



Do something great

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From Scale to Purpose? The EU's support for startups in the global race for tech dominance

With the global race for tech dominance and digital sovereignty set to intensify, we look at what the European Union is doing to strengthen its fledgling but ambitious startup sector. We find that despite bold and proactive new steps, the creation of European unicorns will probably require bigger thinking than the EU can currently muster. Europe's true strength, however, could lie in channeling the forces of technology strategically to help solve the social and environmental challenges that lie ahead.

Introduction

The race for global technological dominance has long left the world of business and entered the political fray, as decision-makers recognize the long-term strategic relevance of global tech companies, whose products and services impact our lives with unprecedented immediacy. As both the process and fruits of technological innovation become increasingly political – a development captured under the elusive term “digital sovereignty”¹ – new technology made in Europe

has arguably made enormous strides over the last 15 years, challenging the US's hitherto unquestioned position of global dominance. While the American big-tech success stories that capture the public imagination – Facebook, Apple, Microsoft and Google among many others - faced no significant European competition a decade ago, a growing number of European companies are now seeking to assert themselves on the global tech-map. This, in turn, has encouraged political leaders across Europe to become more ambitious when it comes to channeling the

¹ For a discussion of digital sovereignty as a European public good, see *Digital Sovereignty*, Vision Europe, Bertelsmann Stiftung, June 2020.

creative energy of entrepreneurs towards strategic aims, reinforcing Europe's trend of geopolitical self-assertion with respect to the US and China.

Against this backdrop, and with an eye to the scaled potential of a joint European approach, EU policy-makers have over the last few years markedly stepped up their efforts to boost the European startup sector, with a view to tapping the creative resources within the world's most developed – and most interlinked – economies. Yet straddled between the market-led American and the state-centric Chinese approach to fostering their tech-markets, Europe finds itself in a paradoxical position. While the process of European economic integration offers the prospect of a single market that should be able to compete globally, the European startup industry – from where disruptive tech is most likely to enter the market – appears underdeveloped compared to its global competitors. While the precise state of national ecosystems varies from country to country, startup industry associations have joined forces in lamenting two overarching problems that are common across Europe: attracting and retaining human talent and tapping into large-scale growth capital. Progress on these matters is almost universally acknowledged in expert circles as a prerequisite to turning groundbreaking ideas from universities and private sector laboratories into publicly-listed companies, which in turn can drive growth, create jobs and, what's more, might help to solve the problems of our time.

Indeed, a closer look at the reasoning behind European policy-makers' new tech rhetoric suggests that such ambitions are powered not just by a sense of unease regarding dependency on powerful American and Chinese companies, or by the perennial need for economic growth and jobs, but increasingly by the realization that disruptive innovation is required to solve the long-term social and environmental challenges faced by Europe and beyond. Such "purpose-driven" approaches to innovation are in line with broader – and

increasingly strident – calls emanating from various civil society initiatives to include "mission" or "impact"-oriented outlooks systematically in both public and private-sector activities; in practice, this means that objectives are clearly stated and results objectively measured.² This perspective is gaining ground in policy circles, at least rhetorically: virtually all EU-initiatives in support of startups and indeed innovation as a whole are branded politically as cornerstones to achieving the Green Deal or, more broadly, the United Nations' Sustainable Development Goals (SDGs), which the EU supports. The COVID-19 pandemic has intensified this focus, with funds strategically channeled into the biotech-sector to create a vaccine being the most obvious example of such a "purpose-driven" approach to fostering innovation.

Interestingly, BioNtech, recently credited with developing a vaccine, is a case in hand for the challenges set out above. Initially a German startup, BioNtech is now a multi-billion dollar business and listed not in Europe but on the American technology stock exchange Nasdaq; indeed, in 2020 alone, three additional German biotech companies followed suit – largely, according to industry experts, due to a lack of interest, expertise and appetite for risk on the part of European investors. These circumstances have a direct impact on Europe's global standing, notably with respect to its competitiveness, employment, tax base and indeed the growth of its innovation ecosystem. BioNtech's early European backers ponder that the dependency on US investors is a growing problem for Europe's tech industry – in this case, the field of biotech – and call for fundamental changes, in particular regarding the creation of truly European cross-border capital markets.³

So if Europe wants to assert its digital sovereignty, while at the same time channeling innovation strategically towards achieving mission-oriented objectives, how does the EU's support for its startup sector measure up against these aims? In

² For an in-depth assessment focused on Germany, see *Innovation for Transformation – Fostering Innovation to address societal challenges. Good practices in mission-oriented innovation strategies and their implementation*, Bertelsmann Stiftung and Fraunhofer Institute for Systems and Innovation Research ISI (forthcoming in 2021).

³ Interview with BionTech-Investor Strüngmann: *In Deutschland hätten wir Null Chancen gehabt (In Germany we would have had no chance)*. Handelsblatt, 5.12.2019 (German only).

this Policy Brief, we assess current and planned activities against the background of the bigger global picture and the EU's own strategic aims. The next section discusses Europe's perceived innovation deficit before looking at the potential of startups to alleviate the problem; it then looks at their needs as expressed by their industry associations. The subsequent section presents the central and current initiatives formulated and implemented at EU-level to support startups, singling out those focused on policy and funding. The final section assesses them before providing concluding comments. Overall, we find an increasingly strategic and proactive approach on the part of the European Commission, which has engaged intensively with the tech community to improve its support. At the same time, a persistent gap relating to late-stage funding for successful European startups risks rendering support for early-stage tech innovation obsolete, unless the EU thinks and acts on a grander scale when it comes to meaningful finance. That said, Europe can take an alternative route, playing to its true strength by linking the power of innovation to purpose-orientated objectives, thus setting norms to make the best, rather than the most, of technology made in Europe.

