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Financing Europe's Innovation Ambition

How the implementation of the Multiannual Financial Framework 2028-2034 could lead to support the development of European startup and scaleup ecosystems?

Working Paper

26.08.2026

Contents

Introduction

Develop European startup and scaleup ecosystems to boost innovation has become a political priority of the European Commission. The EU Startup and Scaleup Strategy adopted on the 28.05.2025 provides the following justification: "A thriving startup and scaleup ecosystem can transform Europe's economy – by increasing productivity, creating quality jobs and attracting talent and investments"[1]. This is, of course, not without foundation. The credit for having recognised that, within a capitalist economy, the entrepreneur is a central agent of innovation and economic development goes to Joseph A. Schumpeter[2]. He was the first to describe the economy as a dynamic system where innovations continuously transform economic structures[3]. His research has also documented the need for entrepreneurs to access financial resources to be able to innovate. He therefore attributed an important economic role to financial institutions. The surge in political interest in startups is largely due to Silicon Valley giants like Microsoft, Google, Amazon, and Apple, which have driven the digital revolution. In a sense, they have become the modern figure of Schumpeter's entrepreneurs.

Despite of the growing attention paid to startups, the concept is quite difficult to grasp. While the first definitions presented startups mainly as newly created, active and independent firms[4], recent conceptualizations consider innovation as a core distinguishing characteristic[5]. A widely used definition has been proposed by Steve Blank, who defines a startup as "a temporary organization designed to search for a repeatable and scalable business model"[6]. This definition emphasises the transitional nature of a startup. Indeed, once the successful business model has been defined, the company will eventually "scale" and become an established company. So, you're born a startup, but you don't stay one. In 2026, the European Commission has published

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[1] European Commission, The EU Startup and Scaleup Strategy: Choose Europe to start and scale, COM(2025) 270 final

[2] Schumpeter J. A., *The Theory of Economic Development*, 1911

[3] In his famous book *Capitalism, Socialism, and Democracy* (1942), Schumpeter used the concept of "creative destruction" to describe the economic phenomenon whereby new better technologies replace older ones. Since then, technological progress has become central to explain economic growth based on productivity gains. More precisely, a higher level of productivity (A) enables more output for a given level of capital (K) and labour (L). This is best illustrated by an aggregated production function representing the production capabilities of an economy $Y = A \cdot F(K, L)$. To explain the growth of A over time, the Schumpeterian growth model developed by P. Aghion and P. Howitt (1992) uses technological steps and the phenomenon of destructive creation. Formally: $A_t = (1+\gamma) \cdot N_t$, where A_t is the productivity (technology level) at time t, $\gamma > 0$ gives the proportional productivity improvement from each innovation replacing the previous technology and N_t represents the cumulative number of successful innovations up to time t.

[4] Luger, M. I., & Koo, J., "Defining and tracking business start-ups", Small Business Economics, 24(1), 2005, p. 17–28.

[5] Ehsan, Z.-A,. "Defining a Startup – A Critical Analysis." SSRN, 2021

[6] Blank S., "Fund Raising is a Means Not an End.", 2013 (consulted on 07.08.2026)

its own definitions of startups and scaleups based on more formal criteria enabling a practical classification suitable for policy interventions. These definitions align with existing conceptualisations and therefore established thresholds to identify young small autonomous enterprises engaged in innovation activities (startups) and more mature and fast-growing innovative enterprises (scaleups)[7].

To support the implementation of its policy priorities, the European Union has a multiannual investment budget: the Multiannual Financial Framework (MFF). The current MFF (2021-2027) includes different funds and programmes relevant to startups and scaleups, especially programmes funding research and innovation (R&I) activities. The proposal for the next MFF (2028-2034) was presented by the European Commission in July 2025 and should be adopted before the end of 2027. This will be the result of ongoing interinstitutional negotiations involving EU Member States and the European Parliament[8]. In line with the political priorities communicated by the European Commission[9], the proposal for the MFF 2028-2034 emphasises a commitment to support startups and scaleups, especially through a new European Competitiveness Fund and Horizon Europe, the Framework Programme for R&I of the EU. More specifically, "the new European Competitiveness Fund, working in synergy with Horizon Europe, will provide seamless support to European innovators from research to deployment, from ideas to start-up to scale-up"[10].

[7] The formal criteria such as size, age or growth thresholds are listed in the Annex of COMMISSION RECOMMENDATION on the definition of innovative enterprises, innovative startups and innovative scaleups, C(2026) 1800 final.

[8] According to the procedure defined under Article 312 of the Treaty on the Functioning of the European Union (TFEU)

[9] See in particular "Europe's Choice: Political Guidelines for the Next European Commission 2024-2029" and European Commission, A Competitiveness Compass for the EU, COM(2025) 30 final

[10] European Commission, Communication on a dynamic EU Budget for the priorities of the future - The Multiannual Financial Framework 2028-2034, COM(2025) 570 final

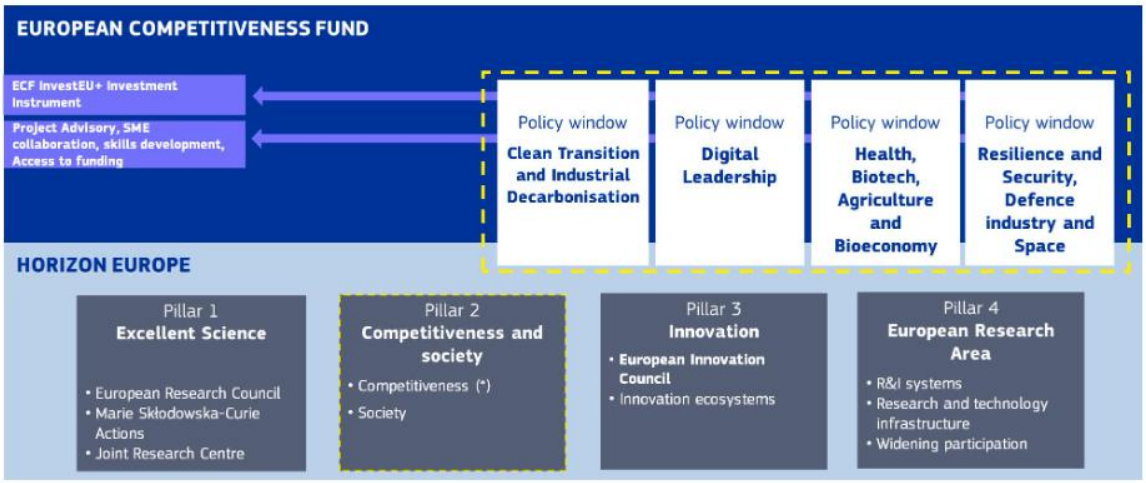

Figure 1: Overview of the European Competitiveness Fund and Horizon Europe 2028-2034 (source: European Commission, 2025)

The commitment to allocate MFF resources to the development of a stronger European startup and scaleup ecosystem shows that the European Commission intends to equip the European Union with the resources needed to achieve its political ambitions. Nevertheless, beyond resources, achieving public policy objectives depends on many other factors, including choices made by various stakeholders involved in the practical implementation of EU funding programmes[11]. This relates not only to the choice of specific policy instruments but also to their settings including for instance the definition of their scope, eligibility conditions or assessment methods. While the adoption of the MFF will set out a framework, many of these elements are to be defined during implementation and can evolve incrementally[12]. Therefore, as this work is about to get underway, it seems timely to ask the following question:

How can the implementation of EU funding programmes of the MFF 2028-2034, especially programmes of Horizon Europe and the new European Competitiveness Fund, ensure supporting the development of European startup and scaleup ecosystems?

