

THE GLOBAL TECH ECOSYSTEM INDEX 2025: INSIGHTS AND POLICY LESSONS FOR ROMANIA

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ABSTRACT: *The Dealroom Global Tech Ecosystem Index launched in May 2025 provides a fresh data-driven analysis of 288 startup ecosystems across 69 countries. This study examines the Index's three complementary lenses: Global Champions (scale), Density Leaders (per capita output), and Rising Stars (growth trajectory), to draw policy-relevant insights. We find that while a handful of "Global Champion" hubs dominate in absolute venture capital and enterprise value, many smaller "Density Leader" ecosystems outperform on a per capita basis, and several emerging "Rising Star" ecosystems are scaling up rapidly from a low base. Romania does not yet rank among the top performers in these categories, reflecting persistent gaps in startup density and growth. Guided by international evidence and the Index's findings, we propose targeted policy measures to help Romania develop an internationally competitive tech hub. Policy recommendations include overhauling entrepreneurial and tech education (toward practical, market-driven training), mobilizing domestic capital for innovation (unlocking pension fund investments and incentivizing venture funds), and legal reforms to foster startup investment (enhancing angel incentives, employee stock ownership, and easing regulatory burdens). These measures, grounded in global best practices, aim to accelerate Romania's startup ecosystem development.*

Keywords: *Startup ecosystems; Innovation policy; Venture capital; Romania;*

JEL Codes: *L26; O31; O38; R11*

1. INTRODUCTION

In recent years, technology startup ecosystems have become key engines of innovation, job creation, and regional economic growth. Successful examples like Silicon Valley, New York, and London illustrate how vibrant clusters of startups, venture capital, talent, and supportive institutions can shape global tech trends. However, such entrepreneurial ecosystems are complex and varying widely across regions. Policymakers worldwide, including Romanians, are eager to cultivate their own "Silicon Valley" style hubs, yet must tailor strategies to local strengths and gaps. The Dealroom Global Tech Ecosystem Index 2025 (Dealroom.com, 2025) responds to this need by benchmarking 288 cities' startup ecosystems on multiple dimensions. It offers a data-driven lens to understand which ecosystems lead in absolute scale, which punch above their weight per capita, and which are rising most rapidly.

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This paper leverages the Dealroom 2025 Index as a global dataset to derive insights for Romania's quest to become a competitive tech hub. Romania's startup ecosystem, centered on Bucharest and a few regional cities, has shown nascent progress but trails leading peers. For instance, according to Global Entrepreneurship Monitor data, Romania's entrepreneurship rates remain below international averages. Only one Romanian-founded startup (UiPath) has reached unicorn status to date, and it scaled primarily after relocating abroad. By contrast, smaller European countries like Lithuania and Estonia have produced multiple tech unicorns in recent years, reflecting denser startup activity. Moreover, Romania faces well-documented ecosystem challenges, including talent migration, scarce growth-stage capital, and burdensome bureaucracy, that hinder startup scaling. These issues underscore the importance of learning from global best practices.

The purpose of this study is to analyze global tech ecosystem patterns and extract policy lessons to accelerate Romania's ecosystem development. We first review relevant literature, then describe the Dealroom 2025 Index methodology and present key results across the three lenses: Global Champions (scale), Density Leaders (per capita), and Rising Stars (growth). In the Discussion, we interpret what these findings imply, highlighting how scale and density often coincide, and how emerging ecosystems can shift to rapid growth. Finally, we add Romania-focused policy recommendations informed by both the data and global case studies. Our hope is that by contextualizing Romania's situation within global trends, this analysis offers actionable insights for Romanian policymakers aiming to foster an internationally competitive tech hub.

2. LITERATURE REVIEW

Startup Ecosystems and Regional Innovation: The concept of entrepreneurial ecosystems emphasizes the interconnected nature of factors that support high-growth entrepreneurship: talented human capital, availability of risk financing, R&D and knowledge institutions, mentorship networks, culture tolerating risk, and enabling policy environment. Research traces the roots of vibrant tech clusters to agglomeration economies and knowledge spillovers (Brown & Mason, 2017). Dense concentrations of skilled labor and firms produce network effects and "alumni" entrepreneurs who fuel new ventures.

