EUROPEAN COUNCIL ON FOREIGN RELATIONS
ecfr.eu

POLICY BRIEF

CONTROL-ALT-DELIVER: A DIGITAL GRAND STRATEGY FOR THE EUROPEAN UNION

José Ignacio Torreblanca, Giorgos Verdi

October 2024

SUMMARY

- Europe's global influence as a technology regulator is not matched in its overall digital power, where it lags far behind the US and China and is highly reliant on others.
- Building a grand strategy to address this requires navigating three related dilemmas: boosting innovation while upholding European values; boosting Europe's economic security while preserving its openness; and boosting its international influence while adapting to a harsher geopolitical environment.
- Europe has significant strengths and underexploited potential in the digital realm. It can respond successfully to the three dilemmas and establish itself as a full-fledged technology power through a series of positive-sum policies deepening markets, filling institutional gaps, and pursuing more proactive and ambitious digital diplomacy.
- These policies must be a cornerstone of the new EU leadership's policymaking over its 2024-2029 term. Europe is already falling behind. It has no time to spare in catching up.

Europe's technology agenda and its geopolitics gap

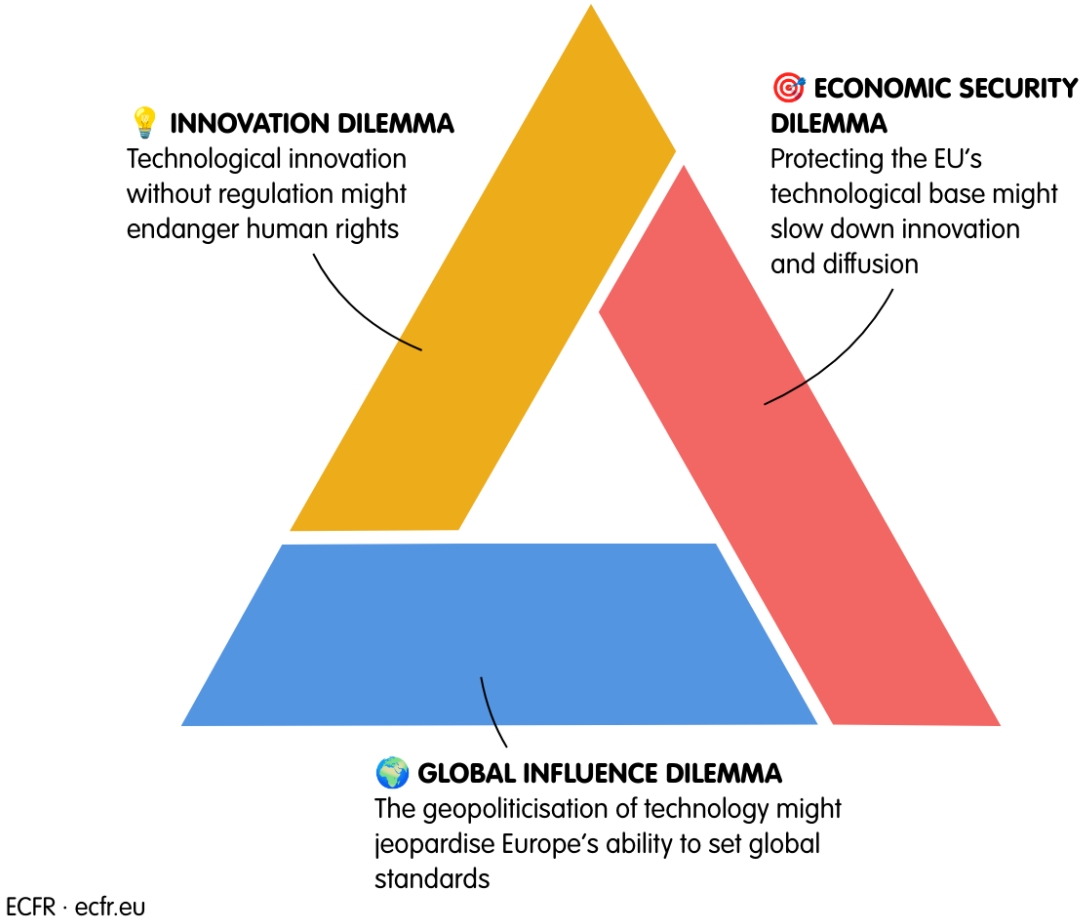
The European Union has been called a digital empire. Along with the United States and China, it constitutes one of the three major models of digital governance to have emerged in the first quarter of the 21st century. In recent years, and especially during the EU's last institutional term (2019-24), it has started to advance its model more confidently through its technology policies. Yet Brussels still lacks something fundamental that Washington and Beijing possess: a way of grounding those policies not only in its socio-economic interests but in its geopolitical ones too.

Digital-driven prosperity is a priority, of course. As Mario Draghi's recent report on competitiveness asserts: "The EU is weak in the emerging technologies that will drive future growth." Upholding values in the digital realm matters as well; a central pillar of Europe's strategy to date and of the "Brussels effect", whereby the EU's regulations set global standards. But prosperity and values are not the same thing as power. And where power is concerned, the European model lags far behind its American and Chinese counterparts.

