GROWING EUROPE'S NEXT UNICORNS

DigitalFuture for Europe

THE DIGITAL FUTURE FOR EUROPE COALITION

DIGITAL FUTURE FOR EUROPE

We are a group of over 100 associations, start-ups, scale-ups, and successful tech businesses from Europe's digital frontrunner nations. Our goal is to bring European policy-makers and start-ups and innovative businesses together, so that European tech policy can be led by the expertise of those coming from the most successful digital economies within the EU.

DigitalFuture for Europe

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Introduction: Europe's booming startup ecosystem

Technology has been one of the great economic success stories of the 21st century, with European businesses playing a crucial role. In 2021, a record $100B of capital was invested in tech, 98 new unicorns were created and the number of European "decacorns" (valued at over $10bn) doubled to 26.[1] In the same year, Europe produced more tech IPOs than even the US.[2] All the signs are looking positive, and the EU's bold Digital Compass commitments to the Digital Decade provide even more reason to be optimistic about the future.

However, we must still acknowledge the ongoing issues that hinder the growth of Europe's emerging start-ups and their ability to compete internationally. Above all, European start-ups face serious problems when it comes to scaling. European start-ups have consistently lower total success rates and show less progress through all series rounds when compared to US and Indian start-ups in aggregate.[3] While Europe generates 36% of all formally funded startups, it creates only 14% of the world's unicorns.[4] These difficulties have led the European Investment Bank to conclude that there is a serious "scaleup gap" in Europe that needs to be addressed.[5]

Our research suggests that if the EU achieves its goal of doubling the number of unicorns by 2030, this could increase the size of the EU economy by €160 bn in Gross Value Added (GVA). This underlines the argument that growing the tech sector is good for the economy at large.

1 https://soet-pdf.s3.eu-west-2.amazonaws.com/State_of_European_Tech_2021.pdf
2 https://soet-pdf.s3.eu-west-2.amazonaws.com/State_of_European_Tech_2021.pdf
3 https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/europes-start-up-ecosystem-heating-up-but-still-facing-challenges
4 https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/europes-start-up-ecosystem-heating-up-but-still-facing-challenges
5 https://www.eib.org/attachments/efs/from_starting_to_scaling_en.pdf

Methodology

Our assumption that the number of unicorns by 2030, could increase the size of the EU economy by €160 bn in Gross Value Added (GVA) is based on:

- CB Insight's data on the valuation of current European unicorns
- An assumed 20 to 1 price to earnings ratio for new unicorns
- OECD data on the ratio between average profitability and Gross Value Added

This report by the Digital Future for Europe Coalition – home to some of Europe's most innovative and exciting startups – therefore seeks to refocus attention on the priority areas for ensuring Europe's tech sector can flourish. Taking inspiration from the EU's digital frontrunner nations, we have identified five areas for pan-European improvement, including:

Regulatory alignment

Access to finance

Access to talent

Shared innovation

Growing the market

We would emphasise that the golden thread running through these recommendations is the need for Europe to lean into its competitive edge – maximising the potential of its heritage industries and unified marketplace. We cannot expect the digital innovations of the next decade to be built from scratch, and it is clear that Europe's next unicorns will not be built by reinventing the wheel. We must resist the instinct to imitate innovations which have already come and gone. Instead, this report seeks to demonstrate how the European Union, the world's largest trading bloc, can better exploit its existing resources to become a true global leader.

Recommendations

Regulatory Alignment

1. Harmonise the implementation of legislation across Member States
2. Ensure that Europe's standardisation strategy does not introduce new regulatory hurdles

Access to Finance

3. Promote tax reform to encourage re-investment
4. Boost investment across less digitally advanced Member States
5. Reform rules to allow for increased investment in venture capital

Access to Talent

6. Grow a diverse talent pipeline
7. Ensure Europe's Start-Ups can offer competitive incentives to top talent
8. Expand Europe's Start-Up Visa offering

Shared Innovation

9. Foster opportunities for corporate-startup partnerships
10. Champion cross-European policies to turbocharge startup growth

Growing the Market

11. Encourage widespread digital adoption of digital technologies and services
12. Promote free trade of digital technologies and seamless data flows

1 *Regulatory Alignment*

The urgent need to harmonise policy initiatives

The European Union is the world's largest trading bloc; but the benefits of operating a start-up within its borders can only be enjoyed to the degree that the continent's markets are harmonised.

Regulatory fragmentation comes with a big cost - 48% of investors in 2021 reported it to be a key challenge for future tech growth.[6] Until the differing regulatory systems in place across the EU's member states are integrated, companies will be unable to efficiently scale and European tech is unlikely to become world-leading.

The benefits of further harmonisation are massive. Research from the Code Institute indicates that a fully integrated Digital Single Market could contribute as much as €415 billion per year to our economy and create hundreds of thousands of new jobs.[7] Europe's businesses agree - two-thirds of companies in 2021 found that they would grow "much faster" if Europe's market were more aligned.[8]

What needs to be done?

1. Harmonise the implementation of upcoming digital legislation across Member States

2022 has been a very busy legislative year. We're seeing major once-in-a-generation regulatory initiatives pass into law, as the EU continues to establish itself as a worldwide regulatory powerhouse. From the Digital Services Act (DSA) and Digital Markets Act (DMA), to the upcoming Data Act, the EU is reshaping the rules of the digital world in a comprehensive way.

