in importing and exporting with EU countries adapt to new regulations.⁶⁶ The UK provides a variety of other kinds of support and financing for entrepreneurs at different stages of growth. For example, it offers grants for R&D and business development, as well as export grants for larger companies. **Innovate UK**’s business competitions provide winners with government procurement opportunities. The country also has a dedicated **Global Entrepreneur Programme** for foreign founders to receive mentorship and support within the UK, which complements its **Start-Up Visa** program for foreigners who demonstrate that they have a novel and viable business idea.⁶⁷

COMPARATIVE ANALYSIS

	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
Bulgaria	No	No	No	No
France	Yes	Yes	Yes	Yes
Italy	Yes	Yes	Yes	Yes
Germany	Yes	Yes	No	No
Netherlands	Yes	Yes	Yes	No
Spain	Yes	No	Yes	Yes
United Kingdom	Yes	Yes	Yes	Yes

Sources: Endeavor Insight research and analysis, government websites.

The table above compares Bulgaria's public assistance for entrepreneurs to those of the six Western European countries highlighted in this section across four dimensions: support for innovative research and development (R&D) and intellectual property rights (IPR), support for growth and international expansion, special visa programs, and tax benefits for employee stock option plans. Endeavor Insight evaluated these dimensions on a binary scale based on its analysis of public programs and policies from available information as of January 2022. The results show that the six Western European countries perform highly on the majority of these dimensions, whereas Bulgaria's public support infrastructure is somewhat lacking.

Governments in Western Europe have played a large, positive role in advocating for their entrepreneurs abroad through bilateral agreements, trade expos, and other initiatives.

By receiving affiliation with these official programs, entrepreneurs gain visibility and opportunities to

grow their businesses. At the growth and expansion stages, companies often require more tailored support due to the wider range of their operations, which is why France dedicates a large amount of its resources to late-stage firms. Bulgarian policymakers should ensure that an adequate amount of funding, high-quality support, and regulatory structures are in place to encourage and accommodate the growth of its entrepreneurial companies.

Many European countries have faced population decline in recent years, but competitive economies like those covered in this section have incentivized innovators and entrepreneurs from abroad to move to their countries through their national visa programs and tax incentives. Given Bulgaria's population decline and net emigration rate, its policymakers should focus on retaining domestic talent and attracting skilled foreign workers. The **EU Blue Card** program that Bulgaria participates in is not sufficient for incentivizing foreign talent, as many founders reported that the academic and

income thresholds that the program requires are prohibitive. It is also difficult for Bulgarian entrepreneurs to jointly start companies with foreigners inside Bulgaria, as foreigners face bank account restrictions. Consequently, Bulgaria can follow the lead of nations like the Netherlands and the United Kingdom by bringing in foreign talent through a national startup visa, tax benefits for employee stock option plans, and other policy incentives.

The successful policies of Western European countries create an amenable environment for entrepreneurs to conduct business, help them reach global markets, and attract foreign talent.

If Bulgaria follows the lead of these mature ecosystems, it can attract foreign investors, become globally competitive, and serve as a model for other countries in Southeast Europe. By implementing programs and policies to support innovation, encourage expansion, and retain and attract skilled talent, Bulgaria will create more jobs and boost its economic standing.

FORTHCOMING POLICY REFORMS IN BULGARIA

To some extent, decision makers in Bulgaria have recognized the greater levels of public support in these Western European ecosystems and are accordingly planning to take action. Under the new structure of the government, entrepreneurship, innovation, and digitalization will be mainly supported through the newly formed **Ministry of Innovation and Growth** and the **Ministry of E-government**.

BESCO — the Bulgarian startup association that acts as a convening body for the entrepreneurial ecosystem — is working with the Bulgarian government to update outdated legislation. The three areas of focus for these reforms are access to capital, access to talent, and ease of doing business.

The planned access to capital reforms are wide ranging, but all aim at making more funding available for Bulgarian entrepreneurs. To address gaps in early-stage investment, BESCO is helping introduce an incentivization bill for angel investors. The bill institutes a certified angel license that enables access to direct government loans, a government-guaranteed fund that covers the systematic risk of commercial banks to increase their loan offerings to angels, and an educational platform to share best practices to new angels. The planned reforms also incentivize foreign direct investment by increasing the government's budgetary support for it and reducing the requirements for investors to access that support. Furthermore, policy changes will enable pension funds to invest a greater share of their assets into alternative investments such as VC funds.