The EU therefore needs a digital grand strategy rooted in a theory of how technology and power interact in the emergent mid-21st century. Such a strategy must combine three interlocking goals: maximising new research, development, and breakthroughs; protecting relevant industries from external co-option; and spreading European technology policies and practices in the wider world. As global digital competition heats up, the union should use its next institutional term (2024-29) to build and execute a strategy encompassing this trio of **innovation**, **economic security**, and **influence**.

This policy brief articulates a roadmap for a digital grand strategy orientated around those three goals. It argues that each one confronts policymakers with challenging tensions and trade-offs. Firstly, **innovation** requires openness but can make markets and policies vulnerable to geopolitical or market rivals. Secondly, **economic security** is needed to protect European values and interests, but can slow technological progress and alienate partners. Thirdly, seeking global digital **influence** may lead to clashes with other countries also seeking that influence, as well as with others that feel forced to choose between competing models of technology.

The EU's three tech dilemmas



This is, however, an optimistic document. It insists that Europeans can successfully negotiate those **three digital dilemmas** andthat there are positive-sum games to be found. This spirit of realism about the challenges, creativity in seeking out the balances and solutions, and ambition in fulfilling Europe's potential as a full-fledged technological power should inform leaders over the next five years – especially those in the all-important roles in the new European Commission.

Our argument starts from an assessment of the achievements and shortcomings of the 2019-2024 term in these realms, as well as the changing geopolitical landscape. Then it surveys the three digital dilemmas in succession. It concludes with a series of recommendations targeted especially at the 2024-2029 commission but also the other EU institutions and national governments across Europe. These form a map for navigating the dilemmas and building an innovative, sovereign, and influential digital model; not abandoning the Brussels effect and its achievements to date, but building on them.

Europe's technology dilemmas: The story so far

In July 2019, Ursula von der Leyen proposed a legislative package to make Europe "fit for the digital age". Five years later, many of its ideas have been realised. The EU has established a comprehensive framework to regulate the new industries in the form of the Digital Markets Act (DMA) and Digital Services Act (DSA). It also adopted the AI Act, the world's first law to regulate AI systems.

To be sure, the digital policies of the 2019-24 commission had significant geopolitical dimensions. As the US and China harnessed their technology policies more closely to their strategic goals and interests (for example, America's National Security Commission on AI) and especially following Russia's full-scale invasion of Ukraine in February 2022, the EU turned outwards. The Versailles Declaration, issued by its leaders two weeks after the Russian assault, placed a strong emphasis on the need for the union to invest in new digital technologies by engaging in international partnerships. The first ever European Council conclusions on digital diplomacy in July that year noted how new technologies had become "key competitive parameters that can shift the geopolitical balance of power".

But despite these and other efforts, pervasive and justified fears about the EU's waning competitiveness have captured the discussion on technology. Despite its intense regulatory activity in the field, the union is still far from establishing itself as a global leader in critical technologies and the norms regulating them. It relies on other countries for over 80 per cent of its digital products, services, and infrastructure. The EU's share of the global ICT market has fallen significantly from 21.8 per cent in 2013 to 11.3 per cent in 2022. If these trends persist, they will compound Europe's digital lag and with it the continent's wider loss of control over its place in the world. If it wants a solid power base to be a relevant global actor over the coming decades, Europe will have to reverse them.

And it will have to do that amid fierce competition between the US and China. Xi Jinping has stated that "technological innovation has become the main battleground of the global playing field." In 2015, China adopted its Made in China 2025 strategy with the aim of building an indigenous technological ecosystem in vital areas such as artificial intelligence (AI), semiconductors, and advanced computing. Its successor agenda for 2035 goes beyond this in accelerating the development of "new quality productive forces" to generate disruptive breakthroughs and stimulate future industries. Meanwhile, the US is striving to outpace its rival. In 2022, President Joe Biden signed the CHIPS and Science Act, committing $52.7 billion to semiconductor development. The US has also restricted trade and investment ties with

China under the "small yard, high fence" doctrine of national security adviser Jake Sullivan, which places restrictions on a small number of strategic technologies with military significance while maintaining trade relations in other areas.

Both the US and China understand critical technologies as a means to acquire and exercise power, and therefore approach them through long-term strategies encompassing industrial, trade, foreign, and security policies. This has turned the two superpowers into full-fledged "digital empires". Anu Bradford, the legal scholar who coined the term, has also applied it to the EU – and indeed Brussels is a peer to Washington and Beijing when it comes to standard-setting regulation. But the union also lacks the leadership, unity, and institutional and financial tools needed to replicate their comprehensive, long-term, and whole-of-government approach across the wider sweep of technology policy. The result is a narrow and siloed European approach to critical technologies, often detached from — or at least insufficiently coordinated with — the rest of its strategic objectives.