Answering this question brings us to highlight that, for good reasons, EU level support schemes are already available (I). To ensure implementing programmes effectively supporting startup and scaleup ecosystems, a few avenues can be explored (II). However, effective

[11] John P., *Analyzing Public Policy*, 2nd Edition, Rootledge, London, 2012, p30
[12] Majone G., Wildavsky A., "Implementation as Evolution", in. Pressman J. and Wildavsky A. *Implementation,* 1973, p. 193-194

implementation also depends on a conscious approach toward innovation policy instruments and their policy implications (III).

I. Startups and scaleups, government support and EU funding programmes

To begin with, it is important to lay the foundations for a sound line of reasoning. This will involve highlighting the state's role in funding startups (A) and providing an overview of the EU's current support (B).

A. Startup advantage and challenges: The rationale for government support

Startups have proven particularly effective at commercialising emerging technologies[13]. Recent well-known example includes generative AI, mRNA vaccines or low carbon technologies. So, what explanations have been put forward for what might be described as a "startup advantage"[14]? These involve both identified obstacles for established firms to successfully deal with emerging technologies and the ability of startups to seize opportunities opened by new technological paradigms. Contrary to incumbents, by innovating, startups are not confronted to cannibalising their own profits. This is known as the "Arrow replacement effect", where prospects for lower additional profits generate less incentives for incumbent firms than for new entrants to innovate[15]. A further explanation emphasis the difficulty for established firms to recognise the potential value of a new technology when it doesn't immediately meet the needs of their current market i.e. the requests expressed by their lead costumers. In contrast to incumbents, startups must establish a customer basis. This can lead them to look for a market valuing the capabilities of a new technology, while established companies tend to prioritise their core business. Once the technology entered a first market and progresses, it may become valuable to other markets and thereby lead to a so called "disruptive innovation"[16]. Some empirical evidence of the existence of a "startup advantage" is given by citation-based quality measures of patents hold by startups and scaleups as well as job creations[17].

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[13] Haessler P., Giones F., Brem A., "The who and how of commercializing emerging technologies: A technology-focused review", Technovation, 121, 2023

[14] Kolev J., Haughey A., Murray F., Stern S., "Of Academics and Creative Destruction: Startup Advantage in the Process of Innovation", NBER Working Paper No. 30362, 2022

[15] Arrow K., "Economic Welfare and the Allocation of Resources for Innovation". In: *The Rate and Direction of Inventive Activity: Economic and Social Factors*, Princeton University Press, 1962, p.609-626

[16] Christensen C. M., *The Innovator's Dilemma, When New Technologies Cause Great Firms to Fail*, Harward Business Review Press, Boston, 1997

[17] Haltiwanger J. Jamin R.S. Miranda J. „Who creates jobs? Small versus large versus young", Review of Economics and Statistics, 2013, 95 (2), p. 347-361

Given that startups innovate, why should governments support them? The rationale is based on a market failure for R&D investments[18], needs for societal transformation, competitiveness and technological sovereignty[19], as well as a system failure limiting the access for startups to finance. The latter is due to the risk profile of startups, which is characterised by technical and market uncertainties. Fact is that innovating using technology concepts developed in research laboratories is generally a long, non-linear and uncertain process requiring significant level of resources. Investors and financial institutions find this type of investments quite unattractive. This can largely be explained by the characteristics of R&D investments. As knowledge is the main output of R&D, it mainly takes the form of intangible assets such as human capital. If an R&D worker, for instance, leaves the startup, the company loses valuable tacit knowledge, which may, consequently, spillover to another company. On the other hand, some Intangible assets may be valuable only for a specific application or combined to other specific assets of the startup, making them hard to transfer in case of bankruptcy[20]. Investors therefore are subject to a risk of sunk costs. Furthermore, the uncertain outcomes of R&D investments imply information asymmetries and moral hazard issues[21]. Concretely, inventors, entrepreneurs and R&D workers usually have a better understanding of R&D projects than investors and may not be fully transparent with them. This makes the marketplace for R&D investments resemble the famous "market of lemons" modelled by George Akerlof[22]. The idea is simple; investors will provide funding only for a higher rate of return (a lemon premium for R&D) to compensate for the difficulty to distinguish between good and bad innovation projects.

Because of the difficulty to access the necessary resources to succeed at transforming a technology concept into an innovation this process has been labelled the "valley of death"[23]. For

[18] The basis of this argument is that the social return to R&D is larger than the private return. This follows from the observation that the main output of R&D is knowledge, which is considered a "nonrival good" in the sense that the use by one firm doesn't prevent the use by another. Hence, firms cannot necessarily appropriate the outcome of R&D activities and will be reluctant to invest. In other worlds, R&D generates positive externalities in the form of knowledge spillovers that may prevent private investments and therefore justify public investments. Intellectual property rights play an important role in enabling firms to appropriate knowledge, but they do not provide a full protection. The identification of a market failure for R&D is rooted in Kenneth Arrow's work (1962) and has been further documented since. See in particular: Griliches Zivi, "The Search for R&D spillovers", Scandinavian Journal of Economics, 94, 1992, p. 29-47.

[19] Edler, J., K. Blind, H. Kroll and T. Schubert, "Technology sovereignty as an emerging frame for innovation policy. Defining rationales, ends and means," Research Policy, 52(6), 2023, 104765

[20] Haskel J., and Westlake S., *Capitalism without Capital: The Rise of the Intangible Economy*, Princeton University Press, 2018

[21] Bronwyn H. H., Lerner J., "The financing of R&D and Innovation", In: Hall H. H., Rosenberg N., The Handbook of the Economics of Innovation, Volume 1, Chapter 14, 2010, p.609-639

[22] Akerlof G. A., "The Market for "Lemons": Quality Uncertainty and the Market Mechanism", The Quarterly Journal of Economics, 84(3), 1970, p. 488-500

[23] Auerswald P. E., Branscomb L. M., "Valleys of Death and Darwinian Seas: Financing the Invention to Innovation Transition in the United States", The Journal of Technology Transfer, Vol. 28, 2003, p. 227-239

a startup, the challenge is even greater than for an established company. In terms of financial capacity, what sets startups apart from incumbents is the absence of revenues from existing economic activities. Whereas an established business can invest part of its revenue in new R&D projects, a startup must find other sources of funding.