Measuring Ecosystem Success - Scale vs. Density vs. Growth: Traditional rankings often focus on absolute size indicators, venture capital totals, number of startups/unicorns, or aggregate startup valuations, to identify leading hubs (Whitlock, 2023)

Key Drivers of Thriving Tech Ecosystems: Prior studies highlight several common ingredients. Human capital and education are foundational, regions with strong technical universities and STEM education pipelines tend to produce more entrepreneurs and innovation (Audretsch & Lehmann, 2005).

A comparative study of venture funding determinants across countries found deeper capital markets (including institutional investors like pension funds) and supportive tax policies strongly correlate with higher VC activity (Baygan & Freudenberg, 2000). Additionally, angel investors play a key early role; research suggests that tax incentives (such as the UK's Enterprise Investment Scheme) can stimulate angel investment and thus more startup formation (Mason & Harrison, 2002).

Regulatory environment and culture: Cultural attitudes toward entrepreneurship, acceptance of risk, tolerance of failure, celebration of success, also contribute (Hofstede, 2004). In Europe, recent analyses have pointed to rigid regulations and taxation around stock options as a competitive disadvantage vis-à-vis the U.S.

2. METHODOLOGY

Dealroom.co, a global startup data provider, developed the 2025 Index to rank cities' startup ecosystems using a multidimensional approach. The Index covers 288 cities across 69 countries, selected through clear inclusion criteria: primarily, cities with at least one “unicorn” (startups valued \geq \$1B), yielding 208 cities, plus an additional 80 high-potential cities with over \$100M in funding and 50+ VC deals since 2019. This ensured inclusion of both established and up-and-coming tech hubs worldwide. Each “city” is defined broadly as a metropolitan hub (including suburbs and nearby towns) to capture functional ecosystems rather than narrow municipal boundaries.

The Index evaluates ecosystems through three distinct lenses, each corresponding to a composite indicator (on a 500-point scale) built from relevant metrics (Table 1):

Table 1. Top 5 Cities in Each Lens of the Dealroom Global Tech Ecosystem Index 2025

Rank	Global Champions (Scale)	Density Leaders (Per Capita)	Rising Stars (Growth)
1	Bay Area (San Francisco) – US	Bay Area (San Francisco) – US	Lagos – Nigeria
2	New York City – US	Boston – US	Istanbul – Turkey
3	Boston – US	New York City – US	Pune – India
4	Paris – France	Cambridge – UK	Belo Horizonte – Brazil
5	Austin – US	Munich – Germany	Mumbai – India

Sources: Dealroom Global Tech Ecosystem Index 2025. Global Champions measures VC, unicorns, etc. in absolute terms; Density is per capita; Rising Stars is by growth rates.

The Global Champions are the largest ecosystems by absolute scale; Density Leaders are the highest output per capita ecosystems; Rising Stars are the fastest-growing ecosystems.

- A. Global Champions (Scale Lens):** ranks ecosystems by absolute scale of activity, including total venture capital investment (broken down by stage: startup/early \$1–15M rounds, “breakout” \$15–100M rounds, and scale-up \$100M+ rounds, for years 2021–24), total combined enterprise value (EV) of local startups (as of 2024), the number of unicorn startups and \$1B+ exits, and innovation assets like research university linkages and patent output.
- B. Density Leaders (Per Capita Lens):** uses a similar set of indicators but normalized by population, effectively measuring innovation output per capita. Venture investment, startup valuations, unicorn counts, university talent linkage, and patents are assessed on a per capita or per GDP basis.
- C. Rising Stars (Growth Lens):** ranks ecosystems by growth trajectory and dynamism, adjusted for economic context. Key indicators include growth in startup enterprise value from 2017 to 2024, the rate of new unicorn creation (comparing 2017–20 vs 2021–24 periods), and unique to this lens, adjustments for local economic conditions.