Europe, then, is falling behind and risks losing what strength and sovereignty it still has in the digital realm even despite the progress of recent years. To catch up, it needs to integrate its technological agenda with its foreign policy goals much more comprehensively. The aim should be European global technological influence and leadership, defined as the ability to advance the EU's own values and interests in global technology governance but also in the spheres of power -– global security, economics, and politics -– where new digital breakthroughs in particular are being weaponised. Meeting that aim demands a much larger European toolbox filling the policymaking gaps; its own all-of-government approach; and most of all its own answers to the trio of digital dilemmas that it faces.

Navigating the first two – the innovation and economic security dilemmas – begins at home, with the EU's internal policies. The union must find a way of maximising technological progress to ensure more European breakthroughs generating growth and jobs. At the same time it must protect its technological base against disruption or weaponised interdependence through market dominance or the political actions of third actors (such as sanctions, export and import controls, and investment screening).

Each of these goals comes with its own trade-offs. A light regulatory approach may succeed in fostering innovation and attracting investments but fail to protect people's rights and damage Europe's international reputation for ethical digital leadership. Similarly, an ambitious economic security strategy may protect the EU's technological base in the long term, but could also slow down the adoption and deployment of new technologies, alienate the EU's partners, and even lead to trade-offs with the EU's other geopolitical goals. For example, it may be more realistic for the EU to meet its decarbonisation commitments in time by importing green technologies from China than by producing them at home in the quantities needed.

Success in managing these two dilemmas is a necessary but not sufficient condition of Europe addressing the third: influence. Until very recently, the EU has mostly relied on the Brussels effect to influence technology governance abroad – or has altogether sidelined that ambition. More recently, it has attempted to implement a more forward-leaning digital diplomacy with initiatives such as the Global Gateway, its answer to the international investments of China's Belt and Road Initiative (BRI). But these have not yet yielded concrete accomplishments.

While Europe has dozed, China has built technological spheres of influence in Latin America, Africa, the Indo-Pacific, and the EU's neighbourhood. More onerous still, European languor has coincided with complacency. In too many of the continent's capitals the old assumption persists that China is only capable of providing basic infrastructure and that local governments and businesses in third countries are just waiting for the EU to sweep in with its higher-value investments. In truth China is already positioning itself as a key player in high-end digital services such as cloud computing and data centre services. Europe must awaken, shake off its old assumptions, and plot a global course that balances ambition and humility.

The good news is that the incoming class of EU leaders has shown signs of acknowledging both the scale of the overall technological challenge and the dilemmas it presents. Both its Strategic Agenda 2024-2029 and the influential recent report on the future of the single market by Enrico Letta, Italy's former prime minister, have impressed the urgency of strengthening EU sovereignty in strategic sectors, turning Europe into a techno-industrial powerhouse, and boosting its global digital leadership. These goals are also reflected in Ursula von der Leyen's political guidelines for her second term as commission president, in which she states that "Europe must be at the cutting edge between science, tech, and industry". And they find expression in the Draghi report, which includes strong commitments to boosting EU digital industries and technologies and developing a new economic foreign policy aimed at protecting the EU's interests. Worthy goals, all of them. Now they must be made reality.

The innovation dilemma

EU leaders are justifiably worried about the union's ability to stimulate technological innovation. Emmanuel Macron, to give just one prominent example, has lamented Europe's significant lag behind the US and China on this. Draghi made similar comments in his recent report. These concerns correspond with evidence from critical technology sectors. The EU trade organisation Digital Europe calculates that only 3 per cent of the world's AI 'unicorns' (start-ups worth more than $1 billion) come from the EU. This is also because close to 30 per cent of unicorns founded in Europe between 2008 and 2021 relocated elsewhere, with the vast majority moving to the US. On top of these, as of 2023 only 11 per cent of global semiconductor production takes place in Europe, and this tended to be the less sophisticated end of the chip market.

A common view, voiced by Draghi among others, is that the EU's digital-regulatory zeal during its last institutional period undermined innovation and caused the union to fall behind its competitors. In the 2019-2024 term it adopted 93 digital and technology regulations that, according to the former European Central Bank president, among others, either slow down innovators or raise a restrictive barrier to market entry. The Draghi report says: *"innovative companies that want to scale up in Europe are hindered at every stage by inconsistent and restrictive regulations"*. Both Meta and Apple have stopped the rollout of innovative products and AI systems in the EU's single market due to regulatory uncertainties. Such tensions comprise Europe's innovation dilemma.

The EU could compensate for its relative lack of cutting-edge invention by being particularly good at adopting new apps and gizmos pioneered elsewhere. After all, often it is not the original development of new technologies that drives economic growth, but their application. And European industries are champions in sectors such as energy, cars, and chemicals that could lead the world in applied digitalisation. But the EU is falling behind in this respect too. If current trends persist, only 20 per cent of European businesses will use AI by 2030. This is far short of the EU's target of 75 per cent and could mean a loss of enormous economic potential. A report by McKinsey Global Institute estimates that generative AI could help Europe achieve an annual productivity growth rate of up to 3 per cent through to 2030.