Europe's innovation deficit, and the role and needs of its tech startups

Innovation is universally acknowledged as a key prerequisite for economies to remain competitive, drive growth and create jobs. And at first glance, Europe as an innovator seems to be doing well. Going by the annual Global Innovation Index, for instance, European countries are certainly competitive in terms of innovation capabilities: within the group of high-income countries, five of the top ten positions are filled by EU member states.⁴ Similarly, about half of the high-income countries, which perform better than expected

given their level of economic development, are EU member states. The index is derived using a range of indicators covering, among others, institutions, infrastructure (capturing the general business environment and state of a country's development), human capital and research (as inputs into the innovation process), and patents (as outputs derived from the innovation process).

However, viewed solely by output-focused indicators, such as patent applications, a less rosy picture emerges. For example, despite offering a strong environment for innovation, Germany – Europe's most active country in terms of international patent applications – made only seven percent of all global applications, a similar proportion to South Korea's and markedly lower than the shares of China (22 percent), the United States (21 percent) and Japan (20 percent).⁵ A similar picture emerges at European level: only two EU member states made it into the top five countries applying for European patents in 2019, with the United States (1st), Japan (3rd) and China (4th) making more than twice as many applications (78,000) than Germany (2nd) and France (5th) combined (37,000).⁶

This suggests that an enabling environment, for example in terms of institutions or infrastructure, is a necessary but insufficient condition for actual innovation activity. This picture is repeated at the corporate level, with US companies dominating the list of global innovation leaders. Reflecting patent activity, Germany is home to most of the European innovators.⁷ This innovation deficit at European level is accentuated by vast differences across EU member states: in 2019 the two top applicant countries (Germany and France) made as many European applications as all other EU member states (including the UK) combined.⁸ Yet taken as a whole, Europe as a space for innovation lags behind key competitors, notably South Korea, Canada and Japan.⁹

⁴ *Global Innovation Index 2020 - Who will finance innovation?* World Intellectual Property Organisation, 2020.

⁵ *International patent applications by origin*, World Intellectual Organisation, 2020.

⁶ *European patent index 2019*, European Patent Office, 2020.

⁷ *The Most Innovative Companies 2020: The Serial Innovation Imperative*, Boston Consulting Group, 2020.

⁸ International patent applications by origin, World Intellectual Organisation, 2020.

⁹ European Innovation Scoreboard 2019. Quoted in *Innovation for Transformation – Fostering Innovation to address societal challenges. Good practices in mission-oriented innovation strategies and their implementation*, Bertelsmann Stiftung and Fraunhofer, forthcoming in 2021, p. 12.

The number of patent applications, of course, tells us little about the type of innovation involved.¹⁰ Recent research suggests that Europe does relatively well in those types of innovations which optimize existing structures, processes and products, with Germany particularly strong in this area.¹¹ But it does less well when it comes to disruptive innovation, that is, ones that help create new markets and as such play a key role in establishing new industries, technologies or standards.¹² Europe's scope for shaping the future – technologically as much as culturally in the global information age – will ultimately depend on its ability to generate precisely this type of disruptive innovation. This deficit is well recognised. The Joint European Disruptive Initiative (JEDI), for instance, a private-sector initiative backed by thousands of international technology businesses, aims at closing the gap between Europe and global leaders through so-called “Tech Grand Challenges”. JEDI reckons that setting goals and challenges without being prescriptive about how to achieve them – an approach pioneered by DARPA, the US Defense Department's innovation unit – could work successfully in Europe too. Most recently, JEDI has used this mission-oriented approach to foster research and innovation on Covid-19.¹³

Needs of European startups: Tap into large-scale funding and retain talent

If bringing disruptive innovation to the market is what Europe needs, the startup sector is an obvious place to look to. Technically micro-SMEs (small to medium sized enterprises) – that is, businesses employing less than ten people with a turnover or balance sheet of less than €2m¹⁴ – startups are best understood as companies founded by individual – or a small group of – entrepreneurs, focused on developing a new type of service or product, usually involving technology, for which the founders believe there is demand. A distinguishing feature of startups, as opposed to other SMEs, is that they usually aim

to grow rapidly. Starting out with high costs and limited revenue, then, requires them to look for a quick injection of capital from a variety of sources, notably venture capital (VC).

Box 1: Startup funding needs from start to exit

Depending on their state of evolution, startups have very different funding needs and generally distinct sources to meet these. For example, at the very earliest or seed phase of development a startup might fund its activities by exhausting personal savings, maxing out credit cards or asking friends and family. Bank loans are also common. In some cases, equity capital in the form of angel and venture capital might also come into play. As startups enter the so-called early phase and start to grow, they generally rely more and more on formal sources of funding such as equity capital or loans. During both these phases startups are generally cashflow negative.

In the third ‘growth’ phase, startups often turn cashflow positive. Funding sources continue to include equity capital and loans, in some cases complemented by mezzanine funding. The final ‘exit’ stage is when early funders cash in on their initial investment. This can happen when there is a management buy-out or the business goes public and gets listed on a stock exchange. See Chart 1.

A so-called “seed round” is usually \$1-4m; the next round, termed “series A”, is usually \$4-15m. “Series B” is \$15-40m and “series C” \$40-100m. A “mega-round” is \$100-250m and a “mega-round plus” is more than \$250m.

The last decade has seen an explosion of startups across Europe; driving this boom is most obviously the fact that the basic building blocks of a tech company (internet access, cloud-computing, basic coding) are ever readily available, making lean business models easier

¹⁰ Indeed, recent research suggests that the balance of power in innovation is shifting to East Asia. See *World class patents in cutting-edge technologies. The innovation Power of East Asia, North America and Europe*, Bertelsmann Stiftung, 2020.

¹¹ See footnote 2 for a more detailed discussion.