Nevertheless, startups have access to a dedicated financial market with its own working arrangements: The venture capital (VC) market. It emerged in the US after World War II because of the high potential reward of successfully investing in innovative companies. To limit the risks related to R&D investments, the VC industry has developed a model based on portfolio investments in early-stage companies of high technology industries. VC funds deal with information asymmetries by using staged funding also known as "funding rounds"[24]. This is combined with a specific monitoring system based on taking significant control rights conditioned to the performance of the startup. If the startup performs well, the entrepreneurs may regain more autonomy[25]. To further reduce the risks, VC Investments usually takes the form of preferred convertible stocks[26].

Since the early 80's, the VC industry has become an important investor for startups in the US[27]. However, investments are concentrated in technological areas with high potential growth, low complexity and low capital requirements. Furthermore, VC funds have a strong preference for projects that can be commercially viable in a timeframe of three to five years[28]. Therefore, in many cases, startups need to access other resources such as grants[29] or business angel investments before they can access VC funding. In other words, VC builds on prior public investments in science and technological development, which can also be described as relying on the "entrepreneurial state"[30].

To conclude on the VC industry, it is important to emphasise that it is primary a US phenomenon. While the model is globalising, and VC funds have progressively emerged in other

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[24] Gompers P. A., "Optimal Investment, Monitoring, and the Staging of Venture Capital", Journal of Finance, 50(5), 1995, p. 1461-1489

[25] Kaplan S., Strömberg P., Financial Contract Theory Meets the Real World: An Empirical Analysis of Venture Capital Contracts", The Review of Economic Studies, 70(2), 2003, p. 281–315

[26] Preferred convertible stocks provide a protection to the VC fund, in case of liquidation, based on a priority claim limited to the invested value. On the other hand, if the startup is very successful, the preferred shares can be converted in common shares and the VC fund can exit with the corresponding value.

[27] Kortum S., Lerner J. "Assessing the Contribution of Venture Capital to Innovation", The RAND Journal of Economics, 31(4), 2000, p. 674-692

[28] Ghosh S., Ramana N., "Venture Capital Investment in the Clean Energy Sector." Harvard Business School Working Paper, No. 11-020, 2010.

[29] In this regard, the Small Business Innovation Research (SBIR) programme has provided support to many startups in the US since its introduction in 1982. cf: Lerner J., "The Government as Venture Capitalist: The Long Run Impact of the SBIR Program", Journal of Business 72(3), 1999, p. 285-318.

[30] Mazzucato M., *The Entrepreneurial State: Debunking Public vs Private Sector Myths*, Penguin Books, 3rd Edition, 2018

advanced economies, the amounts invested are, for the time being, much more modest. An explanation given for this fact is that the VC industry relies on Initial Public Offering markets[31], and the US NASDAQ is incontestably the strongest one.

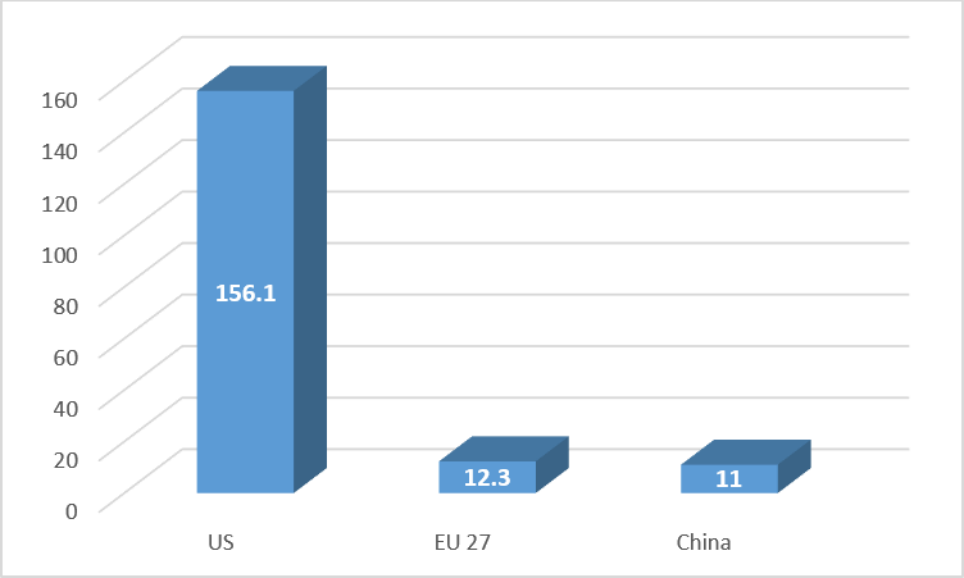

Figure 2: Total venture capital investment in companies in 2024 in billion US dollars (made by the author based on OECD data[32])

B. The EU level funding support for startups and scaleups

Governments have developed a range of public funding instruments to support R&I. Among others, this includes R&D subsidies, R&D tax incentives, Government Venture Capital, investment in R&I infrastructures, innovation advisory services, credit loans and guaranties. Due to the competences set in the EU treaties[33], EU funding schemes do not draw on the full range of available options. Tax incentives in particular falls only in the remits of EU Member States. This section will discuss the current support provided to startups and scaleups by the MFF 2021-2027. Given the complexity of the EU funding landscape, it doesn't aim for an exhaustive presentation

[31] Black B., Gilson R., "Venture Capital and the Structure of Capital Markets: Banks versus Stock Markets", Journal of Financial Economics, 47, 1998, p. 243-277

[32] The figure is based on the data from the OECD Venture capital investments (market statistics) data base. For China, the figure is based on the data collected separately as incremental venture and growth capital investment.

[33] The scope of the competences of the European Union is defined under Article 2 of the Treaty of the European Union (TUE)

of the different EU schemes. The aim is rather to identify the main relevant characteristics of the existing support to draw some conclusions.

With respect to startups and scaleups, a first relevant distinction, that can be made, concerns direct and indirect supporting schemes. While several programmes or initiatives funded by the MFF[34] can provide direct funding to startups and scaleups, others contribute by making investments supporting the broader R&I ecosystem. Although they may be less readily linked to the success of European startups and scaleups, they are no less important. Some examples are R&I infrastructures funded by Horizon Europe, artificial intelligence infrastructures and services funded by the Digital Europe Programme, the provision of data through projects funded by the European Space Programme or EU4Health as well as different training programmes.

Programmes providing direct funding opportunities to startups and scaleups are a little easier to identify and can be classified into two main categories: Programmes specifically targeting startups and scaleups and relevant programmes open to startups and scaleups. The flagship programme directly targeting startups is the European Innovation Council (EIC) Accelerator programme. It concentrates a large share of the EUR 8,75 billion of the EIC budget[35] and supports startups with grants, equity investments and business acceleration services. The EIC Accelerator was created in 2018 and was progressively supplemented by additional equity-based programmes to support the scaling up of beneficiaries i.e. investing higher amounts in more mature companies. These recent additions are the EIC Strategic Technology for Europe Platform (2024) and the European Scaleup Fund (2026). Some sectoral initiatives are also targeting startups and scaleups. The CASSINI initiative of the EU Space Programme includes a €1 billion EU seeds and growth fund, competitions, challenges, networking events and business acceleration services. Dedicated startup support is also available as part of the European Defence Fund in the form of a business accelerator programme of the EU Defence Innovation scheme (EUDIS). The Digital Europe Programme provides dedicated support mainly in the form of equity investments through an investment platform for strategic digital technologies and a chips fund[36].

