CENTRE FOR EUROPEAN REFORM
LONDON ★ BRUSSELS ★ BERLIN

Insight

Europe has produced tech champions: Here is what they can teach us

by James Green, 27 May 2026

Despite the gloom about its place in the digital economy, Europe has produced tech leaders. Their experience should inform Europe's policies to support competitiveness, innovation and entrepreneurship.

It is popular to criticise the state of Europe's tech sector. The debate is often framed by Europe's lack of equivalents to US tech giants and their Chinese competitors, and its supposed preference for regulating over innovating. Europe also lacks a deep pool of private finance to support tech development and broader enterprise growth – a problem that the EU's efforts to establish a capital markets union are meant to address.

But despite the real challenges that innovative businesses in Europe face, companies like ASML, SAP, Booking.com, Spotify, Nokia and Ericsson illustrate that Europe has produced tech success stories. Beyond some better-known examples, leaders like financial services platform Adyen and travel software provider Amadeus are among the world's top 150 tech companies, based on market value. These companies have thrived, at least in part, because of their ability to incorporate new tech into their businesses and develop and scale innovative products. As European policy-makers consider steps to strengthen Europe's tech and broader business ecosystem, which is critical for both economic growth and security, they should look to these European companies – both old and new – to inform the path forward.

The European tech sector – whose activities extend from hardware manufacturing to digital communication and services, and increasingly overlap with other sectors like energy, defence, finance and health – is not starting from scratch. The sector is also showing signs of progress. Venture capital investment in European startups nearly quadrupled between 2015 and 2025, and there is now more tech talent flowing from the US to Europe than the other way round. A new generation of promising European tech firms has emerged in the last decade, from Helsing's work on drones and Vinted's digital marketplace, to Octopus Energy's management tech.

But Europe's tech successes remain too rare and too concentrated in niches. By market capitalisation, Europe's share of the global tech, media and telecom industry has dropped from 30 percent in 2000 to 7 per cent in 2024. The European Commission's innovation scoreboard also shows the bloc behind South Korea, Canada, US, China and Australia. It is more important than ever for the EU and its member-states to learn from their most innovative firms. Three lessons stand out.

Lesson 1: Europe's tech successes often benefit from openness to others' innovation and early tech adoption

When done well, remaining open to others' products and adopting new tech enables businesses to enhance their productivity and innovation.

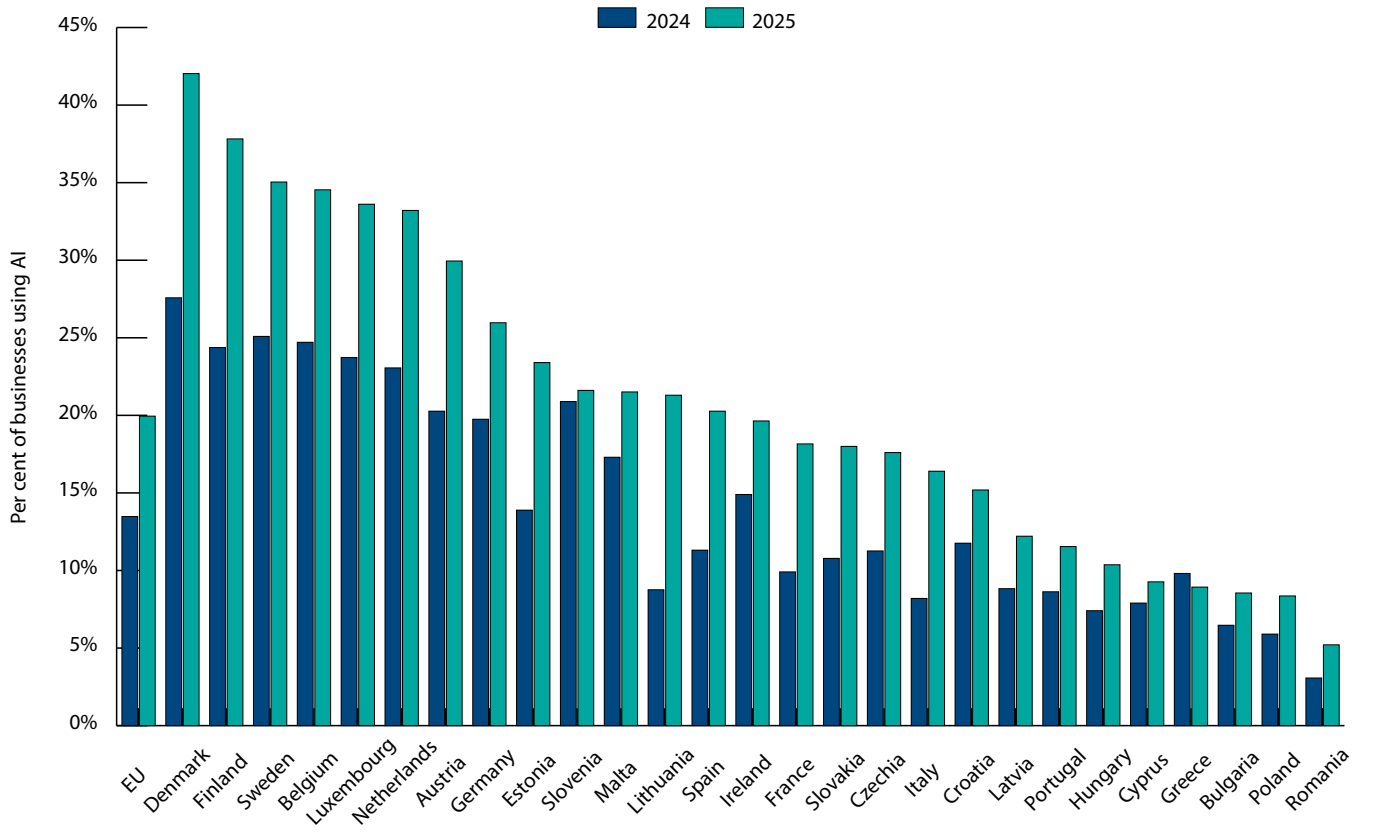
Take Dutch chip equipment maker ASML. In the 1990s and early 2000s, ASML was locked in competition with American and Japanese firms. It excelled and became one of Europe's most valuable companies in part because it harnessed other firms' specialised capabilities, while competitors like Nikon were slowed down by trying to develop the requisite tech in-house. Over the years, ASML built a renowned supply chain with numerous suppliers. This includes optics manufacturer Zeiss and laser-maker Trumpf (Germany), and light source provider Cymer (US), which ASML has since acquired. ASML's openness to these and other firms' innovation allowed it to access the highest quality parts and focus on creating the world's most complex machines.