¹² *What is Disruptive Innovation? Twenty years after the introduction of the theory, we revisit what it does—and*

doesn't—explain. C.M Christensen et al., Harvard Business Review, December 2015.

¹³ *Meet the JEDI fighting Covid...and for Europe's tech future* at <https://sifted.eu/articles/jedi-innovators/> (June 2020).

¹⁴ https://ec.europa.eu/growth/smes/sme-definition_en.

The evolution of a startup: funding sources through the four phases



Chart 1

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and enabling entrepreneurs to engage in a series of experiments as opposed to risking everything on one big idea. That said, while startups are commonly associated with success stories such as Google, Amazon or Facebook – so-called unicorns, that is, startup companies worth more than \$1bn – most of them fail. Crucially for our purposes, most of the success stories appear to be American. What then, does the European startup sector look like compared to those of its competitors?

Again, the picture is superficially positive. With innovation capabilities in Europe seen in good shape, much the same can be said of its entrepreneurship ecosystems, which have made considerable strides in recent years. The Global Entrepreneurship Index, for instance, ranked ten European countries among its top fifteen in 2019, valuing in particular the European strength of process innovation.¹⁵ Top of the index, however, is the United States – and a look at the funding environment, especially for risk capital, arguably helps to explain why. While US startups have received \$1.2trn in VC investment since 1995, the figure for Europe, at \$200bn, is six times lower. The combined value of VC-backed companies in the US is 14 times higher (\$10trn v \$700bn), with

American startups accounting for more than 10% of American jobs – compared to no more than 1% in Europe.¹⁶

That said, Europe seems to be catching up: Since the middle of the last decade the size of the European VC-market has grown – from 4% of the global market in 2004 to 15% by 2020. Since 2015, European VCs have raised record amounts of new funds – from €6.6bn in 2015 to almost €13bn in 2020. A remarkable 38% of global seed stage capital (see Box 1) is raised by European startups, with some commentators estimating that these already need at least three times more capital than they are able to raise even today. Looking at the other end of the growth spectrum, Europe's top five VC backed companies are today worth only 2.5 times less than the top five US companies (\$170bn v \$419bn). The crucial figure, however, is this: while Europe's startups raise more than a third of global seed capital, the funding raised by scaleups declines sharply to only 9% of so-called "mega-rounds plus" compared to 50% in the US, and almost 40% in Asia.¹⁷ The figures point to a broad conclusion: Europe is producing good ideas as well as good startups; the challenge lies in scaling them via large volumes of risk-capital.

¹⁵ <https://thegedi.org/global-entrepreneurship-and-development-index/>.

¹⁶ Dealsource.com, presented at the *Not Optional* Conference, 29-30th October 2020 organized by Index Ventures and Slush.

¹⁷ Dealsource.com, presented at the *Not Optional* Conference, 29-30th October 2020.

Chart 2 illustrates this gap. It shows the variation in venture capital investment in terms of national GDP across a number of EU member states, which, for example, is about ten times bigger in Finland than in Greece. The chart also shows the clear gap between even a high performing EU country on this metric and the US. As a share of GDP, US VC investment is about six times bigger than in Finland and eleven times bigger than in Germany. It is noteworthy that the gap is particularly wide for later stage investment where the US spends about ten times more (as a share of GDP) than even the best performing European countries (and Finland is the only European country in which later stage funding exceeds start-up/early-stage funding).

Unsurprisingly, then, the issue of funding is central in the most recent demands formulated by European startup associations, restated succinctly in light of the COVID-19 pandemic and – for the first time – aimed directly at European policy-makers. Regarding investment and finance, associations call for a “multi-tier plan to unleash private funding, especially the VC sector”, and for an “increase in public funding”; regarding the crucial issue of late-stage funding, they recommend that the EU create “ a tech buy-out

fund to accelerate direct and indirect shareholdings in strategic sectors for Europe (health, cybersecurity, Artificial Intelligence (AI), quantum computing, blockchain, etc.)”¹⁸ While finance and investment are central to a functioning startup ecosystem, industry associations also point to another Europe-specific problem, the recruitment and retention of human talent. The central bone of contention relates to employee ownership structures - that is, giving staff the option to acquire a slice of the startup they are working for, a crucial form of remuneration in the absence of the steady salary packages offered by more established companies. Current rules on so-called employee stock option plans (ESOPs) vary considerably across the EU – “patchy, inconsistent and often punitive”, according to a recent industry initiative, which, in turn, risks “put[ting] our startups at a major disadvantage to their peers in Silicon Valley and elsewhere, with whom we’re competing for the best designers, developers, product managers, and more.”¹⁹ Moreover, pointing to the fact that half of AI jobs in the US are held by non-Americans, industry associations have called upon the EU to create a “special visa allowing non-EU citizens to come to a given EU country and then be able to work in another, with