At such a critical stage in the continent's digital development, it is crucial that the implementation of these new laws furthers the completion of the single market, rather than fragmenting and fracturing it to an even greater degree.

Member States must cooperate to ensure that the implementation of the new legislation at both an EU and national level does not discourage start-ups from expanding into new markets, for fear of regulatory complexity or unfamiliarity. Without doing so, we risk further entrenching the continent's already serious scale-up gap.

6 https://2021.stateofeuropeantech.com/chapter/how-can-flywheel-spin-faster/article/stumbling-blocks-building-blocks/
7 https://codeinstitute.net/wp-content/uploads/2019/03/The-Digital-Skills-Crisis-Whitepaper.pdf
8 https://2021.stateofeuropeantech.com/chapter/how-can-flywheel-spin-faster/article/stumbling-blocks-building-blocks/

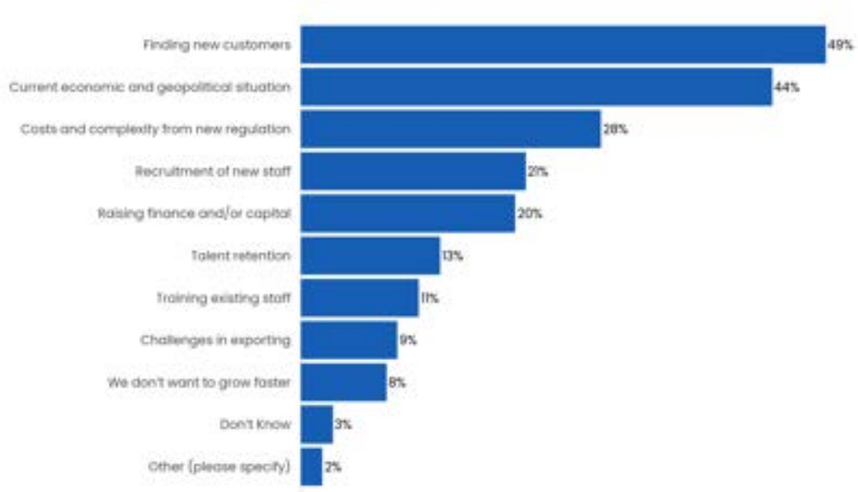
2. Ensure that Europe's standardisation strategy does not introduce unnecessary regulatory hurdles

Standardisation is without a doubt the key to completing an effective digital single market within the EU. Without standards, European companies struggle to guarantee the interoperability of their services and products.

However, it is equally clear that standards must exist in order to *further* innovation rather than hinder it. Standards are not an end in themselves, but must promote competitiveness and the free movement of goods and services in the internal market. For example, when it comes to the Data Act and upcoming legislation on AI, there is a risk that the ex-ante regulation imposes harmful and restrictive standards that stifle further growth rather than encourage it. This should be avoided at all costs.

Time and again, businesses have reported that complex regulation comes with a real cost to their success. In a poll of 7000 European businesses, the cost and complexity of new regulation was cited as the third largest constraint on growth - only the difficulty of finding new customers and the current global economic outlook ranked higher.

Which, if any, of the following do you think are likely to be the biggest constraint on your business growing faster? Please select up to three. (European Businesses)



When it comes to standardisation, therefore, care must be taken. As the Commission itself has acknowledged, the success of standardisation rests on the input of experts from across industry and civil society. We therefore urge policymakers to consult with all relevant stakeholders before adding further red-tape to the regulatory ecosystem.

2 *Access to Funding*

The lack of funding in Europe and its consequences

Time and again, a lack of funding is one of the single greatest obstacles to scaling in Europe. Research by the European Investment Bank (EIB) reveals a serious "scaleup gap" in Europe caused by a lack of readily available funding, especially in comparison to the US. According to the EIB, European start-ups attract 54% less funding nine years after foundation than their American counterparts. [9] Indeed, a recent poll confirmed that 46% of founders said the "funding limitations" were the "main regulatory hurdle" limiting the growth of startups and scaleups compared to other large markets like US and China.[10]

American VCs particularly outperform European investment in European firms when it comes to larger funding rounds. For rounds larger than $50m, US investors make up the highest share of investments, and more than half of all the money going into "megarounds" of more than €100m comes from foreign investors.[11] Any European company that wants to proceed to the next stage must, in effect, appeal to foreign capital. The consequence is that an increasing number of large European tech companies choose or are required to list in the US rather than in their home country.

Some progress is already being made. According to VC fund Atomico, 2020 was a record year for European investments, reaching $41bn in early December.[12] Nevertheless, European investment remains five times less than North America's $141bn for this year.[13]

Case Study: Overcoming investment barriers for deep-tech startups in Estonia

Estonia has more unicorns per capita than any other country in Europe, but a look at the stats shows that most Estonian start-ups are software based - no Estonian DeepTech startups has exceeded the magical billion mark and become a unicorn company.

In the eyes of Kadri Tammai, Head of StartUp Incubator at Tehnopol - Estonia's largest startup community - the reason for this is the chronic lack of ready funding when it comes to the deep-tech sector. The development and go-to-market cycles in DeepTech are much longer, technology risks so much higher and local private capital is investing in familiar fields - which excludes DeepTech.

