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# The grand delusion

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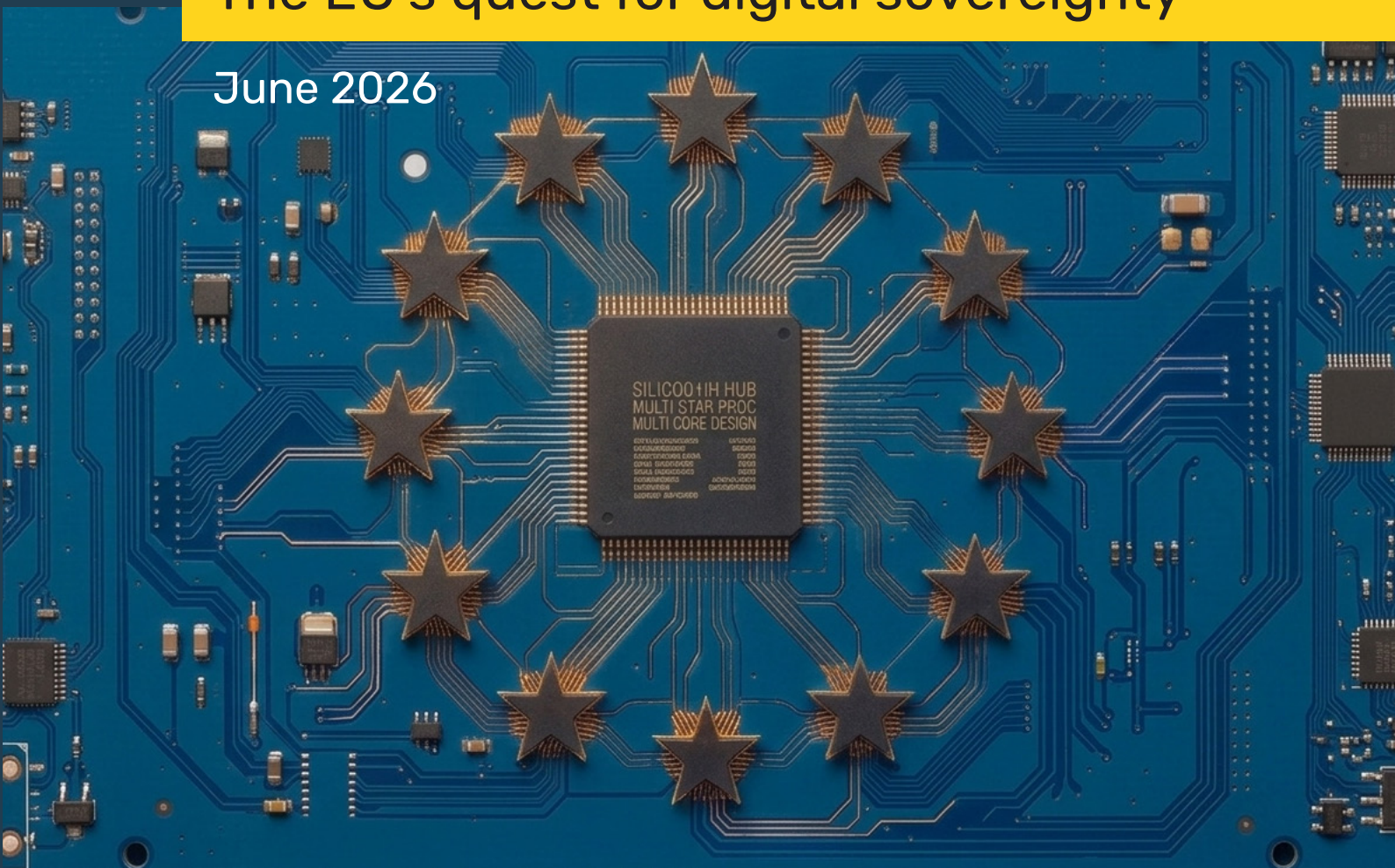
## The EU's quest for digital sovereignty

June 2026



# The grand delusion:
# The EU's quest for digital sovereignty

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## Executive summary

The central argument of this report is simple: European 'digital sovereignty' is a grand delusion. It is delusional politically, because sovereignty belongs to sovereign nation-states and the EU is not one. It is delusional empirically, because no actor in the world – including the United States and China – possesses sovereignty across the full digital stack. And it is delusional strategically, because the EU's preferred instruments – from regulation through champion designation and funding announcements to choosing champions and setting targets – have weakened the very conditions from which genuine technological power would have to grow. What Europe needs is not digital sovereignty. It needs agency, leverage and indispensability.