European and US VC financing by stage

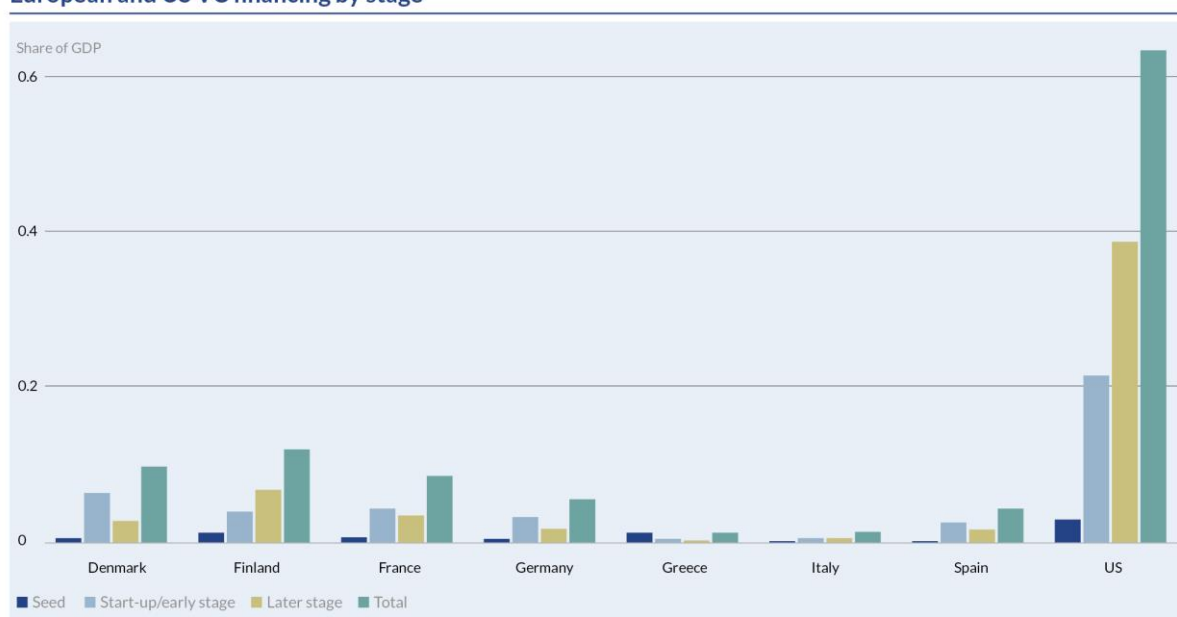


Chart 2

Source: OECD Entrepreneurship Financing Database at https://stats.oecd.org/Index.aspx?DataSetCode=VC_INVEST#.

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¹⁸ *Startups' recommendations for the post-Covid-19 economic recovery*, Allied for Startups/France Digitale/European Startup Network, July 2020.

¹⁹ Letter from 500 Startup CEOs addressed to European policy makers, presented at the *Not Optional* conference, 29-30th October 2020.

the same visa.” Such a scheme exists in Estonia, with Portugal also praised by the industry for its new “e-residency” proposal, aimed at “digital nomads”, which allows for the creation of a company online while at the same time gaining access to public and private services in Portugal.²⁰ In fact, Estonia’s “e-residency” grants said “nomads” a form of citizenship, permitting access to government services such as banking, company formation, processing, payment as well as taxation. Such pioneering policies in parts go well beyond the EU’s existing Blue Card scheme, under which an EU visa is granted for skilled workers who meet certain conditions. In Estonia alone, for instance, 73.000 “e-residencies” have been granted since the start of the programme in 2014, compared to around 144.000 Blue Cards in the entire EU.

The EU’s central initiatives to support European tech startups

Addressing demands and recommendations towards the EU as opposed to national authorities is a fairly new development and unsurprisingly so. Startups operate at arm’s length from EU institutions, with key support structures – from accelerators via grants to early-stage equity financing – to be found largely at the national level.²¹ With industry bodies increasingly training their focus on Europe, what precise support structures are in place at the level of the EU? And what direction of travel can be gleaned as the EU plans for the next decade?

Broadly, three targeted initiatives can be identified (see Table 1). First, the European Commission’s *Startup Europe* initiative, created back in 2013, addresses networking and policy challenges of startups. Second, the newly created *European*

Innovation Council (EIC), is set to deliver grant and equity funding directly to startups, while at the same time looking to stimulate European VC markets. And third, the Commission’s newly designed *InvestEU* programme aims to attract large-scale private sector finance by offering public guarantees. We look at these initiatives in more detail, before assessing them in light of their potential to help European techs achieve European aims.

Startup Europe – connecting European ecosystems and sharing best practice on member-state level policy

The European Commission’s main policy-oriented, non-financial support structure is the *Startup Europe* initiative, focused on connecting European startup ecosystems while at the same time pushing for policy change. The initiative was launched in 2013 and was revamped early in 2020 as part of the new EU industrial strategy, which in turn propels a twin digital-green transition among Europe’s SMEs.²² *Startup Europe* is designed to recognise the specific needs of startups as opposed to other SMEs, particularly regarding their ambitious growth aims. Its stated aim is to “connect high tech startups, scaleups, investors, accelerators, corporate networks, universities and the media.”²³ In practice, this means funding programmes that lead to collaboration between European startup ecosystems – for instance the recently completed *Startup Europe Partnership*.²⁴ With a budget of around €10m in 2020-21 the Commission is seeking to bring about “one European startup community rather than individual hubs”.²⁵

Regarding policy, the most prominent feature of *Startup Europe* was launched in March 2020: The *Startup Europe Nations Standard* is a set of best practices in EU countries for building growth-

²⁰ For details of the schemes see <https://startupestonia.ee/visa> and <https://startuportugal.com/> respectively.

²¹ In Germany, for instance, with respect to funding, these are mainly grant programmes from the federal government; equity co-investment schemes such as the *High Tech Gründer Fonds (HTGF)*; debt co-investing programmes offered by the public promotional bank KfW or fund-of-fund structures such as the *KfW Capital*. Other EU member states – such as Sweden - offer regulatory incentives, such as tax

credits on research and development (R&D) and investor tax relief.

²² For details on the Industrial Strategy, see https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-industrial-strategy_en.

²³ For more details on Startup Europe, see <https://ec.europa.eu/digital-single-market/en/startup-europe>.

²⁴ For more details see <https://startupeuropepartnership.eu/>.

²⁵ Interview conducted with the European Commission, 26.10.20.

friendly innovation ecosystems across Europe. By fully adopting these, member states can then consider themselves officially a *Startup Nation* (a popular industry-specific term most commonly associated with the Israeli success story in the field of tech). The *Startup Europe Nation Standard* focuses explicitly on policies that are implemented at member state level.