Making progress here depends on raising awareness of the whole ecosystem, learning from the best examples in Europe and the US, and by developing clear and understandable models for university spin-offs and introducing Deep-Techs to investors in an easy-going way. If this is successful, more startups across Europe will be able to follow the recent example of Tehnopol-based GScan, a Deep-Tech cargo security startup which has just raised €1.4m to develop groundbreaking new 3D scanners which will improve cargo safety.

9 https://www.eib.org/attachments/efs/from_starting_to_scaling_en.pdf
10 https://2021.stateofeuropeantech.com/chapter/how-can-flywheel-spin-faster/article/stumbling-blocks-building-blocks/
11 https://sifted.eu/articles/european-unicorns-relocating-us/; https://content.sifted.eu/wp-content/uploads/2021/06/15162949/Scale-Up-Europe-Report.pdf
12 https://www.siliconrepublic.com/start-ups/tech-investment-europe-atomico
13 https://content.sifted.eu/wp-content/uploads/2021/06/15162949/Scale-Up-Europe-Report.pdf

What needs to be done?

If we are to reach the target of doubling the number of European unicorns by the end of the decade, and seriously compete with international investors, significantly more funding needs to be made available on the continent. This should, of course, take the form of further investment from government and the private sector; but we can also learn from innovative legislative and funding programmes spearheaded by Europe's digital frontrunners.

3. Promote tax reform to encourage re-investment

Entrepreneurs who achieve significant returns from their own successful startup ventures often reinvest in upcoming startups. In the US, this represents a powerful source of venture capital for start-ups to draw on, but in Europe many successful entrepreneurs are held back by legislation which heavily taxes profits made from equity investment.

Indeed, the UK is currently looking to expand both its Enterprise Investment Scheme and its Seed Enterprise Investment scheme, which together have netted over 47,000 companies a total £25.4bn in tax relief.[14] Member States across Europe should be looking to do the same, in order to free up vast flows of funding for cash-strapped startups.

A good example has been set by digital frontrunner Ireland, whose *Employment and Investment Incentive* provides investors with a tax relief on investments. Similarly, in Sweden, business angels investing as private individuals are allowed to deduct half of what they pay when acquiring shares in a startup, up to a maximum of SEK650,000 (~€75,500) per person per year.

4. Boost investment available to startups in less digitally advanced Member States

Europe's digital frontrunners invest on average 6.9% of GDP in ICT and IP every year, compared to 5% in the other Member States. It would require an additional €350 to €400 billion every year over the decade to bring the rest of the EU's investment up to the level of the most digitally advanced countries.[15]

The European Commission should therefore prioritise schemes that boost funding for start-ups in typically less advanced Member States, to ensure a more even spread of opportunity across the Union.

For example, InvestEU is an encouraging move towards adequate investment in start-ups across the continent. The scheme aims to mobilise more than €372 billion of public and private investment through an EU budget guarantee of €26.2 billion that backs the investment of implementing partners such as the EIB and other financial institutions. There is a welcome and wholly appropriate focus on access to and availability of finance primarily for startups.

14 https://www.bloomberg.com/news/articles/2022-05-03/u-k-looks-at-expanding-tax-breaks-for-investors-in-startups
15 https://op.europa.eu/en/publication-detail/-/publication/917c520f-fd56-11ea-b44f-01aa75ed71a1

5. Reform rules to allow increased investment in venture capital

Pension funds are some of the largest institutional investors in Europe, and have the potential to offer huge amounts of liquidity to help kickstart innovative companies. However, a mixture of cultural hesitancy and regulation across member states prevents widespread investment of pension funds into venture capital. Atomico's State of European Tech 2021 report found that, on average, pension funds are allocating 19x more capital to European buyout funds than to venture capital.[16]

Efforts should be made to reform prohibitive regulation, and to champion the benefits of this kind of investment across all Member states.

Best Practice Case Study: Government pension funds in Sweden

Sweden presents a good model of how pension funds can be encouraged to invest more in venture capital. In 2018 Sweden allowed private pension schemes to increase their share of alternative investments from 5% to 40% of the funds, and in 2019 four state pension funds (AP1, 2, 3, and 4) were permitted to increase the amount of their funds allocated to unlisted assets from 5% to as much as 40%.[17]

Another illustrative example is AP6 (the 6th Swedish National Pension Fund), which has the explicit remit of investing solely in unlisted assets. In 2020, AP6 reported their highest ever annual return of 20.4% on its investments - more than twice that of Sweden's other pension funds.[18]

16 https://2021.stateofeuropeantech.com/chapter/how-can-flywheel-spin-faster/article/stumbling-blocks-building-blocks/
17 https://sifted.eu/articles/pensions-invested-in-vc/
18 https://www.ipe.com/news/ap6-outshines-main-buffer-funds-with-204-annual-return/10051099.article

3 *Access to Talent*

Resolving the Digital Skills Crisis

As the economy has digitised there has been an explosion of full-time digital jobs offered across Europe. While European employment as a whole grew by a mere 0.4% from 2019-2021, European start-up employment grew by 19.4%, adding as many as 400,000 new roles in that period alone.[19]