But a growing number of academics, including Bradford and Marietje Schaake, argue that Europe's innovation and diffusion gaps should not solely be attributed to regulation. Firstly, research shows that the impact of regulation is contingent on its nature. Whereas prescriptive regulation can have a negative effect on innovation, some types of regulation, such as "general regulation" affecting the overall business environment, can reduce transaction costs

and decrease uncertainty, thus stimulating innovation and investments. Secondly, the vast US lead over Europe in the development and growth of digital giants may reflect not recent regulatory developments such as the DMA, DSA, and AI Act, but the high degree of market fragmentation within Europe.

Thirdly, and relatedly, is capital markets fragmentation. The EU does innovate, as successful firms such as Nokia and Ericsson or the presence of four member states in the list of the ten most competitive digital economies in the world show. But that innovation is held back by insufficient access to public and private financing compared with deeper US and Chinese funding markets. This means that €300 billion in European savings in Europe end up in the US annually while almost €3.1 trillion worth of pensions fund assets are left idle. The result is that American AI firms have received $335 billion, while the two of the most promising EU-based AI companies – France's Mistral and Germany's Aleph Alpha – have both struggled to raise $500m.

Balancing Europe's innovation dilemma will therefore largely depend on how digital regulations are applied. In May 2024, the Council of the EU took note of the significant number of these adopted in recent years and stressed the need for efficient implementation in the next institutional term.

Another determining factor will be Europe's ability to attract talent. If current trends persist, the EU will suffer from a shortage of 8m information and communications technology specialists by 2030. But there are grounds for hope: it has also (narrowly) become a net importer of talent from America. Around 8,400 US tech workers arrived in Europe in 2023, compared with 8,300 Europeans who went the other way. For the EU to meet its targets in technological talent, such trends must be accelerated by, among other things, making migration laws more flexible. The potential election of Donald Trump as US president can become an opportunity for Europe to gain valuable talent.

Technological innovation depends heavily on political leadership. Successful small and middle European powers, such as Estonia, Denmark, and Ukraine, have shown how governments can drive and scale digital advances. Since 2022, Ukraine's political leadership has harnessed these to counter Russia's attacks in what has been dubbed "the first AI war", through measures such as the "army of drones" and a close relationship with private actors. Initiatives such as the drone coalition launched by Latvia to support Ukraine (and joined by 14 EU and non-EU countries such as Canada and Australia) show how the 'Team Europe' approach can work in the field of critical technologies without central steering from an overstretched commission and European External Action Service (EEAS).

Such examples point the way through Europe's innovation dilemma. Europe does not have to make a blunt choice between its distinctive model of regulation and greater dynamism. Smart implementation of the rules it has already, more integrated digital and financial markets, an appealing offer to digital talent, and clear and ambitious leadership – from the top or from can-do, bottom-up coalitions – constitute a smart middle way.

The economic security dilemma

There is an alternative to expensive home-grown technological innovation: importing critical technologies at low prices from elsewhere and boosting relations with those partners in the process. But this approach risks making Europe more dependent on outside players and vulnerable to disruptions in the flow of technological goods, services, and data. The trade-offs and tensions between the goals of faster progress and protecting the EU's technological base comprise Europe's economic security dilemma.

It is particularly urgent to balance these goals at a time in which the EU's adversaries are increasingly weaponising vulnerabilities in critical-technology supply chains. In July 2023, China restricted the export of raw gallium and germanium to Japan. Both are vital for the production of semiconductors for electrical vehicles, 5G infrastructure, and military hardware. As Europe sources 71 per cent of its gallium and 45 per cent of germanium from China, the restrictions were a stark illustration of the threats to the long-term resilience of its technological base. How, then, to respond?

The first von der Leyen commission set its sights on "strategic autonomy", a vague concept that divided member states and alienated partners in the global south which felt that the EU was thus turning away from an open and rules-based system. Accordingly, the commission shifted its focus away from autonomy (the word was entirely absent from von der Leyen's re-election speech to the European Parliament in July 2024) and towards resilience through de-risking. This policy -– to accept the various forms of interdependence but seek to manage them -– is reflected in examples such as the European economic security strategy, in which member states are asked to perform collective risk assessments identifying bottlenecks in the supply chains of four critical technologies: advanced semiconductors, AI, quantum technologies, and biotechnologies.

Nonetheless, de-risking alone is not enough for the EU to balance its economic security dilemma. It remains a loose term that promises limited, cost-effective measures to protect the technological base of the EU. But proactive action is also vital – including the marshalling of significant resources. As our ECFR colleagues Tobias Gehrke and Filip Medunic have argued,

the EU's geoeconomic agenda is "far too narrow, reactive and defensive".