According to the Commission's Digital Innovation unit, which runs the programme, the measures compiled so far revolve largely around reforming stock-option-based remuneration schemes, creating designated visa schemes to attract non-EU talent and increasing diversity, specifically by attracting more female founders – thus largely mirroring startup demands described above.²⁶ While the consultation process is yet to be finalized, the Commission plans to have this set of best practices formally acknowledged by the European Council. The next step, according to the Commission, would be to systematically monitor levels of implementation across the EU.²⁷

European Innovation Council – direct equity investments and grants

On the funding side, the most recent initiative put forward by the Commission is the creation of the

European Innovation Council, designed (as part of the Horizon Europe programme) to become Europe's "new home for deep tech research and innovation" and, notably, a new investment agency for European tech startups. Formerly known as the SME-instrument, a grant-making body for European SMEs, the EIC will – among other types of support – provide direct equity investments into high-risk, but potentially game-changing innovations. This stated ambition is the result of a two-year pilot phase, centered around the *Accelerator Programme*, which supported startups in the pre-seed, seed and early-stage phases. The pilot prioritized startups in capital-intensive sectors, such as clean energy, advanced engineering, life sciences, digital, space, climate action and future mobility. It focused in particular on "deeptech", defined as innovation featuring "intense R&D content with interactions between distinct scientific domains and requiring significant levels of patient capital given the high risk involved" - risks which are, in turn "offset by a very high gain potential."²⁸ According to the Commission, the final phase of the pilot attracted record numbers of applicants from startups and SMEs active in technology-intensive sectors, with a small percentage now set to receive blended finance – that is, grants combined with equity – of up to €17.5m in total.²⁹

Key structures and aspects of the EU's startup initiatives

	Startup Europe	Horizon Europe	InvestEU
Main players	Commission, startup community and Member States	European Innovation Council (EIC)	European Investment Fund (EIF), National Promotional Banks
Purpose	Addresses policy and barriers to startups and scaleups, connects ecosystems	Provides blended finance (equity + grants) directly to startups	Uses EU funds as guarantees to leverage private-sector investment for SMEs, incl. startups
Budget (2021–27)	Approx. €75m	Approx. €10bn	€38bn (guarantees, aimed at leveraging a further €630bn in private capital)
Main programmes	Startup Nations Standard	EIC Accelerator	Sustainable infrastructure
	Startup Europe One Stop Shop	EIC Pathfinder	Research, innovation and digitization
	Innovation Radar	Fast-track to innovation	Small and Medium-sized Businesses
	Digital Innovation and Scaleup initiative	EIC Prizes	Social Investment and Skills
			Strategic European investment

Table 1

²⁶ Interview conducted with European Commission, 26.10.20.

²⁷ Interview as above. Further schemes connected to the Startup Europe initiative are the *Start Up Europe One Stop Shop*, the *Innovation Radar* and the Digital Innovation and Scaleup Initiative (DISC).

²⁸ EIC Accelerator Fund – Investment Guidelines, September 2019.

²⁹ https://ec.europa.eu/info/news/highest-demand-ever-eic-accelerator-pilot-more-4200-proposals-requesting-over-eu15-billion-2020-oct-09_en.

In addition to the new approach of providing equity, the EIC's pilot phase also included a *Pathfinder* programme, which supported teams within the science community with grants up to €4m in early stage-tech development to transform high-risk, high-impact research into novel technologies; by the end of 2020, almost €200m will have been invested in around 60 companies – with more than a quarter of successful projects linked to the European Green Deal. Examples include projects that convert waste heat into electricity or produce edible robots that deliver emergency nutrition.³⁰ The pilot also included a Fast Track to Innovation (FTI) scheme for mature innovative technologies, concepts and business models which are close to market - designed for consortia of industry partners. Finally, the EIC piloted one-off cash prizes worth between €5m and €10m for designated problem-solving, aiming to distribute €40m in total before the end of 2020. Examples include the design of a low-cost method of launching satellites into orbit and designing cheap batteries for electric vehicles.

As a result of the pilot, the Commission will allocate €10bn to the EIC for the period 2021-27, which in turn hopes to crowd-in a further €30-50bn in private investment. This will make the EIC a permanent fixture of Horizon Europe, the EU's projected €81.4bn Research and Development programme for the period 2021-27.³¹

The InvestEU programme

In addition to non-financial support mechanisms and direct blended finance, the Commission is set to launch a newly designed flagship investment support programme named *InvestEU*, which will succeed the Investment Plan for Europe under the previous MFF, known commonly as the *Juncker Plan*. *InvestEU* is in essence a €26.2bn guarantee system, aimed at European SMEs and other types of entities at large, through which the Commission hopes to crowd-in a further €370bn of private investment for European companies. While overall demand-driven, *InvestEU* operates under four specific policy windows – sustainable infrastructure (€9.9bn); research, innovation and

digitization (€6.6bn); small and medium-sized businesses (€6.9bn); as well as social investment and skills (€2.8bn).). The Commission proposed a fifth and new “strategic investment window”, to promote strategic autonomy in key sectors, which would have contained the highest level of funding of all policy windows; following the meeting of the EU Council in December 2020, it was instead agreed that each of the policy windows may support beneficiaries whose activities are of strategic importance to the Union, in particular in view of the green and digital transitions, enhanced resilience and strengthening strategic value chains.

Funds will be deployed through implementing partners, with the European Investment Bank Group (EIB) expected to manage three quarters of all guarantees in a privileged role. As a novelty, *InvestEU* is open a broader range of implementing partners, such as the European Bank for Reconstruction and Development as well as national promotional banks, with a view to expanding the pool of expertise when it comes to deploying capital across Europe strategically. It is these implementing partners that provide funding – or further guarantees – to financial intermediaries in the market, such as banks, provided that they operate within the defined policy windows. Final recipients of the funds are mainly SMEs, but also public-sector entities or not-for-profit organisations.