[34] To avoid making this section overly lengthy, I would ask readers who are unfamiliar with the objectives and content of the individual EU programmes mentioned below to refer to the description provided on the European Commission's website (https://commission.europa.eu/) as well as the additional relevant sources indicated in the bibliography.

[35] Article 9 of Regulation (EU) 2021/695 establishing Horizon Europe 2020-2027 indicates that "at least 70 % of EIC budget shall be dedicated to SMEs, including start-ups".

[36] European Commission, Report on the Digital Europe Programme: Main findings of the interim evaluation, COM(2025) 771 final

Regarding relevant programmes open to startups and scaleups, these are essentially programmes funding R&D or specific innovation activities. Therefore, Horizon Europe is the programme offering the most opportunities, followed by the EDF with EUDIS[37]. Other relevant programmes with direct funding opportunities include Digital Europe and the LIFE Programme[38]. These EU funding programmes mainly support collaborative projects involving beneficiaries of different EU Member States. The EU's regional policy[39] and financial instruments – mainly in the form of equity, loans and guarantees – of the InvestEU Programme implemented by the European Investment Bank Group (EIB) provide additional funding opportunities.

The financial support provided by the MFF can also be categorised by type of funding instruments. A large part of the programmes is made of grants, but equity has become increasingly used in recent years and some programmes include public procurement schemes. In this regard, it is worth noting that instruments directly targeted at startups and scaleups tend to favour equity investments, in particular Government Venture Capital, and business acceleration services. I will come back on potential implications related to focusing mainly on these instruments bellow. Then, the level of implementation is another key aspect. Three main levels can be distinguished: Funding schemes directly managed at EU level (mainly grants and procurement), programmes relying on an implementation partner such as the EIB (especially equity-based schemes), and funding implemented at Member States level.

So, how adequate is this architecture to support the development of a thriving European startup and scaleup ecosystem? This is difficult to assess. The different programmes performance statements and evaluations of individual programmes do not provide much information. One figure that is generally tracked is the level of participation of small and medium sized enterprises (SMEs). Hence, we know that 18% of project participants in Horizon Europe projects between 2021 and 2026 are SMEs, which is slightly less than in Horizon 2020 projects (19,9%)[40]. Regarding EDF projects, SMEs account for around 39% of unique participants and receive around 27% of EU funding[41]. This doesn't say much about startups though. Apart from these figures relating to SMEs, the main information available concerns the amounts allocated

[37] At least 20% of the EDF funding is allocated to EUDIS. This represents EUR 1,46 billion.
[38] The Innovation Fund could also be part of this list, noting the distinctive nature of its funding through the EU Emissions Trading System (ETS)
[39] The European Structural and Investment Funds provide innovation funding to SMEs in different form through the European Regional Development Fund (ERDF), the European Social Fund Plus (ESF+), European Cohesion Fund (CF), European Maritime, Fisheries and Aquaculture Fund (EMFAF) and the European Agricultural Fund for Rural Development (EAFRD).
[40] Ratio calculated from the data available in the Horizon Europe Dashboard (consulted on 14.08.2026).
[41] European Commission, Programme Performance Statement of the European Defence Fund (consulted on 19.08.2026)

to programmes explicitly targeting startups and some relevant information on the creation of technological opportunities such as publication and patent counts. Obviously, this is not sufficient to draw precise conclusions.

Recent macroeconomic analyses, however, suggest Europe's economy is too static and improvements in the implementation of EU funding could contribute to change the dynamic. According to the Draghi report, the EU must close its "innovation gap"[42] with the US and this could involve reforming some aspects of EU funding programmes such as introducing ARPA[43] type programmes. A recent publication also warns about the risk for the EU to fall into a "Middle Technology Trap"[44] and encourages to better target EU R&I funding.

Furthermore, when it comes to startups and scaleups, broader ecosystem comparisons seem to suggest that, despite a positive trend over recent years, the EU has room for improvement. This is one of the main conclusions from the recently published European Startup and Scaleup Scoreboard[45].

	EU 27	USA	China
Total valuation of the ecosystem in Bn €	748.14	3 767.22	1 258.66
Total valuation of the ecosystem as a share of GDP	3,84%	13,1%	6,72%
Number of exits	576	1237	76
Number of unicorns	355	1770	436

Figure 3: International comparison of startup and scaleup ecosystems (source: European Startup and Scaleup Scoreboard 2026)

[42] Draghi M., The future of European competitiveness, 2024

[43] In reference to the US Advanced Research Project Agencies. The model was introduced with the creation of the Defence Advanced Research Project Agency (DARPA) in 1958. It is known for implementing mission-oriented innovation programmes combining different instruments to support the commercialisation of early-stage technologies with a focus on bridging the gap between basic and applied research. See in particular: Azoulay P., Fuchs E., Anna P. Goldstein A.P., Kearney M., "Funding Breakthrough Research: Promises and Challenges of the 'ARPA Model'", in: Lerner J. and Stern S., "Innovation Policy and the Economy", 19, 2019, p. 69-96

[44] European Policy Analysis Group, "EU Innovation Policy: How to Escape the Middle Technology Trap", 2024

[45] European Commission, European Startup and Scaleup Scoreboard 2026, Main Report

Despite of the obvious limitations in analysing the current funding landscape, it is possible to identify some avenues to ensure that EU funding programmes effectively support startup and scaleup ecosystems.

II. Create the conditions for a thriving European startup and scaleup ecosystem: Areas to explore

We will now turn to some features of the future implementation of EU programmes that could support the development of startups and scaleups ecosystems. This will be mostly relevant for Horizon Europe and the ECF, but not exclusively. I will start with some practical aspects related to ensuring an equal access to non-targeted funding programmes (A). Then, I will argue that programming should give more attention to create technological opportunities (B).

A. Practical considerations to ensure an equal access to EU funding opportunities

An aspect that may deserve a more careful attention in future EU funding programmes is the openness to startup participation, especially for relevant R&I programmes not directly targeting startups and scaleups. That is, ensuring equal opportunities for startups and more established firms. This may seem trivial, but some precautions are required to avoid that the implementation of future EU programmes discriminate startups. Indeed, based on the authors own experience with supporting applications to EU funding programmes[46], some implementation aspects can create obstacles. This includes for instance administrative requirements such as a financial capacity assessment based on the financial history of the company. Currently, most EU funding programmes condition grants of more than EUR 60 000 to this type of assessment based on the company's financial records of the past two years[47]. Obviously, if the criteria applied are very strict, such assessments may prevent or discourage the participation of startups and scaleups. Similarly, grants with low pre-financing rates and costs refunded only after long

[46] This section largely builds on daily observations made as a professional involved in developing the support for applicants to EU funded programmes in France and Austria, mainly for Horizon 2020, Horizon Europe and the European Defence Fund. It also draws on insights provided by numerous conversations with colleagues in the field.