Other European tech champions have benefited from this approach too. German business software provider SAP successfully transitioned to cloud computing, including through partnerships with US providers, which allowed it to serve its customers better and develop new AI tools. Lovable – a Swedish startup that mainly uses Anthropic's AI models to automate software and app development – has become one of the most valuable startups in Europe. A Bank for International Settlements working paper finds that AI adoption raised short-run labour productivity in European firms by around 4 per cent without reducing employment. The gains are larger if firms combine AI with investments in software and data, and employee training.

Nonetheless, the EU has recently emphasised tech sovereignty as a means of reducing its reliance on foreign-headquartered firms. Given the Trump administration's antagonism toward the EU and many of its member-states, China's weaponisation of critical mineral exports and broader geopolitical uncertainty, the EU is right to enhance its economic security. As the EU considers proposals in the name of tech sovereignty, which may involve favoring European firms, it must balance security and other considerations with European businesses' access to effective foreign tech – or risk hindering their ability to compete.

Even if the EU's turn to strategic autonomy does not hinder the adoption of innovative tech, uptake can be a challenge. Only 32 per cent of workers in six European countries examined, on average, use AI, compared with 43 per cent in the US, and firms' AI uptake remains uneven across the EU (Chart 1). Firms can struggle to incorporate general-purpose technologies, such as AI, as they often involve changing business practices, and can create new tasks, management needs and positions.

Chart 1: EU firms' AI adoption has grown but remains unequal across the bloc



Source: Eurostat, 'Artificial intelligence by size class of enterprise'.
Note: Excludes agriculture, mining, and financial sector, and firms with fewer than 10 employees.

National governments should consider expanding tax incentives or subsidies for tech investments and employee training. Governments should target small and medium-sized firms and encourage pro-worker AI applications – in other words, those that improve individuals' ability to carry out their work and perform new value-added tasks. They should also target managers for training, as economists found that the degree to which employees were encouraged to use AI and given access to AI tools – two areas where management is key – are linked to higher adoption. At the EU level, the Commission should amplify its work to share best practice on incorporating AI into member-states' education systems, including learning from ambitious adopters like Estonia.

Failure to take steps like these to support students, teachers, managers and workers navigating the transition to AI will not only cause social harm, but create a political backlash that slows AI's diffusion. While scholars are still debating AI's impact on productivity, jobs and more, ASML, SAP and Lovable show that Europe can capture the benefits of external innovation and tech adoption, and they are often essential ingredients of tech success.