Each lens is computed via a weighted scoring of percentile ranks for its metrics, ensuring a balanced contribution of factors (roughly 50% weight to capital investment metrics, 25–30% to value creation/unicorn metrics, and the remainder to talent/patent and economic adjustment metrics in their respective lenses). We complement this with external data (academic studies, industry reports) for interpretation and to formulate policy suggestions.

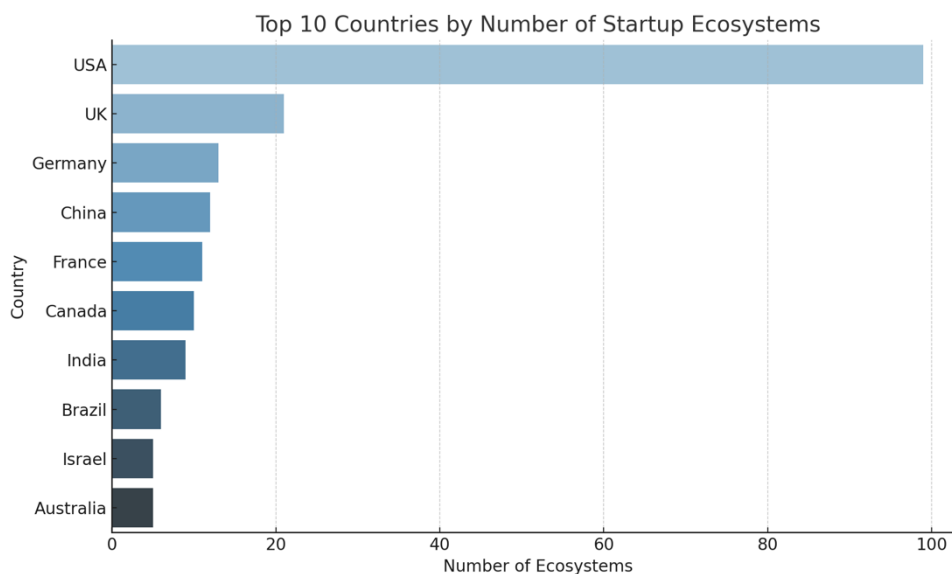
Data Analysis Approach: We dissect the Index results in three steps, we examine the Global Champions, we analyze Density Leaders to see which ecosystems outperform relative to population, and inspect the Rising Stars list of fastest-growing ecosystems, focusing on the mix of countries/regions it features and what that signals. We use simple statistical comparisons to illustrate insights, and we preserve important quantitative findings from the Dealroom report as cited evidence.

3. RESULTS

The 2025 Dealroom Index underscores the global startup activity while also revealing its concentration in certain countries. In total, 69 countries host the 288 qualified startup cities. However, some nations dominate: the United States alone accounts for 99 of the ranked ecosystems, over one-third of the global total. Other top countries by count include the United Kingdom (21 cities), Germany (13), China (12), France (11), and Canada (10).

Figure 1 illustrates the top ten countries by number of startup hubs in the Index. This distribution highlights the outsized presence of the U.S., as well as the strong representation of major European and Asian economies, while many smaller nations have 1–4 cities featured.

Figure 1. Top 10 countries by number of startup ecosystem cities in Dealroom’s Global Tech Ecosystem Index 2025



The United States far leads with 99 cities, reflecting its broad innovation geography. The UK, Germany, and China follow at a distant second tier. Many countries (not shown) have 1–4 qualifying cities each. Another notable aspect is the diverse stage of ecosystem development: 30 cities worldwide host 20 or more unicorns, whereas the majority (210 cities) have 0–5 unicorns (often newer ecosystems). This indicates a long “tail” of emerging hubs beyond the elite top tier.

Global Champions - The World’s Largest Tech Hubs

Unsurprisingly, the Global Champions lens confirms that a few superstar cities stand at the summit of the tech world, with the Bay Area (San Francisco/Silicon Valley) ranked #1 by a wide margin. Table 1 (left column) lists the top 5 Global Champion ecosystems. The Bay

Area, encompassing San Francisco and the broader Silicon Valley, remains the “undisputed champion” in 2025. Its lead is driven by unparalleled venture capital investment, a massive concentration of unicorn startups, and trillions in enterprise value created by local companies (e.g. Apple, Google, Meta, and countless startups). New York City is ranked #2 globally, establishing itself as the second-largest tech ecosystem with a broad-based economy spanning finance, media, and tech. Notably, New York’s startup ecosystem is valued around \$1.3 trillion in enterprise value, making it the largest outside Silicon Valley. Boston (#3) follows, powered by its biotech and deep tech strengths and world-class universities (MIT, Harvard) feeding innovation.