[47] According to the European Commission's Online Manual of the EU Funding & Tenders Portal (consulted on 16.08.2026), applicants usually need to provide documents showing the financial situation for the last two closed financial years (profit and loss account and balance sheet, business plan, audit report produced by an approved external auditor, certifying the accounts for the last closed financial year, etc.). The analysis is based financial indicators (liquidity, financial autonomy, solvency and profitability) and considers other aspects, such as dependency on EU funding and deficit and revenue in previous years.

reporting periods are not very convenient for startups. More specifically, in these circumstances, early-stage startups that do not yet have established revenue streams must secure additional external funding to implement the project. As mentioned earlier, this is often challenging.

A technical aspect, which may have an important impact on startup participation, is the management of bankruptcies and the expected consequence for the consortium. If the bankruptcy of a consortium member may lead to major financial consequences for other project participants or, at least, to a significant procedural burden for the coordinator, there is a strong incentive for consortium members to avoid involving startups in collaborative projects. In case of inflexible grant management processes, consortiums will necessarily seek to minimise the risk by favouring partners with a lower probability of bankruptcy. Lengthy and complicated Grant Agreement amendment procedures may also strengthen these incentives. On the contrary, more flexible processes to extend a project duration, replacing a defaulting partner, redefining the work plan or reallocating tasks enable consortium members to more easily integrate a high-risk partner. This is becoming even more important in the context of an increased use of the lump-sum funding model aiming to reduce the administrative burden of project participants in Horizon Europe. Indeed, lump sum funding is based on fixed amounts paid for completed project work packages. In this context, a startup failing to fulfil its tasks in a specific work package maybe seen as an important risk for project partners to not recover their own incurred costs. Therefore, a flexible approach toward unexpected implementation issues, especially bankruptcies, would be important to prevent that consortiums consider involving startups as an excessive risk.

In a less obvious way, but probably with an even greater potential impact on innovation, providing the flexibility to review certain aspects of the project during its implementation makes it more compatible with the way startups operate to commercialise emerging technologies. Indeed, the so called “lean start-up” methodology encourages experimentation, seeking for early customer feedback and engaging in iterative design[48]. This means that startups favour developing products in an iterative and incremental way instead of using long upfront and speculative development cycles. The methodology implies to create “minimum viable products” that can quickly be tested with potential customers and use collected feedback to quickly adapt the product and business model. This can lead to both small adjustments and major shifts such as a complete change in the targeted market. The lean startup methodology has been described as using “lean and agile principles” to facilitate business and product development under conditions of extreme uncertainty[49]. One can easily see how the methodology differs from

[48] Blank S., “Why the Lean Start-up Changes Everything”, Harvard business review, 2013, 91(5), p.64-72
[49] Ries E., *The Lean Startup*, 2011

following a step-by-step project methodology based on a three to five years' work plan and well-defined deliverables. Instead, the R&D team may drop some developments and start new experimentations as new insights become available. This methodology is often applied in the development of new products, ventures, and business models[50]. Therefore, to accommodate the methodology used by startups, the project implementation should provide some room for modifications of the project work plan. If adjusting tasks or deliverables is associated to a complex process involving multiple stakeholders from the consortium members to the granting authority to modify the "description of the action" in the Grant Agreement[51], startup will find it harder to fit into collaborative R&I projects.

B. Encouraging exploration to create technological and market opportunities?

Ensuring that startups can access EU funding opportunities is certainly an important line of inquiry, but as highlighted in the first section, a thriving startup and scaleup ecosystem builds on technological and market opportunities. This is an important fact to consider for the preparation of the future Work Programmes translating objectives and priorities of EU Programmes into concrete funding actions and calls for proposals. The following considerations touch to an area that is a bit more subtle than that of ensuring an equal access to EU funding for startups: Setting up a competition friendly innovation policy enabling knowledge spillovers on which startups can build. So, let's beginning by recalling that startups tend to commercialise emerging technologies. In many instances such as digital technologies, biotechnologies or more recently green technologies, a thriving startup ecosystem emerged as the result of ambitious government investments in new technological areas[52]. Therefore, EU funding programmes can also support the development of startup and scaleup ecosystems by creating these kinds of opportunities. I will argue that a way for future Work Programmes to achieve this is by encouraging exploratory research activities.

Generally, both academic and industrial research activities can take two main directions, either engage in exploratory research to test new approaches or deepening an existing research line. The first direction is more likely to fail. One might think that academic research is more exploratory by nature because of academic freedom. Yet, even in academia the pressure to

[50] Ghezzi A., Cavallo A., "Agile Business Model Innovation in Digital Entrepreneurship: Lean Startup Approaches." Journal of Business Research, 110, 2020, p. 519–537

[51] Annex 1 of the Gant Agreement signed between the European Commission and beneficiaries of EU funded programmes is usually the description of the project that will be implemented.

[52] Rodrik D., "Green Industrial Policy", Oxford Review of Economic Policy, 30(3), 2014, p. 469–491

publish can lead scientists toward safer research projects[53]. Despite of diminishing returns, the temptation for companies to focus their efforts on improving technologies on which they have gained a comparative advantage is also well documented[54]. At firm level, it is possible to create incentives schemes to promote the exploration of new ideas. Sophisticated models based on contract theories offer some interesting suggestions in this regard[55]. However, this type of schemes may not be used in practice. So, another available option would be to lead more toward exploratory research activities in the design of future Work Programmes.

There are many historical examples of startups that have achieved success thanks to a technological opportunity arising from exploratory research carried out in public or private R&D laboratories. One of the particularly well-documented case studies concerns Xerox PARC in Palo Alto, California[56]. The R&D facility was created by Xerox, a global company of the printing industry, to strengthen its competitive advantage. Research results from Xerox PARC scientists have contributed to many important developments for the personal computer and modern communication technologies. These include, among others, the ethernet, the graphical user interface or semiconductors. Even more relevant to our topic, Xerox PARC gave birth to a high number of successful spinoffs capitalising on the technological opportunities generated by the R&D facility. These include Adobe, 3com or SynOptics. Another interesting aspect of this story is that most of these technologies didn't leak from Xerox PARC. They were mostly commercialised using nonexclusive licences granted by the company itself. Indeed, Xerox deliberately choose not to pursue some idees that emerged in Xerox PARC, especially ideas that didn't fit well with the company's business model but let spinoffs try to commercialise them.