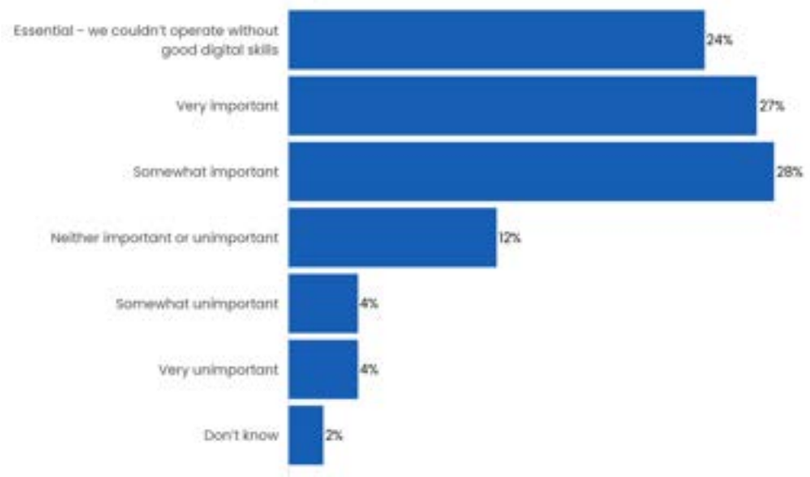
There are over a million more software developers in Europe than in the US, suggesting that the EU should be well equipped to keep pace with global leaders.[20] And there is further promise in the pipeline: Europe is home to 3 of the world's top 5 Computer Science programmes (Oxford, Cambridge and ETH in Zurich) and 31 of the top 100.[21]

Nevertheless, skills are still not keeping up with demand – 49% of founders in 2021 said it was harder to acquire new talent today than it was 12 months ago.[22] What's more, research by the European Commission has found that over 70% of businesses have said that "the lack of staff with adequate digital skills is an obstacle to investment."[23]

Even more worrying, according to European Parliament projections, in the absence of any further reforms of investment the proportion of adults with basic digital skills is only expected to reach around 64% by 2030. This is far short of the Digital Compass goal of achieving 80% by the end of the decade.[24]

In fact, businesses with no need for digital skills are becoming a very rare breed. A recent poll of 7000 businesses across Europe revealed that digital skills are important to the day to day running of 77% of all businesses, and they are unimportant to just 8%.

How important, if at all, are digital skills to the day to day running of your business? (European businesses)



19 https://2021.stateofeuropeantech.com/chapter/how-can-flywheel-spin-faster/article/stumbling-blocks-building-blocks/
20 https://www.ft.com/content/6fc9455a-75fc-4952-a4ff-203e5579aefa
21 https://www.ft.com/content/6fc9455a-75fc-4952-a4ff-203e5579aefa
22 https://2021.stateofeuropeantech.com/chapter/how-can-flywheel-spin-faster/article/stumbling-blocks-building-blocks/
23 https://digital-strategy.ec.europa.eu/en/policies/digital-skills-and-jobs
24 https://www.europarl.europa.eu/RegData/etudes/STUD/2021/695465/IPOL_STU(2021)695465_EN.pdf

What needs to be done?

In the long-term, it is evident that serious investment should be made in growing digital skills across the EU - with a focus on the education and training required to boost the tech workforce, a strong driver of wider economic growth.

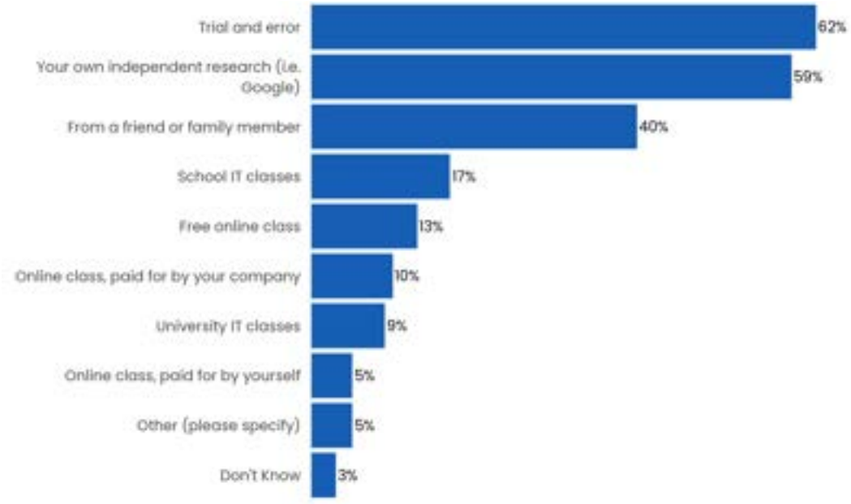
In the more immediate term, the EU must remove unnecessary regulatory barriers that impede access to top talent. Start-ups need to be empowered to effectively recruit from across the European Union, as well as drawing on a global talent pool.

6. Grow a diverse talent pipeline

Europe must address long-term supply issues if it is to tackle the talent bottleneck across its tech ecosystem. Existing projects such as the Digital Education Action Plan, the skills provisions within the Recovery and Resilience Facility, and Horizon Europe, are an important step forward - but more must be done to grow the educational offering in digital and tech from primary all the way through to tertiary education and beyond.

Most Europeans have had to teach themselves digital skills, and though we should celebrate this resourcefulness, it points to a failing of the mainstream education system in preparing citizens for the digital world.