They will also increase the cap on **BEAM**, which is the trading market for small and medium enterprises (SMEs) on the Bulgarian Stock Exchange, from three to eight million Euros.⁶⁸

BEAM was established in 2018 as a market to allow SMEs to raise capital with less onerous terms than companies on the regulated stock market, while allowing them some of the advantages enjoyed by publicly traded companies.⁶⁹ BEAM can be viewed as the first step for a company to become listed on the fully regulated market. There is an appetite to support companies that list on the BEAM platform, helped in part by the fact that individual investors are free from capital gains tax on profits that they make from investments in the BEAM market.

The access to talent reforms aim to lower the barriers for foreigners to work for Bulgarian companies and also enhance the entrepreneurial skills of the national population. There will be a new Bulgarian startup visa, as well as improvements to the EU Blue Card program to reduce the timeline for hiring non-EU professionals. Domestically, entrepreneurial education programs and technological transfer initiatives will be set up to upgrade skills.

On the ease of doing business front, the reforms will include the creation of a new type of legal entity, which will facilitate vesting, including employee stock options, and adding flexibility to corporate governance. The new legislation also introduces tax benefits for research and development (R&D), digital employment records, and improved insolvency procedures.

VII. Recommendations

BULGARIA HAS THE OPPORTUNITY TO BECOME MORE GLOBALLY COMPETITIVE AND SUPPORT ITS MOST PROMISING TECH ENTREPRENEURS

The tech sector in Sofia is a prime example of how early successes and founder-led activities can lead to a robust ecosystem. As this analysis reveals, the local entrepreneurship community is already benefiting from the generosity of founder-to-founder support and a plethora of other supporting services including VCs, networks and associations, training academies, and policy advocates that have enabled growth so far.

As the network continues to mature, it is crucial to focus on the fastest-growing companies that have the most potential to benefit the Bulgarian economy. Tech companies that scale to the size of 50 or more employees and those operating in high-value sectors can best contribute to establishing Bulgaria as a regional hub in Southeast Europe, addressing population decline, and driving innovation.

In order for the entrepreneurial community to flourish into the future, more tech

companies need to reach scale, and it needs to be easier for local companies to retain and reinvest the value they create. The successes of the local tech sector are apparent, but foreign investors remain wary and limited resources are being spread too thin. Many founders have opted to relocate their operations due to the constraints they have faced.

Decision makers in Sofia should now work to align their efforts around the needs of these founders and take action that lowers barriers for the most promising companies. Responsiveness from industry leaders, policymakers, and other stakeholders is crucial to becoming more globally competitive. There are several strategies that decision makers in Sofia can follow to help tech companies scale. Local leaders can use the following four practical recommendations as a guide.

1

Take action to help more tech companies reach scale and continue to grow.

Decision makers should coordinate and work quickly to address key barriers that prevent the most promising tech companies from growing. Access to talent is a crucial need, especially for innovative companies that need people with specialized skills. While the proposed visa policies are one step forward, a more comprehensive solution is needed that would give founders more flexibility in identifying and recruiting the staff they need to grow their companies.

A more comprehensive approach to addressing this challenge should include a range of programs and services. This could include homecoming campaigns to incentivize Bulgarian diaspora to return, better alignment among public university programs in creating a pipeline of entry level talent, increased resources for companies offering in-house training and managerial development programs, and technical assistance with talent search and retention strategies.

Decision makers should also increase support for later stage companies with tailored services that can increase their economic impact.

There are already a number of support organizations offering growth-stage support for activities such as international expansion and securing foreign VC. More resources should be devoted to these programs, as they have the most potential to effect larger positive change in the ecosystem. Endeavor Insight has found that entrepreneurship communities often place too much emphasis on serving a large quantity of early-stage companies, when in fact it is the small number of growth-stage companies that can create the vast majority of high paying jobs, produce noteworthy results that can attract further foreign investment, and reinvest in the next generation of successful founders.