Wider initiatives

These targeted initiatives are complemented by further EU-wide developments that are not aimed specifically at startups or fostering innovation but are part of the long-standing process of European integration and thus play an important role in fostering a European innovation ecosystem. The most prominent initiative is arguably the *Capital Markets Union (CMU)*, launched by the previous European Commission after the experiences of the Eurozone crisis. While the initial motivation was to reduce the real economy's dependence on bank lending in the future, its potential usefulness for startups, scale-ups and innovation overall was

³⁰ https://ec.europa.eu/info/news/european-innovation-council-invests-eu191-million-58-game-changing-technologies-2020-oct-29_en.

³¹ https://ec.europa.eu/commission/presscorner/detail/en/IP_20_2345

recognised and promoted soon afterwards. The *High-level Forum on CMU*, for example, has argued that startups need access to different funding sources to finance growth and innovation but that the fragmented European capital markets make it difficult for them to access potential – in particular larger – investors.³² This appears especially relevant for startups in member states without deep and diverse domestic capital markets. This would be the case in many of the smaller member states and those that joined in the 2000s but will also apply to a number of the larger member states. It can thus be expected that a completed CMU would help to close the late-stage funding gap discussed above and provide a level playing field for startups regardless of their origins within the EU. The European Commission relaunched the CMU project in September 2020, arguing that developing the EU's capital markets and ensuring access to financing would support the economic recovery from the COVID-19 crisis.

Assessment: Digital sovereignty and a purpose-driven approach to innovation

The European Union is a global player when it comes to innovation at the research and development level and is increasingly getting better at shifting ideas from laboratories into markets via promising tech startups. Bringing these companies to scale remains a challenge though. The need to retain, in addition to nurturing, the most promising European startups is thrown up sharply by concerns over digital sovereignty, while the COVID-19 pandemic has provided a boost for progressive, purpose-oriented frameworks for innovation. To what extent, then, do the initiatives and measures taken and adopted at EU level to support European tech startups contribute to these twin aims of “digital sovereignty” and a “mission- and impact driven” approach towards innovation?

Digital sovereignty: Bold steps but bigger thinking required

As far as the creation of a favourable policy environment for tech startups is concerned, the Commission's *Startup Europe* initiative represents valuable steps in the right direction, signaling an increasingly strategic approach to fostering favourable conditions for European startups by acknowledging their specific needs and putting pressure on national governments to conform with European best practice. The Commission is arguably making the most of its powers – in this case largely convening powers – following intensive consultations with the European tech community. The obvious drawback lies in the EU's formal limitations when it comes to legislating in key policy areas, notably taxation, for which powers remain firmly in the hands of member states. That said, while the prospects for legislative proposals on the part of the Commission are slim, recent policy shifts at member state level – the German government, for instance, intends to implement new laws on ESOP by the end of 2020 – can be viewed as success stories linked to the Commission's efforts. The effect of the planned publication of further best practice recommendations at the European Council remains to be seen. European policy-makers and industry associations agree that as for recruiting talent, Europe is looking at a window of opportunity, with recruitment and retention schemes in the US, Europe's largest competitor for global talent, at an all-time low. The incoming Portuguese EU Presidency has signaled to the startup community that it will make the *Startup Nation Standard* an area of priority in the first half of 2021, aiming to produce a Joint Manifesto centering around European norms and values in the field of tech as part of the Lisbon Declaration anticipated for mid-2021.³³

With respect to EU funding initiatives, the newly created EIC, with its specific focus on direct equity investments, can be considered groundbreaking in the short term but raises questions regarding the long-term effectiveness of such a use of public funding. Regarding the first point, a strategy that is designed to crowd-in private capital is plausible and sorely needed from the perspectives of a substantial number of European startups in an

³² Final report of the High Level Forum on the Capital Markets Union - A new vision for Europe's capital markets, June 2020.

³³ André de Aragão Azevedo, Portuguese Secretary of State for the Digital Transition, at the *Not Optional* Conference, 29-30th October 2020.

early growth-stage. The Commission's Directorate General Research and Innovation (DGRTD), which is responsible for setting up the new fund, argues rather convincingly, and in line with the analysis set out above, that the problem is not the quality of innovation coming out of Europe, nor the number of European startups which set out to bring ideas to the market. Rather, the problem is the survival rate of startups, with too many failing to become commercially viable. With its new equity programme, the EIC wants to "grow the pipeline, thus enabling more tech startups to attract VC-funding in larger funding series, rather than funding VCs, that in turn chase the same, small number of startups".³⁴ In addition to taking on the initial risk at the start of the scale-up process, the EIC also stresses its aim of offering qualitative support, notably by connecting companies and ecosystems. If successful – the fund will have the capacity to inject €3.5-4bn into the market by 2027, with the EIC attracting a further €30-50bn in further investments³⁵ – this would most likely contribute to reducing the five-fold gap in VC funding between Europe and the US.

With regard to long-term effectiveness, however, the lack of large-scale financing in Europe means that the probability of European-bred companies being bought by – most likely – American VCs will remain as high as ever. The EIC itself, when confronted with this problem, is realistic that more is required: "What Europe did not provide in the past and now has to do, is to put institutional money into the market alongside funds. The EIC is creating a sustained pipeline of innovative companies in Europe and we hope VC funds will want to co-invest with the EIC."³⁶ It also points out that the financial products under InvestEU will provide a possibility of follow-up support to EIC beneficiaries.³⁷

Such a stimulation of European VC markets, however, is unlikely to solve the problem. One of the key differences between the US and

European capital markets is the fact that institutional investors play a much larger role in providing VC in the former than in the latter: more than half of the nearly \$160bn fund raising in the US between 2012-16 came from institutional investors compared with just over a quarter of the nearly \$50bn raised in Europe over the same period.³⁸ Pension funds make up a large part of these institutional investors, reflecting the fact that funded pensions play a much larger part in retirement income in the US compared to Europe where pensions are generally paid as welfare spending on a pay-as-you-go (i.e., tax/contribution financed) basis. These profound structural differences make it difficult for Europe to generate the private-sector savings required to support significant VC activities.