To enable a better understanding of the innovation policy I am talking about, it is worth considering the macroeconomic implications of a potential exhaustion effect in mature technological areas. In the introduction, I mentioned the importance of productivity growth for economic development and the rise in living standards over time. Paul Romer suggested that productivity growth can be understood as the accumulation of new ideas[57]. But what if new ideas

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[53] Besancenot D., Vranceanu R., "Reluctance to Pursue Breakthrough Research: A Signalling Explanation", Research Policy 54(4), 2024

[54] Aghion P., Dechezleprêtre A., Hérmous D, Martin R, Van Reenen J., "Carbon taxes, path dependency, and directed technical change: Evidence from the auto industry", Journal of Political Economy, 2016, 124(1), p.1-51

[55] Manso G., "Motivating Innovation", Journal of Finance, 2011, 66(5), p.1823-1860

[56] Chesbrough H., *Open Innovation, The New Imperative for Creating and Profiting from Technology*, 2003

[57] In Romer's model the change in productivity (dA) is a function of the number of researchers working on new ideas (LA) and the stock of ideas that have been invented over the course of history (A): Formally $dA=\delta \cdot LA \cdot A$, where δ is a parameter to account for the productivity of researchers. The stock of existing ideas is part of the equation because of the new possibilities provided by a more important stock of knowledge. For instance, without the invention of the microscope some research in biology would not be possible

are becoming more difficult to find? The consequence would be that to maintain the same growth rate of ideas, the economy would need more researchers to compensate for the drop in research productivity. However, constantly increasing the share of the labour force dedicated to research activities is reducing the number of workers available for other economic activities. This creates an economic dilemma. Now, some empirical evidence seems to suggest that research productivity has been declining over time, while the research work force has increased[58]. While the cause of this phenomenon is probably multifactorial, it is possible to establish a link with common observed patterns of technological development. The development trajectory of a new technology is usually modelled with a so called "S" curve[59].

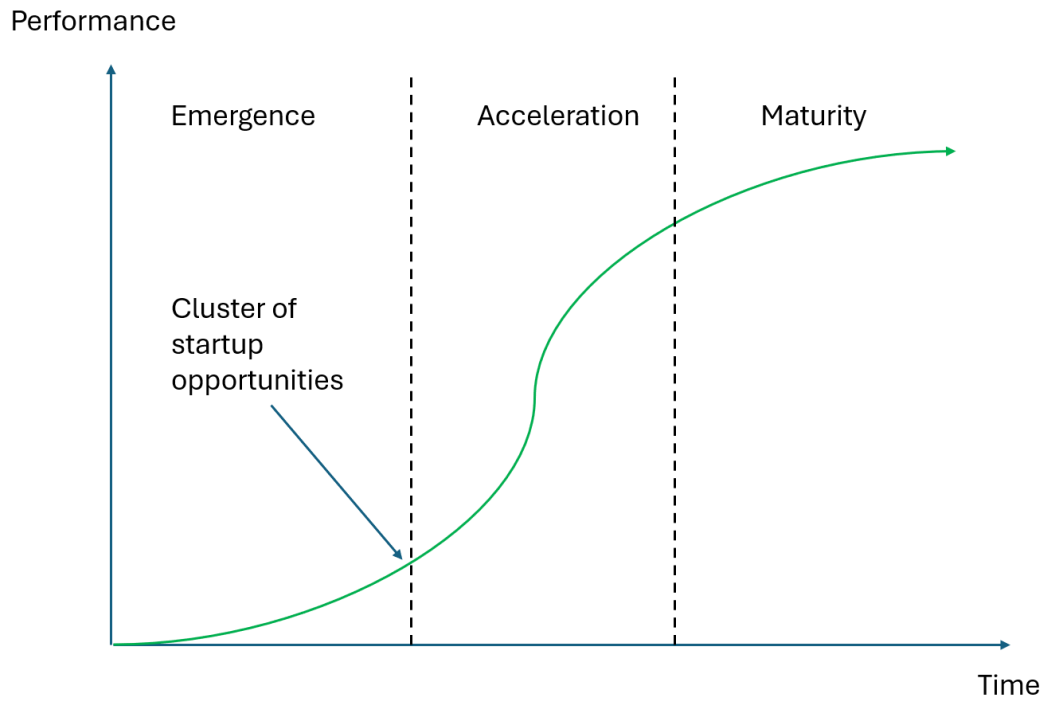

Figure 4: Progression pattern of a new technology (made by the author based on Foster, 1986)

This curve has three main phases. An emerging phase where the technology is poorly understood and requires significant efforts to make some progresses, an acceleration phase with rapid improvements and a mature phase with diminishing returns corresponding to a depletion of its potential. So, let's imagine that more technologies are simultaneously in the third phase

today. cf: Romer P. M., "Endogenous Technological Change", Journal of Political Economy, 98(5), 1990, p. 71-102

[58] Bloom N., Jones C. I., Van Reenen J., Webb M., "Are Ideas Getting Harder to Find?", American Economic Review, 2020, 110(4), p. 1104–1144

[59] Foster R. N., *Innovation: The attacker's advantage*, London, Macmillan, 1986

and concentrate most of the research and development effort. At macroeconomic level, we could observe a slower accumulation of ideas[60]. So, we would need more researchers for a lower output. Now, there is a chance that encouraging to engage more in exploratory research activities would mitigate this trend by enabling new technological areas to emerge. In other words, opening more new "S" curves leading the economy to simultaneously have more research lines with a higher research productivity. This would also create new technological opportunities for startups.

Of course, an innovation policy supportive to startups maybe easier to theorise about than to put into practice. And that surely is! However, some government programmes have proven incredibly effective at supporting the emergence of new technological paradigm. This is the case of the ARPA model promoted by the Draghi report. Indeed, DARPA's funding programmes have contributed significantly to the emergence of new technologies and innovations including the internet, the personal computer and drones. This is due to both, its flexible mission-oriented approach[61] and its focus on encouraging new technological developments based on fundamental science. Of course, DARPA is embedded in the institutional system of the US. Therefore, I am not suggesting that Horizon Europe or the ECF should simply create a DARPA. The EU should create its own instruments! Nevertheless, it illustrates that setting up programmes capable of fostering the emergence of new technologies rather than simply advancing existing ones is feasible.

In terms of innovation policy, this generally involves drawing on societal challenges, mobilising high-skill individuals and encourage competition[62]. For this purpose, the policy windows (see figure 1) defined for the ECF and Horizon Europe may provide a suitable framework.

III. Toward a thoughtful approach to innovation policy

Implementing public policies is not an easy task. This is why this third part will examine the limitations of an overly narrow approach (A) and discuss political implications (B).

[60] To account for the possibility that ideas may become more difficult to find when the stock of knowledge increases and that it could impact productivity growth, Chad Jones proposed a revised version of Romer's idea accumulation function using a dedicated parameter raising A to the power ϕ. If $\phi<0$, the larger the existing stock of knowledge, the harder it is to generate additional knowledge. Cf: Jones C., "R&D-Based Models of Economic Growth," Journal of Political Economy, 103(4), 1995, p.759–784.

[61] Mazzucato, M., "Mission-oriented innovation policies: challenges and opportunities", Industrial and Corporate Change, 27(5), 2018, p. 803–815.