Paris (#4) emerges as the top-ranked European hub on the Global Champions index, reflecting France’s concerted efforts in the past decade to boost its tech scene (“La French Tech”). London, often considered Europe’s tech capital, is slightly lower at #6. Austin, Texas appears at a remarkable #5 globally, exemplifying a “newer hub” that has quickly built a substantial ecosystem. Other cities in the top 10 include Seoul (#7), a leading Asian hub with strengths in electronics and IT, Los Angeles (#9), known for media-tech and biotech, and San Diego (#8) with life sciences. Tel Aviv (#10) ties as well, illustrating its outsized innovation economy.

Notably, the top 20 Global Champions span North America, Europe, and Asia (Table 1). China’s biggest ecosystems Shanghai (#13) and Beijing (#18) appear in the top 20, though lower than perhaps expected, suggesting that in 2024 their growth was modest compared to Western peers. Stockholm (#15) is noteworthy as a mid-sized city making the global top 15, a testament to Sweden’s prolific startup output (with unicorns like Spotify, Klarna) and strong per capita innovation.

Density Leaders (Per Capita Lens) - Ecosystem Productivity per Capita

The Density Leaders ranking yields a different but overlapping set of star performers. This lens elevates smaller, innovation-dense locales that might be overshadowed in absolute terms by megacities. Strikingly, the Bay Area ranks #1 here as well, despite a population of ~7.7 million, its output is so extraordinarily high that on a per capita basis it still leads the world. Boston is #2 in Density, reflecting the cluster’s high concentration of research institutions and startups in a moderate-sized metro (~5 million). New York City appears at #3, even with 20 million residents, NYC’s huge tech output gives it a high per capita rank.

Where the Density Leaders list becomes most interesting is in highlighting smaller university-centric ecosystems. Cambridge (United Kingdom) ranks #4 in the world on this per capita lens. Home to Cambridge University and a deep life-sciences and AI startup scene, Cambridge has only ~280,000 people but an exceptionally high number of startups and innovation outputs per resident. Similarly, Munich (#5) and Oxford (#7) make the top ten. Munich’s strong tech economy (especially in mobility, enterprise software, and its two elite universities) and Oxford’s biotech cluster each produce high innovation density. Stockholm (#10) appears again here, reaffirming that Sweden’s capital combines significant output with only ~2 million population.

Other notable Density Leaders (rank 11–20) include London (#11), Europe’s largest city still scores well per capita, though behind its smaller UK peers, Copenhagen (#15) and Amsterdam (#16), two relatively small capital cities with vibrant startup scenes and Zurich (#18). Ghent presence at #19 draws attention, a smaller Belgian city, it has fostered a robust startup community around its university, exemplifying how even off-the-radar locations can excel in density.

For Romania, this is an encouraging insight: it suggests that even without a huge metropolis, a city like Cluj-Napoca (with its universities and IT sector) could aspire to become

a high-density innovation hub if nurtured properly. However, currently no Romanian city appears among the top density ranks, indicating room for improvement in output relative to population.

Rising Stars (Growth Lens) - The Fastest Growing Ecosystems

The Rising Stars lens shines a spotlight on the ecosystems that have experienced the most rapid growth in recent years. Here, a very different set of cities tops the list, often from emerging markets. Lagos, Nigeria is ranked #1 among Rising Stars, a remarkable achievement for an African tech hub. Lagos has produced 5 unicorns (startups like Interswitch, Flutterwave, Andela, etc.) and grown its total startup ecosystem valuation 11.6× from 2017 to 2024.