So de-risking must be complemented by the necessary financial resources to strengthen Europe's production capacity in vital parts of the technological ecosystem. Some EU efforts, such as the European Chips Act, have already edged in this direction. Likewise, the Strategic Technologies for Europe Platform brought €1.5 billion in investment in key technologies, albeit scaled back from €10 billion. These initiatives, however, often come with their own trade-offs. For example, the European Commission approved €5 billion of German state aid to support the construction of a microchip manufacturing plant in Dresden. But the fact that the main investment partner is Taiwan's TSCM has raised concerns in Berlin about the negative impact on German trade with China.

Besides investments, balancing Europe's economic security dilemma requires an honest assessment of its alignment with the US in critical technologies. Take the case of the Dutch chipmaker ASML, which stopped exporting semiconductors to China following US pressure – illustrating Europe's exposure to American demands. Of course, it may well be in Europe's interest to help the US slow down Chinese advances in such fields. But it is also crucial that Europe be able to make these decisions on its own.

This is especially important in the event that Trump wins the US presidential election and promotes policies that generate friction with the EU. Republican policymakers have advocated US decoupling from China and the withdrawal of the Executive Order on AI, which the Biden administration adopted to establish new standards and protect American citizens from AI risks. Thus, while pursuing cooperation with the US and other like-minded partners to advance global standards, the EU must be able to de-risk the whims of US politics and policymaking. For example, the European semiconductor value chain is dependent on US intellectual property. By replacing US intellectual property with European alternatives, the EU can ensure that ties with the US remain mutually beneficial.

De-risking in order to balance the economic security dilemma does not mean pulling up the drawbridge. In fact, it often means the opposite: forging strong partnerships with important countries involved in major value chains. In an interdependent world, such cooperation is essential to guarantee access to the supply of cutting-edge technologies and ensure that efforts to insulate Europe from risks do not come at the cost of technological innovation. It means initiatives such as the Minerals Security Partnership Forum, launched by the EU and the US to boost international cooperation in critical raw materials. The EU should pursue similar partnerships in AI, semiconductors, and quantum computing.

If von der Leyen's 2019-2024 term was about being a 'geopolitical Commission', the 2024-2029

one will need to deliver a 'geoeconomic Commission'. At its core must be an answer to Europe's economic security dilemma; one combining deeper investments in European capacity, de-risking measures tackling vulnerabilities, and ambitious new global partnerships to deliver digital progress that is both fast and secure. Paired with the innovation measures described in the previous section of this paper, such an agenda can give Europe's technology policies the geopolitical depth they have lacked until now. But to constitute the grand strategy needed they must also be globally influential.

The global influence dilemma

This paper has already referred to the Brussels effect, whereby the EU has used its market power as leverage to set global standards. The most prominent example of this is its General Data Protection Regulation (GDPR), which – though increasingly questioned in Europe itself – has become the benchmark for privacy rules across the world.

In many respects, however, this effect is more an artefact of the recent past than a description of today's realities. Over the last half-decade especially, technology has become starkly more geopolitical, conflict has proliferated, competition between powers has intensified, and interdependencies have been weaponised. Countries have become more aware of the strategic value of critical technologies. All this is gradually limiting the EU's reach. Hence the global influence dilemma: how to ensure that Europe continues to set and maintain standards while adapting its model for this more contested and multipolar age?

One can start by surveying the global challenges to the Brussels effect. The EU's AI Act, though a pioneering world-first, has not even been popular in the wider West. Instead, countries like such as US, the United Kingdom, and Japan have opted for different approaches in an effort to encourage innovation. Further jurisdictions are likely to follow them, either because they share that objective or because they lack the resources to enact EU-style complex regulations. Meanwhile, others may be leaning towards the Chinese model and accepting, happily or reluctantly, the human rights trade-offs implicit in the way China deploys technologies.

This resistance to the European way comes not only from other states but from the 'big tech' giants themselves. Some have paused the deployment of new products in Europe until they have a better picture of what EU regulations entail, leading to fragmentation and a two-tier transatlantic digital market. Firms have also pushed back against the EU's two landmark digital industry regulations, the DSA and the DMA. With other countries reluctant to follow its lead, the union's ability to define new global standards in this field looks newly doubtful. While the EU also expects consumers and governments abroad to hold companies

accountable for delivering lower standards on privacy, competition, and disinformation, it is not always clear they will comply.

In an effort to go beyond the Brussels effect – an initial response to the influence dilemma – the first von der Leyen Commission pursued two main initiatives. Firstly, the Global Gateway aimed to provide an alternative to the "digital Silk Road", the digital pillar of China's wider BRI investments, by mobilising up to €300 billion in investments for digital and other forms of infrastructure. Secondly, the EU has pursued a wide range of digital partnerships such as the AI Code of Conduct pioneered by the EU-US Trade and Technology Council (TTC), a voluntary set of commitments later adopted by the G7. Other initiatives, such as the Council of Europe Convention on AI and the EU's support for UNESCO's AI Recommendations, speak of Europe's new hard-nosed attempts to reach beyond its borders.

They are a good start, but patchy. Rivalling China's overseas digital investments is one thing; a still-missing common EU stance on China's overall technology policies is another. Likewise, relying overly on the TTC to externalise EU technology policies may prove a mistake if the November 2024 US presidential election brings a change of leadership and a less cooperative partner in Washington.