The modern digital economy is not a territory to be enclosed. It is a layered, global, interdependent network of platforms, supply chains, standards, research infrastructures, manufacturing capabilities and irreplaceable technical nodes. The United States dominates cloud, operating systems, browsers, frontier AI and chip design, but remains dependent on Taiwan for leading-edge fabrication and on ASML in the Netherlands for EUV lithography. China has built the most extensive apparatus of domestic digital control in the world, but cannot manufacture the most advanced chips at scale because it lacks access to ASML's EUV machines. The EU controls neither the platform layer nor the AI layer nor the cloud layer nor the end-user operating systems. Its distinctive power lies in regulation. But regulatory power is not digital sovereignty; it is the power to regulate technologies built by others. Ironically, the EU's regulatory sovereignty

depends on the continued presence of American and Chinese firms in Europe, while its rules make it harder for European firms to become their challengers.

This report illustrates the problem of the EU's regulatory mindset through two contrasting case studies. Minitel was the closest historical approximation to digital sovereignty in practice. France built, owned and controlled a national online infrastructure in the 1980s, years before the web. While it was technically advanced, commercially successful and socially embedded, it was closed, nationally controlled and monetised through France Telecom's monopoly. When the open internet arrived, the sovereign system became an obstruction. France, having pioneered mass-market online services, entered the internet age late and produced no global digital platform. Minitel shows that territorial control of a digital system can be achieved only at the cost of openness, scale and adaptability – the very qualities that made the internet dominant.

ASML shows the opposite path. It was not created by an EU digital-sovereignty programme. Its power rests not on owning a bounded territory, but on occupying an indispensable node in a global system. Every advanced semiconductor manufacturer depends on ASML's EUV lithography machines. ASML is powerful because the world must pass through it. That is not sovereignty. It is chokepoint power that gives Europe global leverage.

If one doubts the critical importance of chokepoints in geopolitics, one only has to examine the war in Iran today and the role of the Strait of Hormuz. This may be in the analogue world, but the Strait's strategic importance, and the power those who control it can command, reveals a sharp lesson for the digital world, too.

This is the report's core strategic lesson. In a networked world, power does not come from trying to replicate the entire stack behind a European wall. It comes from identifying and cultivating nodes without which the

system cannot function. Chokepoints confer agency: the capacity to shape outcomes because others depend on your capability. Ironically, it is the USA, not the EU, that has deployed ASML's chokepoint power as part of its geopolitical interests. Washington has used ASML to progressively restrict China's access to advanced semiconductor manufacturing capability. The EU's digital-sovereignty discourse performs ambition, but ASML demonstrates where the actual power lies in the twenty-first century.

Europe does have assets from which such indispensability can be cultivated: IMEC in semiconductor research, Airbus in large civil aviation, Vestas and Siemens Gamesa in wind, Fraunhofer in applied research, Novo Nordisk in GLP-1 therapeutics, SAP in enterprise software, and European strengths in photonics, quantum, industrial software, precision biotech and AI evaluation. None is a perfect analogue to ASML. But they show Europe's potential.

Where European institutions create conditions and step back, success is possible. Where they designate champions and announce targets – like Quaero, the attempt to produce a European Google, or Gaia-X, to produce a European cloud, or the Chips Act which aimed to create a European semiconductor manufacturing sector – all have failed. The list goes on. These are not isolated mishaps. They are symptoms of a technocratic system that confuses announcement with achievement, regulation with capacity, and target-setting with strategy.

The prescription is therefore not another digital-sovereignty programme by the EU Commission. It is them getting out of the way or facilitating their inhibition.