Where did you learn the majority of your own digital skills? Please select all that apply. (General Public)



Future efforts must both broaden and diversify the talent pool. The Digital Economy and Society Index shows that every third person who works in Europe lacks basic digital skills, and only 1 in 6 ICT specialists are women.[25] If Europe's startup ecosystem is to flourish, its Member States must substantially expand their digital education offerings to bring in new viewpoints and expertise to rival the tech powerhouses of the US and China.

Greater partnerships between businesses, government and education institutes to deliver upskilling and reskilling opportunities to the population at large will play a key role in equipping EU citizens with the right skills to maximise the potential digital has to offer.

Above all, the Commission should encourage Member States to adopt Digital Skills as a core pillar of their national curriculums, starting from primary school. Only by embedding tech education within the earliest and most fundamental aspects of schooling can Europe hope to address the massive talent shortage it faces.

Abodoo: Using high-tech data mapping to draw on untapped diverse talent

Abodoo is a start-up with a simple mission: to use data mapping and matching to meet Europe's skill shortage by drawing on the untapped potential of diverse talent that lies outside of Europe's big cities. Evolution in connectivity infrastructure has enabled millions to work remotely, and Abodoo has built a system which recognises skills without bias against age, sex, nationality or ethnicity.

Abodoo was engaged by Gorey, a town in Wexford, Ireland to conduct talent mapping in order to identify the skills of the area and create a platform for remote workers across the country to register interest in relocating. Abodoo deployed Geonostics, its skills-first mapping technology to visualise industries, skills clusters, average earnings and education levels across the region. With this data, Abodoo successfully worked with Gorey to attract a large international technology employer to create jobs in the town that were both office-based and remote.

In the words of Tom Enright, CEO of Wexford County Council, "By having the real time data intelligence on skills and industries we can discover clusters, identify gaps and understand the demand for home and co-working post pandemic, putting us in a strong position to make the right strategic decisions to meet industry, education and people needs."

25 https://digital-strategy.ec.europa.eu/en/policies/digital-skills-and-jobs

7. Ensure European start-ups can offer competitive incentives to top talent.

Offering stock options in addition to a salary is a crucial tool by which cash-strapped start-ups can attract world-leading talent. However, regulation in several EU member states prevents start-ups from making use of this offering. In Germany, for example, offering stock options is almost entirely disincentivised by the fact that employees are taxed the moment they are granted stock, before they even receive any money in their account - although the German coalition government has promised to overhaul this.[26] As a result, Series C stage leadership teams in Europe own, on average, less than half of the stock options of their counterparts in the US.

When it comes to winning the war for skills in the midst of a global talent shortage, Europe cannot afford to be hamstrung by hasty regulation. Member states should enact legislation that follows in the path of leaders such as the Netherlands and Estonia – and, at the very least, employee taxation should be deferred to the point of sale of shares, so that employees are only taxed when they actually receive cash benefits from their stock options.

Best Practice Case Study: Estonia's Stock Option Scheme

Estonian companies can choose their own strike price, even a heavily discounted one, without creating any tax liability upon grant. Typically, companies in Estonia prohibit employees from exercising options for at least three years after grant, to avoid triggering tax liabilities. For employees, a flat rate income tax of 20pc then applies to the spread between strike price and sale price.

26 https://tytopr.com/why-european-startups-need-to-offer-stock-options/

8. Expand Europe's Start-Up Visa offering

Too often European start-ups are held back by inflexible and limited visa schemes that do not cater to their needs.

Coalition Case study - EasyGenerator

EasyGenerator is a SaaS online course creation platform founded in Rotterdam in 2014 with a worldwide audience. Recruiting has been the number one biggest challenge to the company since its founding.

Unable to find adequate talent in either of their offices in the Netherlands and Ukraine, EasyGenerator was compelled to openup a new office in Dubai, where they now employ almost 70 people – half of their total workforce.

Hiring new talent was particularly difficult in the Netherlands - though the company aims to hire a lot of young people whose talent can be developed on the job and grow into other roles, the salary requirements set by the Dutch Immigration Service conflict with starting roles.

If Europe is to lead in the innovation of the future, it must have access to the best global talent. The startup ecosystem would therefore significantly benefit from a pan-European start-up visa programme which combines the best of the existing start-up visas on offer in the continent.

Below is a list of some of the most promising start-up visas offered in the EU today.[27]

COUNTRY	REQUIREMENTS	VISA
Italy Startup Visa	At last 15% of costs must be R&D At least one third of the business's team must hold PhDs; alternatively, two thirds can hold master's degrees. Company must already hold IP. Must be less than 5 years old Less than €5m in annual turnover. At least €50 000 in equity or venture capital.	Live and work for a minimum of one year, with potential extension to 2 years.
French Tech Visa	Sponsor required At least €17,981 capital to support yourself required for first year	
Ireland Startup Entrepreneur Programme	Applicants must have an innovative business idea which will create a minimum 10 jobs and earn at least €1m in turnover within 3-4 years. Business must be younger than 5 years to qualify. Minimum €75 000 in capital.	Visa can be extended for up to three more years, after which you can apply for a long-term residency permit. Residency status granted after two years.
UK Start-Up Visa	Sponsored by either a UK higher education institution or a business organisation with a history of supporting UK entrepreneurs (eg accelerators or incubators). Capital requirement of only £945.	Two years permission to live and work and no opportunity to renew - have to apply for an Innovator Visa thereafter (which requires a minimum of a minimum of £50,000 in investment funds).
Startup Denmark Visa	Applicants must have their business idea approved by a dedicated panel of experts, and must be able to support themselves, requiring between 137,076 DKK (€18,423.70) and 319,236 DKK in savings depending on co-dependents. No sponsorship requirement.	Live and develop your business in Denmark for up to two years, with option to extend.[28]

Best Practice Case Study: Estonia's e-Residency programme

In 2015, Estonia launched an unprecedented new scheme: the e-Residency programme, a government-issued digital identity that allows e-Resident entrepreneurs from all over the world to start an EU-based company from anywhere.