Even the achievement of more modest goals, such as a degree of control over strategically relevant tech industries, would require much larger funding structures at European level – for instance, the creation of a European Sovereign Wealth Fund. Indeed, plans for such an entity are reported to circulate within the European Commission under the title "European Future Fund", with a view to investing European public money into sectors deemed strategically important. The problem such a fund would solve, according to internal Commission reports, is that "non-EU companies with unprecedented financial means [have] the potential to obliterate the existing innovation dynamic and industrial position of EU industry in certain sectors". Europe, according to this analysis, "has no such companies. This presents a risk to growth, jobs and to Europe's influence in key strategic sectors".³⁹ EU member states, however, do not have a tradition of Sovereign Wealth funds – with Norway (a non-EU member) the only European country with such a structure on any meaningful scale. Tellingly, the idea of such a fund at the European level does not feature in the 2021-27 MFF.

³⁴ Representative DG Research and Innovation, European Innovation Council, at the *Not Optional* conference, 29-30th October 2020.

³⁵ Interview (by e-mail) with the European Commission, 23.11.20.

³⁶ Interview (by e-mail) with the European Commission, 23.11.20.

³⁷ Interview (by e-mail) with the European Commission, 7.1.21.

³⁸ *Participation of Institutional Investors in European Venture Capital*, Axon, 2019.

³⁹ 'EU floats plan for 100bn sovereign wealth fund', *Financial Times*, 23 August 2019.

The measures set out by the EU, then, while groundbreaking in many ways, are in their present state unlikely to reinforce any ambitions the bloc may have with regard to asserting something resembling digital sovereignty. In the words of one seasoned practitioner: “It’s like setting up a Michelin Star Restaurant, but instead of developing a full menu, you focus only on high-quality starters. Don’t be surprised if other restaurants buy your starters and you end up a caterer.”⁴⁰

That said, in the absence of a SWF, alternative solutions are circulating among European institutions.⁴¹ Most interestingly, the EIF is currently testing the water for “a Pan-European Investment Platform for European Digital Champions” to invest in growth stage VC firms which in turn invest in the pre- and post-IPO segments of European tech startups. In line with the analysis above, the EIF suggests that Europe’s “weaknesses in its investment ecosystem lead to losses of assets and technologies at an alarming rate”, and argues that “the solutions require capital and intelligence at a scale beyond the volumes that can be mobilised from individual [European] countries”. Accordingly, the new platform would “[link] national and European actors investing with a strategic intent”, and as a result “establish the basic building-blocks of a technology sovereignty community”. Interestingly for our purposes, the EIF also suggests this approach “could connect national initiatives to European policy priorities and instruments and facilitate the establishment of common objectives”, such as the Commission’s digital agenda.

In concrete terms, the EIF would design both a *fund-of-fund* to complement national funding programs (such as the French Plan Tibi or the German Future’s Fund) and a *direct investment platform*, with which Member States, through their National Promotional Institutions (NPI), “invest directly in the capital of European technology champions and pool their shareholdings in a pan-

European strategic participation fund that maintains strategic ownerships in technology companies and sectors that are decisive for Europe’s global competitiveness”. Whether this approach - designed to not only bring in new volumes of capital but also to create a shared sense of ownership of technology champions across EU member states - can be implemented, will depend on negotiations with the Commission and member states starting in 2021.

Purpose-orientation: Progressive and possible – but raises deeper questions regarding public sector involvement and instruments

If – under current agreements - achieving digital sovereignty remains out of reach, is the EU using its powers to push innovation in the direction of strategic and mission-driven objectives? In other words, to what extent are EU measures in support of its tech community creating a framework for a progressive European tech innovation ecosystem that inspires both entrepreneurs and capital into ways of solving social and ecological problems?

With respect to *Startup Europe*, the Commission’s policy-oriented initiative, the extent to which mission-oriented policy-guidelines will be contained in the collection of best-practices remains to be seen. The same applies to the extent to which they will be highlighted at the European Council. Regarding the demand for a purpose-driven outlook on the ground, officials point to anecdotal evidence of a growing number of entrepreneurs active in the various networking schemes, “wanting to be part of the solution”.⁴² This is backed up by research at member state level suggesting that interest in solving societal problems constitutes an increasingly large motivational factor for new entrepreneurs.⁴³ There is, however, a lack of empirical evidence across Europe to assess the extent to which tech entrepreneurs regard social and ecological purpose as a genuinely compelling objective as opposed to being driven by purely commercial motives, and – crucially – the extent to which they would accept trade-offs – such as lower

⁴⁰ Interview conducted with a European institution, 4.11.20.

⁴¹ Non-paper, Investing with Strategic Intent, EIF, December 2020

⁴² Interview conducted with the European Commission, 26.10.20.

⁴³ See for instance: *Social Entrepreneurs in Deutschland – Raus aus der Nische*, KfW Research, Nr. 238, January 2019.

commercial prospects - that would invariably occur.

As regards the Commission's take on direct funding through the EIC, it is noteworthy that the pilot-phase explicitly adopted a "bottom-up" approach, whereby all subject areas and all types of innovation were officially eligible for its various support programmes; that said, the pilot experimented with top-down approaches for a portion of its calls, with startups required to state explicitly how their products and services would contribute to the Green Deal. As for the strategy of the fully-fledged EIC due to launch in January 2021, the Commission stresses that the EIC is "a bottom-up instrument, that can nevertheless adopt a top-down approach through its strategic challenges and in that sense will follow the approach of the recovery package and the Commission's priorities: the Green Deal and the digital strategy." In particular, the "EIC Accelerator will aim at funding transformative green innovations, which contribute to the goals enshrined in the European Green Deal strategy and the Recovery Plan for Europe."⁴⁴ Purpose-orientation, then, seems to have found its way into this new instrument, at least to an extent.