Finally, the report exposes how European political leaders hide behind the digital-sovereignty delusion. National governments remain the locus of democratic authority, taxation, coercion and responsibility. The EU can

coordinate, regulate and facilitate, but it cannot substitute for sovereign decision-making. The language of digital sovereignty has become an evasion: a way for national leaders and Brussels technocrats to speak the vocabulary of power while avoiding the burdens that power entails.

Europe's obstacle is not Silicon Valley or Shenzhen. It is the institutionalised technocratic mindset that prefers performative ambition to the hard, unglamorous work of building capability.

Europe needs chokepoints, not to be choked by the delusion of digital sovereignty.

**The future belongs to those who shape it, not to those who regulate or replicate what others have already built**.

## Introduction: the grand delusion

In a rapidly shifting world order, as technological power becomes the measure of geopolitical relevance, 'digital sovereignty' has become the European Union's new orthodoxy: a rallying cry, a governing slogan, and a promise that Europe can still claim mastery over its fate.

It appears in the 2020 European Commission communication on Europe's Digital Future, the Gaia-X cloud-computing founding declaration, the EU Chips Act preamble, the proposed AI Act's impact assessments, and the 2023 EU Economic Security Strategy.[1] It is invoked to justify programmes ranging from cloud-infrastructure investment to semiconductor manufacturing subsidies, regulation and data governance frameworks, and content-moderation rules. The EUR-Lex database identified 248 documents containing the term 'digital sovereignty' in their titles or bodies in 2024. There are now close to 100 technology-focused EU laws, and more than 270 regulators active in digital networks across member states, with overlapping mandates and uneven enforcement.[2]

The phrase 'digital sovereignty' might be proliferating, but it remains delusional: politically and philosophically, because sovereignty is a condition of sovereign nation-states and the EU is not one; empirically, because no actor in the world, including the United States and China, achieves meaningful digital sovereignty across the key dimensions of the modern technology stack; and strategically, because the regulatory architecture constructed in Brussels – the only sphere where the EU acts

– like a sovereign entity – has, paradoxically, made Europe a less hospitable environment for precisely the innovation that genuine technological capability requires.

### An evasion of responsibility

The pursuit of digital sovereignty is a modern European retelling of an ancient tragedy. Like Sisyphus, condemned to push his boulder endlessly uphill, the EU labours to construct a form of sovereignty that recedes with every attempt to define it. Each new initiative, from regulatory frameworks through industrial strategies to funding instruments, appears to advance the cause, yet none resolves the underlying contradiction. The summit is never reached because it does not exist.

At the heart of this futility lies an institutional evasion of responsibility. European leaders, though elected to govern sovereign nation-states, increasingly behave as if sovereignty has already been transferred to the European level. They speak and act as though the Union were a coherent political entity, capable of unified will and decisive action, rather than a contingent arrangement of states with divergent interests and uneven capacities. One example suffices: in February 2025, President Macron of France, arguing for the EU to launch a common borrowing capacity to fund the development of green technology, AI and quantum computing, warned that if the EU did nothing in the next three to five years, it would be swept aside in these sectors. His key point was that this 'must not be left to individual nations'.[3] Macron, like his equally technocratic counterparts across the continent, resembles an actor mistaking the stage for the world, performing the role of statesmen of a sovereign Europe, while the substance of sovereignty remains elsewhere.

This is not merely rhetorical excess; it is a structural evasion and strategic irresponsibility. Sovereignty in the contemporary international system still

resides with states that possess authority, legitimacy and the means to act. Yet Europe's leaders defer upwards to an abstraction, to 'European sovereignty', which lacks a singular demos, a consolidated executive and the capacity to enforce strategic decisions. Indeed, the real attraction of 'digital sovereignty' for elected leaders and the EU's unelected managerial elite is the absence of a 'digital demos' to whom they would be accountable. It presents the possibility of doing the impossible: competing in all spheres of the digital ecosystem upon which the world now depends. The result is a systematic evasion containing a peculiar double inversion: those who possess sovereignty behave as if they do not, while attributing it to an entity and managers that cannot exercise it.