As of January 2020, the programme had seen 63 000 people from 167 countries register in Estonia as e-residents of Estonia, establishing 10,100 companies - as many as 8% of all companies registered in the country.[29]

In 2019, e-Residents contributed 10.8m euros in direct taxes, and the cumulative profit for Estonia in those 5 years now exceeds €31m.

27 https://www.eurostartentreprises.com/en/business-advice/what-is-the-best-startup-visa-scheme-in-europe

28 https://www.eurostartentreprises.com/en/business-advice/what-is-the-best-startup-visa-scheme-in-europe

29 https://investinestonia.com/e-residency-the-success-story-of-building-a-digital-nation/

4 *Shared Innovation*

Maximising the value of European R&D

Research and Development (R&D) is a major driver of innovation across the European Union. Initiatives such as Horizon Europe offer new instruments to facilitate collaboration and fast-track the impact of research across the continent. This in turn promotes industry competitiveness and optimises investment impact within a strengthened European Research Area.

Member States spent around €311 billion on R&D in 2020, equating to 2.3% of GDP.[30] And it is important to understand that the business enterprise sector is the main sector for R&D expenditure in the EU - accounting for 66% of total R&D disbursed in that same year.[31] Indeed, it should come as no surprise the EU's thriving industries - most notably the automotive and pharmaceutical sectors - are leading the way when it comes to innovation.

Top 10 EU industrial sectors investing in R&D in 2020

Automobiles & Parts	€58,827m
Pharmaceuticals & Biotechnology	€31,351m
Technology Hardware & Equipment	€15,941m
Software & Computer Services	€10,333m
Electronic & Electrical Equipment	€9,564m
Industrial Engineering	€8,781m
Aerospace & Defence	€6,322m
Banks	€5,380m
Health Care Equipment & Services	€5,335m
Chemicals	€5,086m
Others	€27,180m

Source: The 2020 EU Industrial R&D Investment Scoreboard [32]

30 https://ec.europa.eu/eurostat/web/science-technology-innovation/data/database?node_code=rd

31 https://ec.europa.eu/eurostat/web/science-technology-innovation/data/database?node_code=rd

32 https://iri.jrc.ec.europa.eu/scoreboard/2020-eu-industrial-rd-investment-scoreboard

Nevertheless, calculations by the European Innovation Scoreboard 2021 suggest that South Korea, Canada, Australia, the United States and Japan all have a performance lead over the EU; and it is particularly striking how the EU falls behind when it comes to entrepreneurial activities. For example, the relative size of Australia's manufacturing industry is approximately a third of the EU's - yet Australia enjoys double the level of entrepreneurial activities in this sector.[33]

In short, there is huge potential to capitalise on the EU's heritage industries, but the EU is currently struggling to convert its knowledge economy into breakthrough innovations with the ability to scale.

Pan-European collaboration across heritage industries - Amadeus

Amadeus, the global airline reservation system formed in 1987, provides a useful example of Europe's unique strengths. Formed in collaboration across 4 countries with Air France, Iberia, Lufthansa and SAS, the company has grown to become a global provider for airlines, hotels and airports. The Amadeus of the future will likewise draw upon existing European expertise in specific markets such as medicine or finance to break new ground.

33 https://ec.europa.eu/info/research-and-innovation/statistics/performance-indicators/european-innovation-scoreboard_en

What needs to be done?

The EU27 has shown significant capacity for close working when it comes to R&D. However, the EU could and should better harness its cross-sector investments to support collaboration at all levels.

9. Foster opportunities for corporate-startup partnerships

Collaboration between established corporations and start-ups can help to facilitate access to finance, markets and customers. Moreover, research by the EIB suggests that these kinds of partnerships lead to start ups exhibiting higher degrees of innovation compared to startups backed by non-corporate investors.[34]

Policy makers should therefore facilitate match-making platforms that help European entrepreneurs to work with corporates and other partners. Match-making platforms encourage entrepreneurs to draw on leaders within the corporate world for their in-depth knowledge, and Member States and EU alike should seek to formalise mentoring structures so that more innovators can draw on the vast depth of industry expertise within Europe.

As an example, online hubs such as the Horizon Results Platform already help to provide EU-funded researchers with the credibility and visibility that they need to secure relationships with more established businesses. These such schemes should be promoted and championed for wider use.

Similarly, European policymakers should continue to explore and expand financial incentives for collaborations. For example, through tax advantages for corporations, or perhaps co-investment schemes with public funders.