Istanbul, Turkey is ranked #2. Turkey's ecosystem saw a flurry of unicorns and exits in 2021–2022 (e.g. gaming company Peak Games, e-commerce Trendyol, delivery app Getir), resulting in rapid valuation growth. Pune, India (#3) and Mumbai, India (#5) are two Indian cities in the top five. Pune, a secondary city known for IT and education, saw fast growth. Mumbai, India's financial capital, has seen its startup ecosystem (especially in fintech) expand significantly post-2017. Belo Horizonte, Brazil (#4) is another Rising Star top-five, reflecting strong growth in Brazil beyond São Paulo.

The list underlines that high growth is occurring “in a wide range of ecosystems from emerging markets such as Africa, India, Türkiye and Brazil”. It also suggests that once an ecosystem reaches a critical momentum, often via a few breakthrough successes or influx of capital, it can scale very quickly.

Crucially, Romania is absent from the Rising Stars top cohort. Despite being an emerging EU economy, no Romanian city made the top 20 for growth. In contrast, peers in the CEE region like Vilnius and Zagreb are highlighted. This implies that Romania's ecosystem growth, while positive, has not matched the pace of the fastest movers. For example, Lithuania (population under 3 million) produced multiple unicorns (Vinted, Nord Security) in recent years, accelerating its ecosystem. Croatia saw companies like Infobip reach unicorn status. Romania's relative underperformance on this growth metric may be due to fewer major startup exits and slower capital accumulation in the period measured. This gap sets the stage for examining what Romania can learn from others' success.

4. DISCUSSION

The dominance of a few mega-hubs (but with nuance): The Global Champions list is topped by the expected heavyweights: Silicon Valley, New York, Boston, etc. These places have decades-long track records, deep capital pools, and dense networks of talent. Paris overtaking London indicates that policy and concerted effort (e.g. French tech visas, state-supported VC funds) can boost a city's standing, not just historical advantage. For Romania, their examples reveal what a fully developed ecosystem entails (strong universities, ample venture funding, big exits, supportive policy), which Romanian cities can gradually cultivate.

Small cities can have big impact: Cambridge UK will never match the absolute New York or Beijing, but they generate outsized innovation relative to their size. This is encouraging for countries like Romania with mid-sized cities, it's possible to achieve world-class innovation density by leveraging local strengths (e.g. a major research university or institution and related research parks). Romania's universities (such as the Politehnica University of Bucharest, or Cluj's Technical University) could be creating high-density innovation zones if supported to spin out startups and collaborate with industry, and creating a startup campus or innovation park.

Rapid growth is geographically diverse and policy-influenced. The Rising Stars list is arguably the most novel output of the Index, spotlighting geographies often overlooked in tech discussions. Many of these rising ecosystems benefited from large domestic markets (Nigeria, Turkey, India), but policy also play a role. For example, Nigeria’s fintech boom was aided by increasing mobile penetration and supportive Central Bank regulations for payment startups; Turkey’s gaming sector benefited from governmental tech investment and a young, digital population; Lithuania’s rise can be partly attributed to business-friendly reforms and targeted incentives that attracted startups (e.g., a startup visa, sandbox regulations for fintech). This suggests that smart policy can accelerate an ecosystem’s trajectory, a relevant lesson for Romania. The absence of Romanian cities among current top Rising Stars reflects missed opportunities in recent years to capitalize on global tech growth trends.

Gaps and opportunities for Romania: When comparing Romania to the global findings, a few gaps are evident. Romania has strong technical talent (it consistently ranks high in programming skills globally) and some successful companies (e.g. UiPath, Elrond). Yet, it lacks the density of startups seen in smaller countries like Israel or Finland, and it has not yet achieved the growth momentum of peers like Poland or Lithuania in producing multiple high-value startups. The reasons align with what the literature and data suggest: education pipeline issues, insufficient local capital, and regulatory hurdles. The data from Vestbee Report (Groszkowska, 2024) notes “issues with the tax system, permits, labor regulations, and administrative complexities” impeding startups in Romania.