[62] Aghion P., Boulanger J., Cohen E., "Rethinking Industrial Policy", Bruegel Policy Brief, Issue number 04/2011, 2011

A. Beyond startups and scaleups support: Shaping innovation ecosystems

From the previous sections, it may already be clear to the reader that directly funding startups and scaleups is only one of many aspects to consider for developing a thriving European startup ecosystem. Yet, one specific policy instrument has established itself as the tool of choice for governments around the world actively engaged in supporting startups and scaleups: Government Venture Capital (GVC). In recent years the state has increasingly become a venture capitalist to close funding gaps, correct system or transformational failures and increasingly to ensure technological sovereignty[63]. GVC correspond to different types of public equity investment schemes, not to a single, well-identified policy instrument. Among these, setting up a dedicated GVC fund, such as the EIC Fund, or investing in private VC funds, as done by Digital Europe, are two of the most common forms. As is often the case with new policy instruments, GVC initiatives have been scrutinised to eventually identify the conditions necessary for their success. The outcome is that GVC can play a useful role in supporting innovation, provided that necessary precautions are taken to target technological areas neglected by private VC and to operate selectively and with a business-oriented focus[64]. The idea is to maximise two positive effects associated with GVC, first a possible signalling effect to encourage investments in promising technological areas and, secondly, generate technological spillovers beneficial to society. For this to happen, supported companies must have the necessary potential; hence the additional precautions in terms of selection and monitoring. In short GVC is about crowding in private investments.

This may seem pragmatic but there are many examples of GVC initiatives that did not produce the expected outcomes and led to significant losses for governments including for instance the US Clean Energy Initiative, the Chinese Government Guidance Fund programme and the Saudi Public Investment Fund[65]. These initiatives did both, supporting startups with concepts that had an obviously low market demand, and crowed out private investments by investing in startups that private VC was targeting anyway. These failures are largely attributed to ill-informed economic decisions and political interventions (also known as regulatory capture[66]). So, GVC may support innovation, but it can also easily go wrong. Of course, it is possible to mitigate the risks. In this regard, Josh Lerner has suggested using requirements of matching funds by private

[63] Vogelaar J. J., Eveleens C. P., van Rijnsoever F. J., "Toward an Entrepreneurial State? A Novel Typology of Government Roles in Venture Capital", Industrial and Corporate Change, 2026

[64] Lerner J., "When Bureaucrats Meet Entrepreneurs: The Design of Effective 'Public Venture Capital' Programs", The Economic Journal, 112, 2002, p. 73-84

[65] Lerner J., "Government Incentives for Entrepreneurship", NBER Working Paper No. 26884, 2020

[66] Stigler G. J., "The Theory of Economic Regulation", The Bell Journal of Economics and Management Science, 2(1), p. 3-21

investors and delegating the management of GVC to independent bodies. These measures are certainly effective to improve the management of GVC initiatives. However, by imposing the dominant logic and temporality of private VC to GVC, they also limit the capacity of the policy instruments to provide the "patient long term capital" that innovation and therefore some science-based startups would need[67]. Therefore, GVC is not a silver bullet that automatically spurs a thriving startup and scaleup ecosystem.

The same line of reasoning applies to similar popular policy instruments such as creating or funding "seed accelerator programmes". Since its creation in Silicon Valley in the early 2000s, the accelerator model has proliferated and was adopted by private and public entities worldwide[68]. Initially based on a pre-seed investment and intensive mentoring provided to cohorts of startups (a boot camp) ending with a "demo day" for investors, the model has diversified with its rapid expansion. Its main added value is to combine different services or functions that entrepreneurs need, thus reducing the transaction costs to access these resources. Seed accelerator programmes also enable VC funds to identify future investment opportunities. Because of the positive effects they can have, seed accelerator programmes have attracted the attention of policy makers. However, so far, only seed accelerators in dense ecosystems like Silicon Valley or London have developed a profitable business model and publicly sponsored programmes often struggle to become financially sustainable[69]. Much like for GVC, studies on seed accelerators find mixte results about their effectiveness to achieve their objectives and highlight that it highly depends on design characteristics and contextual factors[70]. In addition, the model seems to work better for startups with low experimentation costs than for capital intensive science-based ventures.

Hence, the main point here is that over relying on a narrow set of popular policy instruments would actually lead to ignore an important fact about innovation. That is, innovation is not the product of individual innovators or individual firms, but the outcome of multiple and complex interactions involving multiple stakeholders[71]. Therefore, a supportive "system of

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[67] Mazzucato M., "Innovation, the State and Patient Capital", 2016, in: Jacobs M., Mazzucato M., *Rethink Capitalism: Economics and Policy for Sustainable and Inclusive Growth*, Wiley-Blackwell, Chapter 6, p. 98-118

[68] Hochberg Y. V., "Accelerating Entrepreneurs and Ecosystems: The Seed Accelerator Model", Innovation Policy and the Economy, 16, 2016

[69] Pauwels C, Clarysse B., Wright M., van Hove J., "Understanding a New Generation Incubation Model: The Accelerator", Technovation, 50-51, 2016, p. 13-24

[70] Seitz N., Burrati M., Lehmann E. E., Kurle J., A "Meta-Analysis Toward the Effectiveness of Startup Accelerators, The Journal of Technology Transfer", 51, 2026, p. 373-413

[71] Freeman C., "The 'National System of Innovation' in historical perspective", Cambridge Journal of Economics,19(1), 1995, p. 5-24

innovation"[72] matters as much as the direct support provided to startups through GVC or a dedicated seed accelerator programme. Of course, this has important implications for our initial question. It means that future EU funding programs cannot foster thriving startup and scaleup ecosystems by only focusing on a narrow and targeted set of initiatives. On their own, these initiatives are just part of a broader system of innovation that shapes the conditions under which innovators connect and share knowledge. Needless to say, their outcomes are necessarily contingent. As a result, it would be essential for the implementation of EU funding programmes to consider funding the development of innovation ecosystems – taken in a broad sense – and not just some of its specific components. This requires more analytical work and coordination but is a core condition for a more effective innovation policy.

B. Accepting the implications of an ambitious innovation policy

In the previous section, I have highlighted a few examples of initiatives, which didn't lead to the intended outcomes. Yes, it is possible that some EU funding programmes will support R&I projects that do not deliver, or startups that will ultimately go bankrupt. In fact, this is inherent to innovation policy. Therefore, developing startup and scaleup ecosystems will inevitably mean accepting some failures along the way. Although it may not always be politically easy, the important thing is not to make a big deal of them and to learn from mistakes where possible. As it would be a sign that the programmes are not really supporting innovation, it is the absence of failure that should be worrying. Not the opposite! After all, as mentioned above, innovation is a highly uncertain process involving information asymmetries and elements of serendipity. So, failures are a normal part of it. In this regard, the outcome of state led programmes is often less determined by the ability to "pick winners" than to "cut losses short once mistakes have been made"[73]. DARPA again is a good example to support this claim. Over the years serval challenges couldn't be fulfilled and companies went bankrupt. However, DARPA uses these failures to learn and readapt its strategy. As a result, new technologies emerged or progressed. Of course, this should not be an excuse for implementation issues such as ones mentioned before. DARPA's risk-taking approach supported the creation of the internet, while the Saudi Public Investment Fund didn't bring major breakthroughs. Accepting failures is different from accepting bad implementation.