A more comprehensive and holistic strategy is therefore needed to connect the EU's technology agenda with its broader foreign-policy and strategic objectives. It should start from closer coordination between the EU, the member states, partner countries, and the private sector, closing gaps that too often inhibit collective European influence. That may include new institutional arrangements. For example, in the last term the EU established the position of senior envoy for digital to the US, essentially a San Francisco-based technology ambassador. But while that role involves maintaining channels of communication with US big tech companies, it is not deeply networked across the rest of the EU's international technology relationships.

The union should be clear-eyed about the fact that, as this paper has already discussed, the vast majority of human technological innovation takes place beyond its borders. For Europe to renew its ability to shape the global digital landscape thus requires it to embrace strategic interdependence. Deeper partnerships can allow the EU to exploit its own strengths and fill gaps in its access to critical technologies. In the semiconductor sector, for example, there is a lack of EU-owned chip producers but companies from Japan, South Korea, and Taiwan dominate. Such complementarities can enhance Europe's ability to set standards both on its own and in cooperation with like-minded states.

Preserving the best of the Brussels effect, one of the great recent successes of the European

project, while adapting to a world of more geopolitical technology is as much of a balancing act as the innovation and economic security dilemmas. And it is inextricably linked to both. But as in those cases, that balance can be found. Amid fierce competition, the EU can wield new influence through deeper alliances with partner countries, support for their technological transitions, and reforms to its existing digital diplomacy and wider foreign policy initiatives.

The pillars of an EU technology grand strategy: Recommendations and next steps

Balancing the innovation dilemma

Complete the capital markets union

Where deep pools of venture capital have helped the US technology ecosystem thrive, in the EU they remain much too shallow. Experts have called for the mobilisation of pension and insurance funds to increase investment in critical technologies. Across the union such funds hold €13 trillion in assets. Eliminating the legal and regulatory restrictions that they face could thus unlock vast private investment. According to the European Investment Bank the US digital sector has also benefited from a sounder initial public offering (IPO) market. To compete for and attract investors, the EU will need to pursue less fragmented IPOs for European innovators, a significant and welcome recommendation of the Draghi report. The Letta report proposed the establishment of a unified IPO gateway to EU markets through cooperation between the union's key stock exchanges, before companies transition to their chosen national stock exchanges.

Establish a framework for the freedom to research and innovate

The EU must use the 2024-29 institutional term to untangle the regulatory and technology-governance jumble that has emerged in Europe over recent years. To this end, Letta proposed expanding the four fundamental freedoms of the single market to include a fifth: the freedom to research and innovate. Similarly, Draghi has recommended the establishment of a properly funded research and innovation union. Both of these are bold ideas, but the priority should be something more fundamental still: the harmonisation and streamlined implementation of rules for the whole European technology ecosystem. This would mean the EU eliminating barriers to the digital single market so that technology firms can grow to a scale befitting an economy of the EU's size; scrutinising existing rules for duplication; and encouraging

member states to set up Innovation Offices to help innovators navigate the bureaucracy, based on the example set by the UK government in the medical sector. Brussels should also urge national capitals to establish regulatory 'sandboxes'; – physical, digital, or hybrid processes that provide innovators with a safe environment to test their products and become compliant with the relevant regulations under supervision. Such 'sandboxing' has already provided proven benefits to the telecommunications sector by reducing the time and cost of getting new ideas to the market.

Set up and support technology diffusion institutions

A major part of Europe's innovation dilemma is the question of how to ensure new breakthroughs spread rapidly beyond vanguard industries and across the wider economy, including traditional industries and small and medium enterprises. Therefore, the new cohort of EU leaders should consider dedicated funding for a new wave of technology diffusion institutions to support technology transfer across the union. The existing network of European Digital Innovation Hubs has delivered disappointing results. So instead, funding and support should be redirected to replicate existing successful models, such as Germany's Fraunhofer Institutes and France's Carnot Institutes. These centres conduct applied research and training for both governments and firms to help commercialise new technologies. The Nordic AI Center, a new institute established with funding from the Nordic Council of Ministers to increase the usage and adoption of AI technologies on a regional level, is another good example on which to build. Multiplying the quantity and quality of such partnerships, regionally or nationally, is essential to ensure that the EU takes full advantage of new technological innovations in a way that is consistent with its openness and values.

Balancing the economic security dilemma

Approve a Critical Technology Industry Act

As a collective of European technology firms rightly asserted in a recent joint manifesto, "Europe needs to support innovators not just with rules, but with concrete private and public investments and proactive strategies for technological development and transfer beyond national interests". To achieve this, the new European Commission should introduce a Critical Technology Industry Act within its first 100 days. The legislation should facilitate and attract investments for the products, components, and machinery necessary to produce critical technology, such as AI and robotics, semiconductors, and quantum technologies. Priority could be given to those goods on which the EU is overly dependent on external producers. The act could be complemented by the new European Competitiveness Fund that

von der Leyen pledged to create in her 2024-2029 guidelines. This is expected to invest in strategic technologies, though further details have not yet been released. The EU could equip the fund with an advisory group of private sector actors, led at commissioner-level, to help align its objectives and resources with those of the private sector.