10. Champion pan-European knowledge exchange to turbocharge startup growth

The digital transformation of the whole economy is key for Europe to remain competitive internationally, and yet the level of digitisation across the EU remains highly uneven. The EU should therefore expand initiatives that ensure strong collaboration, knowledge exchange and start up growth across all Member States.

As an example, the coalition welcomes the Commission's ambitious plans for European Digital Innovation Hubs. No company can innovate alone, and these Commission-led tech clusters around Europe offer a welcome means of facilitating joint working with a focus on growing expertise in AI, High Performance Computing, Cybersecurity, and Robotics.

If deployed successfully, the Hubs will help startups expand and tap into other markets, develop EU value chains, create new business opportunities for companies and help commercialise earlier innovation experiments and/or pilots. Improved collaboration between Member States will likely also help avoid unnecessary duplication of investment and give access to infrastructure at a lower cost.

34 https://www.eib.org/en/publications/from-starting-to-scaling

5 *Growing the market*

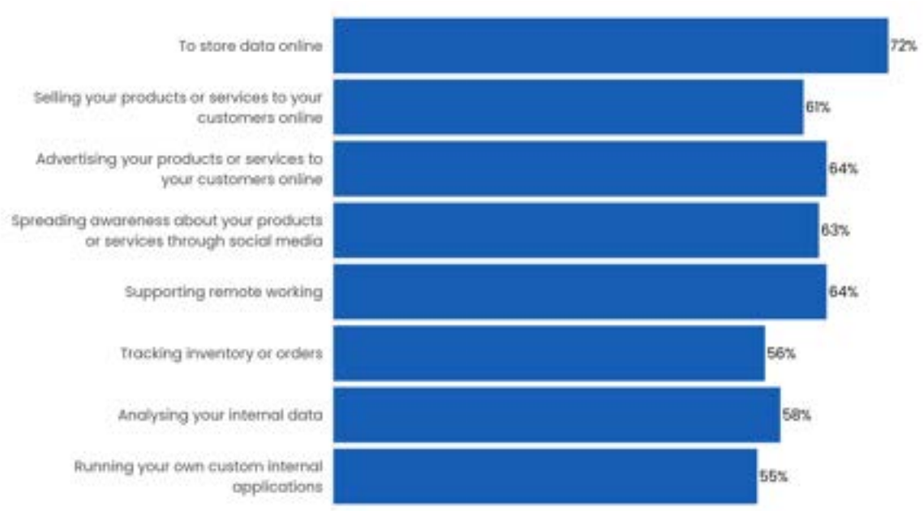
Growing the market

Digital connectivity is fairly mature in the EU - 59% of households can benefit from fixed very high capacity network (VHCN) connectivity, and 4G is ubiquitous with 5G now coming on stream. Similarly, smartphone penetration rates are high (78%) and EU consumers are confident e-commerce users.

However, digital adoption rates amongst businesses remain stubbornly low, with European businesses lagging behind the US. In 2020, 37% of European firms had still not adopted any advanced digital technology, compared with 27% in the US.[35] In some sectors the gulf is even wider - only 66% of manufacturing firms in the EU report having adopted at least one digital technology, compared to 78% in the US.[36]

There are still huge numbers of businesses in Europe that have not yet digitised fundamental operational processes. 44% use no online tools to track their inventory, and 36% do not use online advertising. There is clearly still enormous room for growth when it comes digital adoption by European businesses.

Does your business use online tools for the following purposes? (Senior decision makers at European businesses)



35 https://www.eib.org/en/press/all/2021-273-eib-corporate-digitalisation-index-2020-2021-most-eu-countries-are-trailing-the-united-states-in-digitalisation

36 https://voxeu.org/article/adoption-digital-technologies-firms-europe-and-us

In particular, it is small businesses - which form the backbone of Europe's economy - which are even less likely to be digitising than their larger counterparts. In the European Union. 60% of micro firms (five to nine employees) have not implemented any digital technologies at all.[37]

An unwanted side-effect of low adoption rates could mean that European startups and scaleups developing and selling innovative solutions for businesses (e.g SaaS products) may not feel they have a strong customer base within the EU. Digital adoption is therefore key for driving forward Europe's economy, and to growing the home market for forward-thinking new businesses.

Moreover, European startups should think internationally from day one. Selling to overseas markets can increase revenue and resilience, as well as opening up the possibilities for the creation of new products and services to respond to differing local needs. Member States should therefore support a more global approach by providing help and advice to cash-strapped startups seeking to breach linguistic, cultural and legal barriers. Trade agreements should also support innovative businesses HQ'd in the EU export their goods right across the globe, helping the EU maintain its competitive edge.

International from day one: iNUI Studio in South Korea

Founded in 2010, iNUI Studio develops Natural User Interface systems for businesses, such as large interactive screens that rely on gesture recognition technologies.

Thanks to the EU's 2011 Trade Agreement with South Korea, iNUI was able to expand into the massive Korean potential despite still only having 9 employees at the time. Co-Founder and CEO Olivier Raulot explains that "A small company like ours with a total of nine employees does not have the financial and human resources to ensure the management of heavy and burdensome administrative procedures."

By 2015, iNUI generated over a third of its total turnover in South Korea, demonstrating the immense utility of free trade to Europe's start-ups.

37 https://www.eib.org/en/press/all/2021-273-eib-corporate-digitalisation-index-2020-2021-most-eu-countries-are-trailing-the-united-states-in-digitalisation

What needs to be done?