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[72] Lundvall B. A., *National Systems of Innovation: Toward a Theory of Innovation and Interactive Learning, Pinter Publishers*, London, 1992

[73] Rodrik D., "Industrial Policy for the Twenty-First Century", KSG Faculty Research Working Paper Series RWP04-047, 2004

This has important implications for the way EU funding programmes will be assessed and evaluated. As mentioned before, little information is currently available about the support provided to startups and scaleups under the current MFF. Future assessments and programme evaluations could take a closer look. However, this would require adopting a holistic approach going beyond the introduction of simple quantitative indicators at programme level, measuring, for instance, the number of startups supported or their failure rate. Indeed, knowing the number of startups participating in a programme doesn't say much about innovation, while a low failure rate may be the result of low risk taking. Worse, this type of indicators can even encourage risk aversion. So, on their own, some indicator can be misleading. As part of a more sophisticated and holistic assessment process, they may be informative[74].

There is another major aspect of innovation that should be considered with respect to our initial question. That is, the concentration of innovation activities. Indeed, despite of modern communication and transportation technologies, the competitive advantages provided by geographical proximity remain central to innovation activities[75]. This is particularly evident in places such as Silicon Valley, the Greater Boston area, East London Tech City or Paris-Saclay. In fact, this type of innovation hubs[76], located in major urban areas, concentrate a very large share of the global innovation output[77]. These are also the sort of places where startups emerge or choose to set up. Indeed, innovation hubs concentrate the necessary specialised resources and expertise[78]. These are place where researchers, inventors, entrepreneurs, venture capitalists and other stakeholders can interact, where infrastructures and facilities are available, and where public policies are supportive. For startup founders, these palaces provide an incredible network density, labs, office spaces, business accelerator programmes, professional services, and even startup dedicated events such as pitch days, hackathon or startup week ends[79].

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[74] This conclusion is based on both, the author's personal observations, gained through extensive work with various indicators relating to R&I policy, and the constructive criticism made by the literature on New Public Management. See in particular: Smith P., "On the Unintended Consequences of Publishing Performance Data in the Public Sector," International Journal of Public Administration 18(2–3), 1995, p. 277-310 and Van Thiel S., Leeuw F. L., "The Performance Paradox in the Public Sector," Public Performance & Management Review 25(3), 2002, p. 267-281

[75] Porter M. E., "Clusters and the New Economics of Competition." Harvard Business Review 76, no. 6, 1998, p. 77-90

[76] Innovation hubs are known by various terms to highlight specific aspects, for instance "science parks", "innovation clusters", "innovation districts", or "local innovation ecosystems".

[77] Balland P. A., Jara-Figueroa C., Petralia S. G., Steijn M. P. A., Rigby D. L. Hidalgo C. A., "Complex Economic Activities Concentrate in Large Cities", Nature Human Behaviour, 4, 2020, p. 248-254

[78] Budden P., Murray F., *Accelerating Innovation: Competitive Advantage through Ecosystem Engagement*, The MIT Press, 2025

[79] Stam E., "Entrepreneurial Ecosystems and Regional Policy: A Sympathetic Critique", European Planning Studies, 23(9), 2015, p. 1759-1769

The concentration of activities may pose a political challenge. Indeed, developing startup and scaleup ecosystems can easily be perceived as a policy characterized by concentrated benefits and diffuse costs[80]. Such policies may encounter more resistance and criticism, despite of a general positive benefit for society. This also highlights the importance of complementary policies to share the benefits of innovation and manage technological and economic change.

Conclusion

Harnessing the MFF 2028-2034 to support the development of European startup and scaleup ecosystems is possible. After a brief presentation of the main existing supporting schemes and the main rationale for doing so, this paper has set out some ideas to this end.

Many innovations are the result of startups that are committed to bringing emerging technologies to market. Now, without public investments creating these technological opportunities and supporting their commercialisation, they would never materialize. This is why several instruments already support startups and more largely R&I at European level. This support is certainly not perfect, but it has contributed to the emergence of a growing startup and scaleup ecosystem in the EU.

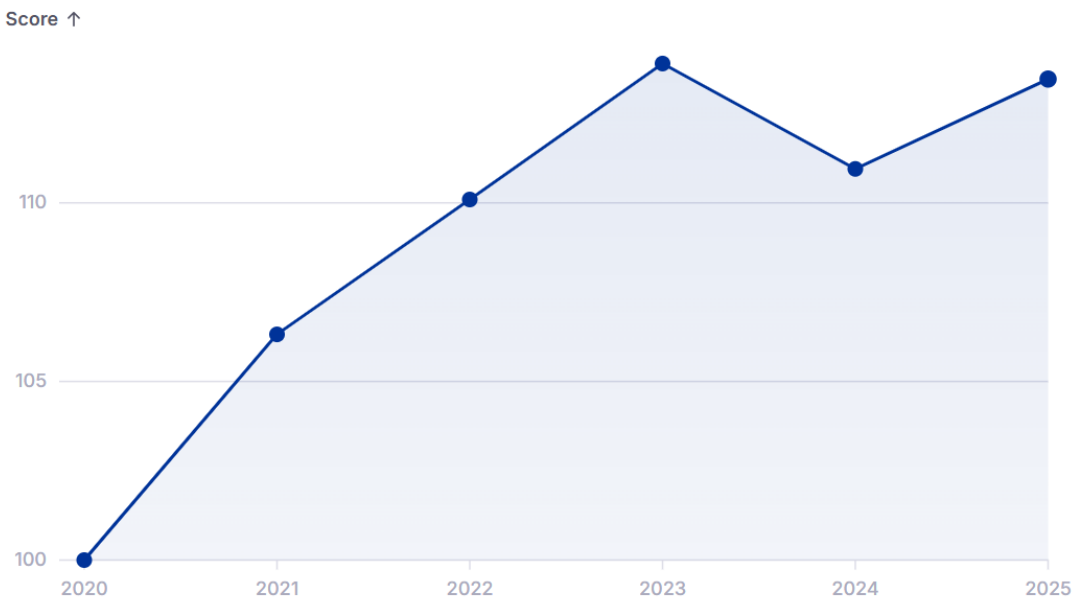

Figure 5: Startup and Scaleup performance of the EU over time (Source: European Startup and Scaleup Scoreboard 2026)

[80] Wilson J. Q., *Bureaucracy*, New York, Basic Book, 1989, p.76-78

Can we do even better? I have suggested that we probably can. Collaborative projects implemented by EU funding programmes of the MFF 2028-2034 could pay more attention to be inclusive for startups and scaleups. This would not simply provide access to public funds to young companies needing resources to innovate, but also to enrich consortia with partners working differently.

To support the development of European startup and scaleup ecosystems, I have also highlighted the importance of creating technological and market opportunities. Here, it would be worth exploring possibilities to ensure more exploratory research activities. This would create more technological opportunities for startups and better fit their own development model.

In the third part of this paper, I have invited the reader to maintain a critical perspective when it comes to approaches that are too narrowly focused. At first glance, this might seem to be the right approach, but without the right conditions, there is a great chance that this would end in disappointment. On the contrary, ensure to fund ecosystems is usually a more appropriate approach.

Finally, I tried to highlight some important implications related to innovation policy in general but that do apply to our topic. First, failures are inherent to innovation policy. An innovation policy trying to “pick winners” is unlikely to succeed. Then, innovation activities are geographically concentrated. This fact cannot be ignored and political tact in necessary to deal with it. This opens another interesting question for the future: How to ensure relevant complementary policies enabling the diffusion of innovation and its benefits?

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