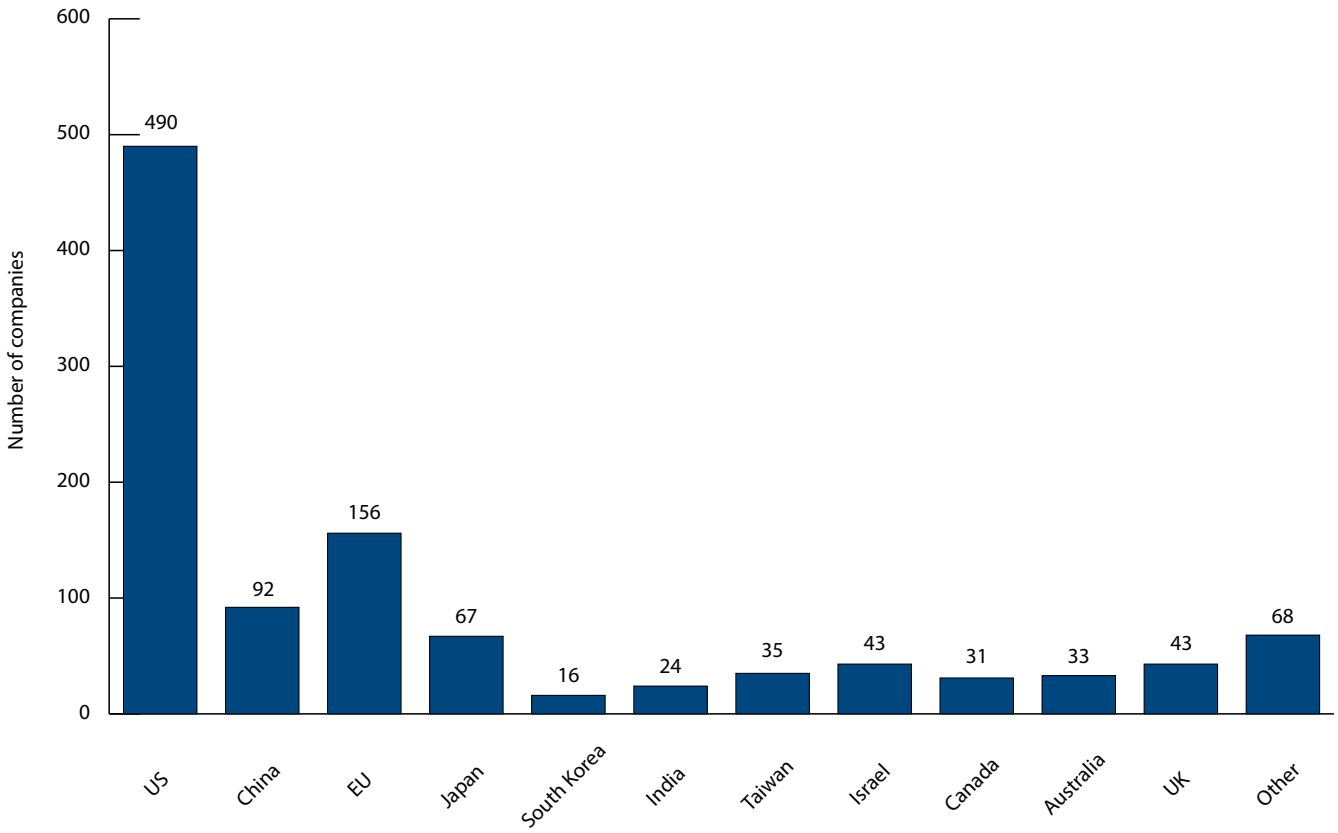
Lesson 2: Europe's tech successes benefit from economies of scale in the single market

Clear, well-designed EU-wide regulations and standards deepen the single market, with benefits for European companies aiming to invest and grow across the bloc.

Nokia and Ericsson are global leaders in telecom network infrastructure, providing equipment, software and services that underpin digital connectivity. We can tie their success in part back to the 1980s and 1990s, when they, other equipment manufacturers, telecom operators and the EU and its member-states collaborated to develop the Groupe Spécial Mobile (GSM) standard within Europe. This was in contrast to the US market, where at the time, competing companies battled over which tech standard should dominate.

With the public-private efforts to create and adopt GSM, Nokia and Ericsson were able to capitalise on intellectual property that was soon in high demand in Europe, and then worldwide as GSM and subsequent standards were more broadly adopted. The case demonstrates that pan-EU standards and rules – if well designed – can provide a clear investment signal and a unified market in which companies can compete. Enabling innovative European businesses to grow allows these firms to become sources of future entrepreneurs, deliver economic benefits and incorporate new technologies into their business better. But after the success of GSM, the EU's performance in developing well-designed standards and rules for successive tech advancements floundered, hampering the ability of innovative firms to grow (Chart 2).

Chart 2: Less than a fifth of the world's most valuable tech companies are located in the EU



Source: companiesmarketcap.com (as of May 7th 2026).
Note: Represents the geographic distribution of the 1098 largest tech companies by market capitalisation.