11. Encourage widespread adoption of digital technologies and services

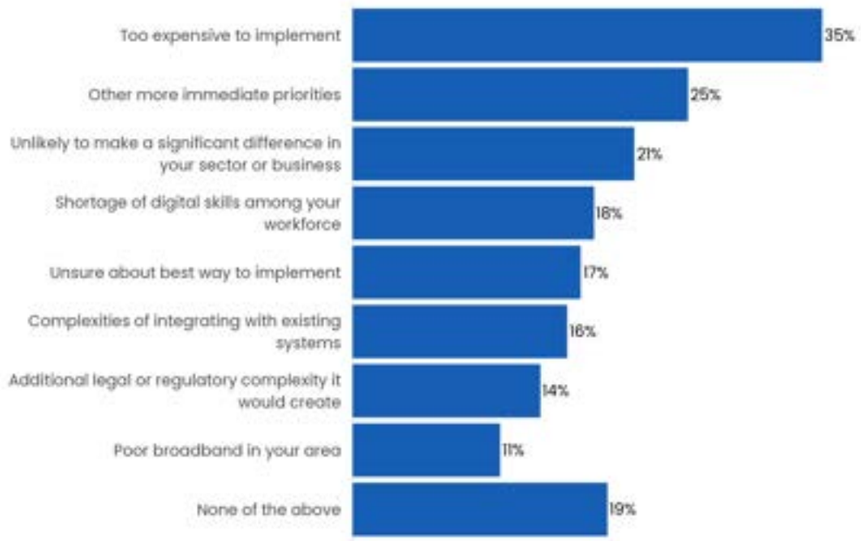
Europe's scale-up gap will not be fixed without growing the market.. Doing so means encouraging a more widespread adoption of digital technology across the board.

In the first instance, this means promoting digital adoption among Europe's SMEs. The technology is out there, and is ready to be used to optimise everything from supply chains to customer service. Encouraging more widespread adoption of basic digital tools and foundational technologies would unleash an explosion of growth across Europe's SMEs and grow a stronger marketplace for Europe's innovative startups and scale ups to sell into.

European companies must be encouraged to adopt the existing world-leading digital tools already on the market without restriction. If they are held back from doing so, efforts to grow and catch up with the digitised world of the 21st century will be nigh on impossible.

The major single obstacle to digital adoption amongst Europe's businesses is cost - with 35% of companies across the continent citing it as the most important barrier to the use of more digital technology. Encouragement from the Commission and Member States is essential if SMEs are to overcome this hurdle and adopt practices that will make them more efficient while growing the market in tech.

And which, if any, of the following are important barriers which explain why your company doesn't use more digital technology? Please select all that apply (European businesses)



At the same time, government bodies themselves must lead the way in adopting innovative procurement processes so that public sector procurement becomes a major driver of the digital economy. Public procurement accounts for over 14% of EU GDP, making government one of the biggest possible potential partners for Europe's budding startups. Even small-scale contracts with government can be a crucial source of reputation and endorsement.

The Commission efforts to improve procurement practices in order to foster the uptake of innovation, must be ramped up.

12. Promote free trade of digital technologies and seamless data flows

Digital is now a key element of trade negotiations reflecting the importance of digital technologies and data in a modern economy. The EU must continue to be a beacon of free trade working with like-minded partners to lower and remove barriers and create international standards and rules. Europe must resist protectionism and continue to champion bilateral and multilateral deals that will allow European companies to continue to access and compete on a global stage.

In particular, the push for free trade must incorporate and promote the introduction of seamless global data flows. As AI and data-based technology become increasingly significant over the coming decade, European companies cannot afford to be starved of data by complicated data transfer laws. Data exchange will be one of the major frontiers of free trade in the 21st century, and the Commission would do well to ensure that this too is an area in which Europe continues to be an exemplar of free trade within carefully authorised standards.

Conclusion

Build on Europe's Strengths

It is clear that Europe has significant potential as a global tech powerhouse, provided it leans into its existing strengths.

The continent has already played a central role in the history of the digital revolution, be it from the invention of the World Wide Web in CERN or the development of the GSM system in Finland. And when it comes to regulation, the EU has also proved itself a global leader. As demonstrated by the gold-standard General Data Protection Regulation (GDPR), European policies have the potential to shape international attitudes on legislation.

Now, in 2022, Europe should take advantage of its long heritage of innovation and properly realise its full potential. We should learn from how the likes of Klarna, Spotify, Adyen or Skype have reached unicorn status, and recognise that Europe's digital frontrunners already offer compelling examples which the rest of the continent would do well to follow. The next decade must see Europe build on its tech successes - growing its talent and funding pools further, so that its dynamic and truly competitive offering can flourish.

This digital transformation does not require a total upheaval of the European ecosystem. There is no need for a wholesale rebuilding of existing digital infrastructures, or for Europe's start-ups to mimic the existing tech of the day. Instead we believe that the most exciting and interesting future digital breakthroughs will likely take the form of industry-specific applications of new technologies. Europe's strong position in established industries such as automobiles, construction or pharmaceuticals will provide a crucial future customer base for prospective European B2B software unicorns.

It is by identifying and adopting appropriate best practice, truly innovative and inventive startups will flourish across the continent, and Europe's scale-up gap can finally be overcome.

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