2

Increase support for founder-led ecosystem development.

Decision makers should encourage successful entrepreneurs to contribute to the local ecosystem through mentorship and angel investment. Telerik's story has demonstrated that a successful company that invests in the next generation of entrepreneurs in such ways can be a catalyst for the development of a self-propelling local ecosystem. The founders of Telerik were the biggest investors in Eleven and LAUNCHub, helping to lay the foundations for local hubs and VC funds. Their contribution as angels was immense, investing in more than 70 local startups. This has been effective, and the more successful entrepreneurs that can be encouraged to invest in such ways, as well as via mentorship, the faster the local tech community will grow.

This validates previous research by Endeavor Insight, which found that companies are two-to-three times more likely to scale if they are connected to other experienced entrepreneurs through mentorship, investment, or prior employment.⁷⁰

Decision makers should also invite successful founders to participate in other capacities, such as contributing to support organization program design, sitting on advisory boards, making investment decisions, or advising on legislation.* This is important because those founders have firsthand entrepreneurial experience and understand the challenges that new founders face.

* Endeavor Insight's guide on "Self-Propelling Ecosystem Development" has more information on these activities. Go to endeavor.org/self-propelling-ecosystems for more information.

Interviews conducted by Endeavor Insight for this and other reports, have highlighted the importance of knowledge exchange between and among successful and up-and-coming founders. Several initiatives to encourage such knowledge transfer already exist in Sofia, thanks to the development in recent years of hubs, co-working spaces, tech academies, and formal entrepreneurship networks. These create the opportunity for founder-to-founder communication to flourish, and more spaces and events that can support networking and mentorship opportunities.

The local entrepreneurial tech community has expanded at such a rate in recent years that many high-potential companies have not yet tapped into such networking opportunities. Decision makers — advised or led by successful entrepreneurs — should facilitate opportunities for high-potential companies to access networking spaces and events, to further encourage founder-led economic development.

3

Put in place legal frameworks and policies that enable local entrepreneurship and innovation.

Decision makers should work to update policies that put it on par with other countries that offer an enabling environment to entrepreneurs. Policies should address key areas of concern, including legal frameworks that help retain jobs and value in Bulgaria and enable companies to grow with resources they need. In addition to the visa programs and employee stock option reforms mentioned above, changes could include frameworks for ownership that allow employees to build wealth in the event of a company exit. Such ownership plans often spur the local growth of spinout companies, angel investment, and local VC firms.

Initiatives that support R&D and IPR would help those high-value companies working on innovative solutions and better position Bulgaria to leverage its technological advancements in ways that could benefit the economy. Innovative companies often need additional resources such as lab or special facilities, prototyping time, and specialized mentorship or collaborations with research universities. Recent

Endeavor Insight research on innovative entrepreneurship communities calls for more tailored support and patient capital due to these companies' particular needs.⁷¹

Policy-level changes can also help assure foreign investors and make it easier for local companies to do business internationally. Listening to successful founders and coordinating with existing entrepreneurship networks that are knowledgeable on the most common issues are crucial steps in developing future policy. Additionally, decision makers should improve data collection efforts to monitor the growth and diversification of the industry. Policymakers can look to the comparative analysis of other Western European countries in this study for examples of programs and policies that could be most relevant to Bulgaria's growing entrepreneurial ecosystem.

4

Coordinate regionally to establish Southeast Europe's global competitiveness.

As Bulgaria's tech sector continues to evolve, it can serve as a model for other countries in the region. It is already positioned to share learning from growing a robust, founder-led ecosystem, as well as disseminating practices from support organizations that are offering services to growth-stage companies, as these programs are more prevalent in Bulgaria than in neighboring countries.

The next step for becoming an anchor for tech entrepreneurship in Southeast Europe would be to conduct research throughout the region to identify the relative strengths of each entrepreneurial ecosystem. This would illuminate the opportunities for further collaboration or expose gaps that the region as a whole could address together.*

Another area for coordinated action is showcasing successes across Southeast Europe in order to build awareness and positive perceptions of the region. Too often stories of successful entrepreneurial activity go unnoticed or untold. Decision makers in Sofia should increase support for such a communications strategy. This could include further coordination among support organizations, trade associations, and major media outlets to identify and disseminate content, as well as engagement activities with potential foreign investors and international networks.