Increase and expand public funding instruments

The EU's own funds remain scarce and constrained by the current Multi-annual Financial Framework (MFF). But the commission should make better use of existing instruments such as the Innovation Fund and the European Defence Fund, and seek to increase their resources – by reallocating them from other priorities if necessary. The union should consider creative ways of securing additional funds such as joint borrowing and making use of leftover funding from its NextGenerationEU pandemic recovery package. And it should examine how to optimise the next, 2028-2034 MFF. The commission should make a politically compelling case to prioritise investments in critical technologies by highlighting Europe's innovation gaps and the essential role of those technologies in maintaining the union's overall competitiveness and resilience. Doubling and reforming the budget of its Horizon Europe research funding programme as proposed by Draghi, for example, is a vital step for the continent's overall future. Finally, as the US and China show, publicly funded innovation can bring many positive spillovers for civilian, military, and dual-use applications. While the US and NATO have long been using incubators and public venture capital schemes, the EU is only just starting to do so. It must catch up fast. As a next step, the union should increase cross-fertilisation of civil and defence technologies by removing the exclusive focus on civil technologies in parts of Horizon Europe, or by setting up a new instrument to fund dual-use R&D.

Establish Tech Clubs with international partners

Seeking economic security should not be incompatible with keeping Europe open to trade, investment, and cooperation with third countries. On the contrary, as we have argued, Europe can pursue smart strategic interdependence that increases its sovereignty without promoting protectionism, thwarting innovation, or alienating partners. Based on its existing economic security strategy, the EU should pursue the establishment of 'Tech Clubs' with other countries seeking partnerships to gain economic security or balance their dependencies on China or the US. These might include like-minded democratic partners with which the EU shares political values but also other countries with which it has a strong alignment of interests. The Tech Clubs should coordinate export controls in critical technologies and thus gradually construct a regime of plurilateral controls to ensure their lasting effectiveness and

diplomatic viability. They should also pursue a positive agenda of mutual pledges to ensure access to materials, components, and products – thus strengthening trade and specialisation. Finally, the Tech Clubs should encourage information and intelligence-sharing about the potential risks of disruption or weaponisation in the technological value chain.

Balancing the global influence dilemma

Appointing an ambassador-at-large for digital and digital attachés

The European Council should appoint a new EU ambassador-at-large for digital, who would in turn lead the development and deployment of a new cohort of digital attachés in the EU's delegations around the world. Such institutional rewiring is essential to direct proper attention and resources to Europe's technology diplomacy. It would better enable the EU to provide its partners with assistance in developing and deploying safe, responsible, and resilient critical technologies. And thus it would constitute a new, more active way to project the EU's regulatory power beyond its borders and support its partners' digital transformation; on everything from the financing and rollout of infrastructure to the development of large language models and the diffusion of AI applications. This new EU digital diplomatic service would go beyond narrow regulatory cooperation to work closely with local technology ecosystems, understand their needs and interests, and strive to create opportunities for mutual business and innovation benefits.

Adopt an international digital policy strategy

While the EEAS under the EU's high representative for common foreign and security policy has started focusing on digital diplomacy, its success has been hampered by several factors. These include lack of resources (especially for the EU delegations around the world), insufficient integration of member states' digital diplomatic work (also lacking resources), and the usual turf wars within the commission. Whereas in the US, the National Security Council brings together the different branches of government and can exercise strategic leadership, the EU lacks both a similar institution and the equivalent of national security adviser. To amend this, the high representative should mandate the development of an EU international digital policy strategy, based on the recent Council of the EU call to spell out the principles, objectives, and tools of the EU's digital diplomacy agenda. Such a strategy should bring the EU's efforts in this field into one coherent framework and under the leadership of the new ambassador-at-large for digital. It would necessarily bring together multiple different commission portfolios: trade, partnerships, internal market, competition, economic and financial affairs, and budget. Finally, European Parliament committees should play a more

developed and structured role in diffusing EU digital norms and engaging in regulatory dialogue with international partners – be this through the foreign affairs, civil liberties, or industry committees, inter-parliamentary meetings with other regional or national parliaments, or the establishment of a new inter-parliamentary forum on digital diplomacy.