Turning to the indirect financial support structures, the structure of the *InvestEU* programme points to an increasingly mission-oriented focus. The Commission justified revamping the former *Juncker Plan* into a new flagship investment programme by arguing that "...[a]n enhanced *InvestEU* programme ... will be able to provide crucial support to companies and to ensure a strong focus of investors on the Union's medium- and long-term policy priorities, such as the European Green Deal and the digitalization transition and greater resilience."⁴⁵ Also, under *InvestEU*, a dedicated Social Investment and Skills Window will continue to focus on microfinance and social enterprises, social impact

and innovation. This window is set to be backed with guarantees of up to €3.6bn and is of particular interest to the Social Impact Investing community, whose industry associations are already advising impact focused intermediaries on how to access guarantees.⁴⁶ An example of the *InvestEU* programme leading to new funding opportunities for European startups – albeit under the existing scheme - is the European Social Innovation and Impact Fund (ESIIF), created in 2019. Acting as an implementing partner, the European Investment Fund (EIF) signed a guarantee agreement with ESIIF, which in turn provided €20m of privately raised capital in the form of subordinated loans to around 60 social enterprises across the EU. The fund is managed by a financial intermediary and is structured so as to be able to invest alongside other direct investors such as business angels or foundations, or – given the focus on social entrepreneurship – social impact funds.⁴⁷ *InvestEU*'s new strategic investment window, while designed more broadly for SMEs, focusses more than ever on strategic industries producing new technologies, with startups acknowledged as a key driver in this process.⁴⁸

Concluding comments: Where next for the EU?

The EU's purpose-driven rhetoric at the political level finds itself partly, if not fully, reflected at the level of technical implementation. This mixed picture highlights the fact that any shift towards a purpose-orientated framework for innovation raises bigger questions regarding public sector involvement in directing market activities. These questions concern matters of both principle and technique.

The EU's new equity-investment programme is an example of progressive, proactive behaviour on the part of the public sector, pushing markets in

⁴⁴ Interview (by e-mail) with the European Commission, 23.11.20.

⁴⁵ https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_947.

⁴⁶ See for instance guidance produced by the *European Venture Philanthropy Association (EVPA)*: <https://evpa.eu.com/policy/the-eu-budget/investeu>.

⁴⁷ The fund was initiated by the Financing Agency for Social Entrepreneurship (FASE), a German organisation that

supports impact ventures in attracting investment, notably from impact investors. ESIIF was set up during the previous MFF (2014-2020) under the Employment and Social Innovation (EaSI) programme, that is set to continue under *InvestEU*. See <https://esiif.de/en/> for more information.

⁴⁸ See for instance the presentation of the fifth policy window by Commissioner Thierry Breton, eudebates.tv, 20.5.2020.

strategic, purpose-oriented directions; a push towards giving EU institutions genuine budgetary powers, as demonstrated by the funding structure of the Recovery and Resilience Fund, would certainly strengthen such an approach. This, however, remains highly controversial and a genuine strategic push towards purpose would require a paradigm shift. This would mean that the dimensions of mission- and impact-orientation become built-in features at all levels of both policy-formation as well as when it comes to financial assessment and reporting frameworks.

The tools required for such a paradigm shift are increasingly in place though. Regarding policy, the Commission itself has sought advice from leading independent experts on mission-led policy design in the context of *Horizon Europe*, for instance. Here, the latest input focused on public sector capabilities (such as public risk-taking or evaluation methods that go beyond cost-benefit analysis), finance mechanisms (including crowding-in finance along the whole innovation chain) and, interestingly, citizen engagement, by means of co-creation and co-implementation of ideas.⁴⁹ Indeed, mission-oriented approaches will, according to the Commission, be a key feature of Horizon Europe's wider support for innovation as from 2021.⁵⁰

Regarding financial assessment and reporting standards, the most interesting breakthrough could be in the field of accounting. "Impact-weighted accounts", for instance, constitute an advanced technique for shedding light on the entire performance of companies. These enable investors to apply traditional methods of analysis to a broader set of comparable data which, crucially, includes a company's ability to achieve its stated mission. "Net impact", then, can be determined and quantified with respect to broader goals, such as those of the EU's Green Deal or the UN's Sustainable Development Goals.⁵¹

The EU's approach towards lending support to its tech startups, then, is broadly in line with a more

general shift towards transparency and purpose, a shift that is occurring as part of the wider debate on sustainability. This, of course, throws up new questions regarding the funding that will be required for such a shift to occur. Ideas for a paradigm shift in global financing systems designed to achieve global missions, such as the SDGs, exist; indeed, niche areas within global capital markets, such as impact investing, are experimenting with purely purpose-oriented finance, but there remains a long way to go for such thinking and acting to become mainstream.

In the meantime, from an EU perspective, pushing for purpose rather than searching for scale in developing the European startup ecosystem makes a virtue out of necessity by playing to Europe's comparative advantage, as visions of digital sovereignty via stronger tech companies remain elusive. Tools and instruments for a mission- and impact-oriented paradigm shift in both policy and finance are increasingly available. For it to occur in full remains a matter of political will.

⁴⁹ *Governing Missions: Governing Missions in the European Union*, Independent Expert Report, Mariana Mazzucato, July 2019.

⁵⁰ https://ec.europa.eu/info/horizon-europe/missions-horizon-europe_en.

⁵¹ For more detail, see *The Impact Management Project*, a practitioner forum of over 2000 organisations to build consensus on how to measure, manage and report impacts on sustainability <https://impactmanagementproject.com/>.

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