* Endeavor Insight's research methodology on competitive advantages in entrepreneurship identifies comparative strengths among different cities and outlined agendas for regional coordination. See endeavor.org/ma-cae for more information.

Bootstrapping: Founding and building a company without external investment, relying instead on personal capital and the company's operating revenues.

Entrepreneurial companies: For-profit businesses that are started by individuals. This excludes businesses that began as government entities or subsidiaries of larger companies.

High-value companies: Companies that provide industry-specific products and services in subsectors such as fintech, healthtech, adtech to international customers; or that utilize sophisticated technologies such as blockchain, AI, machine learning that can differentiate them from global competition.

Investment types:

Angel investment: An investment in a company made by an individual, not on behalf of a business or investment firm.

Institutional investment: An investment made by a company or organization.

Venture capital: Investment in businesses that have high growth potential. Venture capitalists (VCs) often provide expertise in finance and operations, in addition to capital.

Mentorship: A relationship through which a mentee will meet a mentor; in this study, defined as meeting at least three times for a minimum of 30 minutes to discuss critical business issues.

Network: A group of actors working to support local entrepreneurs. This includes capital providers such as investors and foundations, support organizations, government and international aid agencies, and experienced entrepreneurs.

Scale: A measure of a company's growth; in this study, defined as employing 50 or more people.

Support organizations: Organizations offering skill-development programs, investment, mentoring, or other support for entrepreneurs. These include incubators, accelerators, and other programs.

Top-performing companies: Top-performing companies are the top 20 percent of companies, included in the sample for this research, with the highest compound annual growth rate in employee size.



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Methodology

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 Sofia, Bulgaria, or b) currently headquartered in Sofia, Bulgaria after they were founded elsewhere. Target companies also included businesses that have closed after being founded or headquartered in the area, or those that have been acquired after being founded or headquartered in the city. In select cases, exceptions were made when the official headquarters of the company was outside Bulgaria for legal and other reasons, but the majority of operations are based out of Sofia, Bulgaria.

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, etc.), 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 whom 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 platforms, such as print newspapers and brick-and-mortar retail stores, and companies for whom the creation of electronic hardware is a secondary activity, such as car manufacturers.

3. The company is entrepreneurial.

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

Data Collection:

The data collected for this project comes primarily from surveys and interviews with local 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 a 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. It 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 city. Only target companies moved forward 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 and surveys 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 Analyses:

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

1. Investment;
2. Mentorship and other types of support; and
3. Former employee spinoffs.

To learn about these connections within entrepreneurship communities, the interviews focused on four core questions:

1. Who invested in your company? (This includes both angel and institutional investors.)
2. Who was your mentor during the growth and development of your company?
3. What support organizations have you participated in?
4. Which of your former employees have gone on to found tech companies in your city?

LinkedIn provided data for the analysis of founder work and education histories. Additional information on support organization participation was collected from local organizations. This combined primary and secondary data formed an edge list of connections among organizations, along with a corresponding set of three types of outbound connections. The edge list then informed all subsequent network analyses and created the network map visualizations.

For all network analyses, each founder was assigned to only one company or organization. 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. This was based on an index of founding date, number of employees, total investment, and exit sizes. Where an entrepreneur had founded an investment firm or support organization, it was the company entity that took precedence (if they founded one), followed by the founder's investment firm,

followed by the accelerator or support organization.

The size of an organization's influence in the network was based on directed closeness centrality for unconnected graphs. In other words, the size of an organization was a function of the number of first-, second-, third-, etc. degree connections that the organization 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 an organization's centrality. On the Network Map of Sofia's Tech Companies, mid-sized circles were slightly enlarged to maximize the visibility of distinctions between the organizations' relative influence. On the Network Map of Sofia's Tech Support System, circles for support organizations including BIH, Eleven, Endeavor, Evrotrust, Export Hub Bulgaria, and LAUNCHub were slightly enlarged or shrunk based on additional data and to maximize the visibility of distinctions between the organizations' relative influence.

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 were 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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