Renew the Global Gateway initiative

Several constraints have limited the impact of the EU's Global Gateway investment initiative, including its high-tech work. An internal commission review leaked in April 2024 acknowledged, rightly, that "efforts are spread too thinly across many fronts". Another report by the European Parliamentary Research Service points to the "considerable uncertainty about what the strategy offers". For example, the vast majority of the Global Gateway's digital flagship projects focus on investments in digital connectivity. While these are essential, there is a notable lack of equivalent investments in AI, semiconductors, and quantum technology. This provides openings for other actors, such as China, to fill the investment gaps for Europe's partners, effectively building cutting-edge authoritarian technologies on top of more basic infrastructure funded by the EU. So it is essential that the Global Gateway be linked more closely to the EU's digital policy and digital diplomacy objectives. The opportunities this would open up are enormous. For example, a Fundación Carolina research study published in November 2023 assessed that in a best-case scenario, coordinated European investments in technology and digitalisation in Latin America could boost the EU's total economic impact there from the currently projected €45 billion to €180 billion and create nearly 2.5m new jobs. Local technological ecosystems would also benefit from more targeted European support. The example of the EU-Latin American Digital Accelerator sets a positive precedent for EU-supported incubation services for start-ups and SMEs in partner countries.

A seat at the table

The EU today is falling behind as a digital power. Innovation gaps present for decades are growing wider. Its reliance on others is becoming a greater strategic risk. And the Brussels effect – the union's ability to influence technological norms and standards globally – is becoming weaker. But its situation is far from hopeless. By first confronting openly and then tackling proactively the three dilemmas – innovation, economic security, and influence – it can harness its strengths and start to catch up. Ignoring the policy trade-offs and tensions will not work. By contrast, both the American and Chinese 'digital empires' show the value of being strategic and ambitious about upholding one's values and interests in the contested digital realm. They also show the importance of doing so in a world of rapid technological change, geopolitical turmoil, and close interaction between those two phenomena in the form

of ‘geopoliticised’ technology. So the EU has no time to waste. As its new leadership gets to work, and looks ahead to the horizon of 2029, it must move fast to fill the gaps, upgrade the institutions, and build the partnerships it lacks. The next five years will decide whether the EU claims a seat at the world’s technological top table – or ends up on the menu.

About the authors

José Ignacio Torreblanca is a senior policy fellow at ECFR and head of ECFR’s Madrid office. He is also a professor of political science at Universidad Nacional de Educación a Distancia in Madrid.

Giorgos Verdi is a policy fellow with the European Power programme at the European Council on Foreign Relations. His research focuses on the implications of critical and emerging technologies for the EU’s competitiveness, economic security, and foreign policy.

Acknowledgments

The authors would like to thank the experts that contributed to this paper through research interviews and discussions, including Giorgia Albertino, Mark Boris Andrijanic, and Anu Bradford. We also want to thank all the participants of the closed-door Policy Salon on technology, and the World Economic Forum’s High-Level Group on European Strategic Interdependence, both of which were held on the sidelines of the ECFR Annual Council Meeting in July 2024. To complete this paper, we also held interviews with officials from the European Commission’s Directorate-General for Communications Networks, Content, and Technology, as well as with representatives from the American Chamber of Commerce to the EU. We are most grateful for their help.

At ECFR, we want to thank our colleagues in the European Power programme for their support throughout the process. The deputy director of the programme, Carla Hobbs, and the programme coordinator, Irene Sánchez, were essential for the completion of this project. We also want to thank our colleagues Tobias Gehrke and Ángel Melguizo for providing us with invaluable feedback. Finally, we want to give a special thanks to Jeremy Cliffe, our editorial director, for an incredible job in editing this paper and making critical suggestions to improve it.

Despite these contributions, all views remain the authors’ own.

ABOUT ECFR

The European Council on Foreign Relations (ECFR) is the first pan-European think-tank. Launched in October 2007, its objective is to conduct research and promote informed debate across Europe on the development of coherent, effective and values-based European foreign policy. ECFR has developed a strategy with three distinctive elements that define its activities:

- A pan-European Council. ECFR has brought together a distinguished Council of over two hundred Members – politicians, decision makers, thinkers and business people from the EU's member states and candidate countries – which meets once a year as a full body. Through geographical and thematic task forces, members provide ECFR staff with advice and feedback on policy ideas and help with ECFR's activities within their own countries. The Council is chaired by Carl Bildt, Lykke Friis, and Norbert Röttgen.

- A physical presence in the main EU member states. ECFR, uniquely among European think-tanks, has offices in Berlin, London, Madrid, Paris, Rome, Sofia and Warsaw. Our offices are platforms for research, debate, advocacy and communications.

- Developing contagious ideas that get people talking. ECFR has brought together a team of distinguished researchers and practitioners from all over Europe to carry out innovative research and policy development projects with a pan-European focus. ECFR produces original research; publishes policy reports; hosts private meetings, public debates, and "friends of ECFR" gatherings in EU capitals; and reaches out to strategic media outlets.

ECFR is a registered charity funded by the Open Society Foundations and other generous foundations, individuals and corporate entities. These donors allow us to publish our ideas and advocate for a values-based EU foreign policy. ECFR works in partnership with other think tanks and organisations but does not make grants to individuals or institutions. ecfr.eu

ISBN: 978-1-916682-54-2. Published by the European Council on Foreign Relations (ECFR), 4th Floor, Tennyson House, 159-165 Great Portland Street, London W1W 5PA, United Kingdom.