5. ROMANIA-FOCUSED POLICY RECOMMENDATIONS

To transform Romania’s tech ecosystem into an internationally competitive hub, a coordinated strategy is required. We propose the following policy recommendations for Romania:

- Reform Entrepreneurial and Tech Education for a New Generation. A critical foundation is human capital, Romania must produce more entrepreneurs and tech talent ready to build startups. We recommend to integrate practical entrepreneurship and coding/tech programs at all education levels, and promote alternative training pathways. This means introducing entrepreneurship modules, innovation labs, and startup internships at universities (and even in secondary schools) to give young people hands-on experience. Additionally, support the growth of accelerators, incubators, and online bootcamps that provide intensive, market-driven training. For example, Romania could support local programs (e.g. Venture Accel or Innovation Labs) with government grants. By updating educational approaches, Romania can cultivate an entrepreneurial mindset and skills base in its youth.

- Mobilize Domestic Capital for Innovation. A thriving startup ecosystem requires abundant, smart capital at every stage, from angel and seed funding to late-stage growth capital. Romania’s financing landscape for startups remains underdeveloped, relying heavily on a few local funds and foreign investors. We recommend a set of policies to unlock domestic capital:

- Enable pension and institutional funds to invest in venture capital. Romania’s large pension funds and insurance firms mostly invest in conservative assets domestically

- Tax incentives for venture investors (LPs and angels): To attract more investors into Romanian VC funds, introduce tax credits or deductions for individuals or corporations (Limited Partners) who commit capital to approved venture funds. For instance, a 30% tax credit on investments into certified VC funds (up to a cap) could entice high-net-worth individuals or companies to become LPs. Likewise, enhance the existing Business Angels Law, current incentives in Romania (a tax exemption on capital gains for angel investments held 3+ years) could be expanded to include upfront income tax relief on angel investments, mirroring the UK’s very successful SEIS/EIS programs.

- Simplify and support VC fund formation: The government can reduce red tape for setting up new venture funds or incubators. This might include easing licensing requirements, providing legal templates, and possibly public co-investment. For example, creating a Fund-of-Funds program using EU structural funds or state budget to invest in private VC funds (as LP) could anchor new funds.

- Implement Legal and Regulatory Reforms to Incentivize Startups and Investors. Romania's regulatory environment must actively encourage entrepreneurship rather than inadvertently hinder it. Key reforms include a clear legal framework for Employee Stock Ownership Plans (ESOPs) and taxation of stock options, and reduce bureaucracy and improve ease of doing business for startups as time is of the essence for startups, and cumbersome procedures can be debilitating for a small, fast-moving team.

Collectively, these legal reforms would send a strong signal that Romania is "open for business" for startups. Removing administrative obstacles and aligning incentives with those in successful ecosystems can rapidly improve Romania's attractiveness to both founders and investors.

6. CONCLUSIONS

This study utilized the Dealroom Global Tech Ecosystem Index 2025 to assess where the world's startup ecosystems stand, and glean insights for Romania's aspirational journey toward tech hub status. The Index's multidimensional analysis revealed that global champions like the Bay Area and New York continue to dominate by sheer scale, density leaders like Cambridge show innovation efficiency regardless of size, and rising stars like Lagos and Istanbul prove that explosive growth is happening well beyond Silicon Valley's orbit. Romania, at present, is not prominently featured in these categories, highlighting the need for strategic interventions.

The government, academia, and private sector must collaborate closely to nurture the ecosystem's growth. If executed well, Romania can leverage its strengths (strong IT outsourcing sector, comparatively low costs, and talented engineers) to foster homegrown startups that compete globally. In time, success stories from Romania (e.g. future "unicorn" tech companies) will not only boost the economy but also inspire the next generation of entrepreneurs, creating a self-sustaining ecosystem. In conclusion, the global data analyzed here offers both a benchmark and a roadmap for Romania. The benchmark tells us where Romania stands relative to others, lagging in density and growth. The roadmap is drawn from those places that have succeeded: invest in people, unleash capital, and remove barriers. The success of rising ecosystems from Nigeria to Lithuania demonstrates that latecomers can rapidly ascend in the tech domain with the right mix of talent, capital, and supportive policy. With commitment and strategic focus, Romania can join the ranks of these rising tech nations, and perhaps one day its cities will appear among the Global Champions.

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