To the extent Europe has produced tech leaders, it is no surprise they are concentrated in countries like Estonia, the Netherlands, Sweden, Finland and Denmark. They have built strong tech sectors despite the fragmented single market by combining high-quality digital infrastructure, strong technical education and public administrations that adopted digital services early, lowering the cost of starting and scaling firms. In Estonia, for example, companies can register online in a matter of hours and tax filings are digitised. Nordic countries paired early broadband rollout and digital identification systems with deep engineering talent and active venture capital ecosystems, which helped propel firms like Spotify and Klarna. Research also suggests that these countries work to add fewer country-specific compliance layers and ease adoption when implementing EU rules, reducing administrative costs for firms seeking to scale across the single market.

While other member-states should emulate these effective policies, the EU can also play a constructive role. The EU should recognise the importance of standard-setting for global competitiveness, and strive to design standards that are easy for the rest of the world to adopt. It should also set pan-European regulations with centralised enforcement when fragmented member-state rules or interpretations hinder cross-border growth. Here, the Commission's EU Inc. proposal to create bloc-wide rules concerning new, innovative companies is welcome. The Commission's Digital Omnibus and broader regulatory simplification efforts, in response to the EU's large digital rulebook, also offer an opportunity to address overlapping rules and fragmented interpretations.

Lesson 3: R&D remains vital

Europe's tech champions have also benefited from R&D investment – both public and private.

In the case of Europe's crown jewel, ASML, its extreme ultraviolet lithography equipment is a product of decades of research, which advanced through Dutch government support and research institutions like IMEC in Belgium. US national labs and American business consortia like Sematech strongly contributed to lithography R&D as well and partnered with ASML when US companies were unable to compete. ASML also leveraged billions of euros in private investment from foreign-headquartered firms like Samsung, Intel and TSMC to mature its tech. More recently, in 2019, IQM, one of Europe's leading quantum computing companies, headquartered in Finland, spun out of Aalto University and the VTT Technical Research Centre, further demonstrating the value of public R&D. These examples illustrate how both public and private financing, using partnerships inside and outside the EU, are pivotal for R&D investments.

EU institutions should therefore ensure that there is increased funding for R&D in the bloc's next Multi-annual Financial Framework (MFF) and deploy it more effectively. The European Innovation Council (EIC), which aims to support disruptive technologies across their lifecycle, has previously dedicated a large proportion of its funding toward later-stage technologies. While later-stage funding under the EIC, such as the Scaleup Europe Fund, can help address market failures when commercialising new tech, the next MFF should dedicate more resources toward earlier stage tech and expand grant-making procedures like those used by the ARPA programmes in the US or similarly designed SPRIN-D in Germany. These programmes support high-risk, high-reward projects, provide fast funding cycles and use independent, experienced programme managers, and have a track record of success.

Mario Draghi's 2024 report on competitiveness similarly recommended these steps but also noted that the EU lagged in private R&D and that this spending remained concentrated in less innovative sectors

like the automotive industry. Member-states should further facilitate private R&D investments through stronger business support measures, including tax incentives and grants.

However, if the EU is to meet its longstanding target of spending 3 per cent of GDP on R&D, it will have to better develop the high-tech sectors, such as software and computer services, that produce the most R&D investment. While policies to strengthen corporate and public R&D will help, fostering these sectors will require broader efforts like enhancing the financing ecosystem and boosting digital skills and infrastructure. The Nordics and the Netherlands have excelled in these areas, and together their companies have produced higher average annual growth in R&D investment than the rest of the EU over the last decade.

Conclusion

ASML builds the most complex machines on earth, Spotify is a household name and Lovable is one of the fastest growing software startups in the world. Europe has built tech champions that demonstrate the bloc has more bright spots than many portray. But these successes remain too rare.

To address the challenges European tech and other innovative companies still face, the Commission has unveiled a suite of policy proposals, including the Digital Omnibus, EU Inc. and the Digital Networks Act, plus a collection of related strategies. More proposals are on the way with the Cloud and AI Development Act, the Chips Act 2 and more.

As the EU considers these proposals and member-states ponder their own initiatives, policy-makers should use lessons from Europe's existing tech successes, including from the member-states that incubated them, as a guide. These companies' leadership stems from a multitude of factors, but building on existing technologies, exploiting scale and investing in R&D have been among the strongest drivers. Many aspects of the Commission's proposals reflect these important lessons and move in the right direction, although some would prioritise security and add new requirements for business. To deliver their intended effect, these files and national policies must fit together – rather than add to existing complexities – to form a cohesive framework on which Europe's tech ecosystem can flourish.

As the tech sector reshapes the economy, and increasingly defence, the EU cannot afford to fall further behind. By learning the right lessons, it can unlock its potential and harness tech to deliver prosperity and strength.

James Green is a research fellow at the Centre for European Reform.