In this sense, the pursuit of European digital sovereignty resembles not only Sisyphus's endless labour, but also a court assembled around an absent ruler. The language of power is invoked, the rituals of authority are performed, but the sovereign itself is missing. Europe's leaders become, in effect, men and women in borrowed robes – rulers of a sovereignty that does not exist – while neglecting the one that does.

The consequences are not abstract. By displacing responsibility onto a fictional centre, European governments risk forfeiting their capacity to act in domains where action is urgently required: technological innovation, infrastructure, security and industrial policy. The global economy is based upon interdependence. Cooperation between states is not only desirable but necessary. But cooperation is not sovereignty, and to confuse the two is to substitute aspiration for strategy.

The demand for 'digital sovereignty' functions less as a strategy than as a displacement exercise. It is more a performance which relocates responsibility away from national governments – where authority, resources and democratic accountability still lie – and projects it onto a European plane

that cannot bear its weight. What appears as ambition is, in practice, deluded evasion: a way of speaking the language of power while avoiding the burdens that power entails.

This report argues that EU digital sovereignty policy is performative in the precise sense: it generates demonstrations of strategic commitment, press releases, funding announcements, manufacturing targets and national champions, but without the structural conditions that produce genuine technological power. The performance is not cynical. It is the inevitable output of a technocratic system whose architecture rewards visible commitment over patient condition-creation, and unfalsifiable objectives over measurable outcomes for which there is no accountability when these artificial targets are not met.

### A consequential performance

Europe has not become more technologically independent because of its digital sovereignty programmes; in several respects, it has become less so. Gaia-X, the Franco-German cloud-sovereignty initiative launched in 2019, was not defeated by open opposition from the American hyperscalers but domesticated by their participation: within two years, the very firms it was meant to constrain had entered the tent, helped recast sovereignty as a matter of standards and compliance, and left Europe with frameworks rather than production-ready cloud capacity.[4] Ironically, Europe's market share dramatically fell from 27 per cent in 2017 to around 10–13 per cent by 2024–2025.[5]

The EU Chips Act committed €43 billion to doubling Europe's share of global semiconductor manufacturing, a target the European Court of Auditors characterised as 'essentially aspirational' before its centrepiece, the Intel Magdeburg fab, was cancelled.[6] Quaero, a Franco-German search

project aimed at rivalling Google, absorbed some €200million in public funds and produced nothing of commercial consequence.[7] Northvolt, the Swedish battery manufacturer designated a European green-transition champion, filed for bankruptcy in Sweden on 12 March 2025, after failing to secure necessary funding to continue operations. This followed a previous US Chapter 11 bankruptcy filing on 21 November 2024.[8]

The pattern is not bad luck. It is structural. It is the result of the evasion of responsibility at every level – the EU and the political leadership across Europe's member states – embedded in a technocratic mentality that arrogantly believes it can conjure technological power through diktat. As I noted in my earlier report, *Digital Sovereignty in the New World Order: Reforming the EU's approach to start-ups, risk, and innovation*, this has fostered the belief that regulating other people's technologies – the 'Brussels Effect' (the EU's regulatory reach extending globally through the size of the single market) – represents a viable strategy for the future.[9] This regulatory success, while an expression of EU power, underpins the delusion that market size and its regulation can substitute for technological capability. Ironically, in practice, this entrenches the dependence it is supposed to contain. Without US and Chinese Big Tech as subjects of its rules, the EU would have no regulatory leverage at all. And the cost of the regulatory stack Brussels has accumulated is a burden that Europe's small businesses and startups have to contend with, which handicaps their ability to grow.

This regulatory impulse is now recognised by Europe's leading technology executives as the barrier it is. The CEOs of several European technology companies, including ASML, Airbus, Ericsson, Mistral AI, Nokia, SAP and Siemens, published an opinion piece in several newspapers recently calling for a reduction and simplification of AI regulations. 'More than three

years after the "ChatGPT moment"', they stated, 'Europe is still debating regulation, while others have long shifted focus to scaling AI in physical systems and robotics'. The result is 'fragmented markets and subsidised rivals with very strong market penetration in the EU'.[10]

And yet it continues. The Commission, having learnt nothing from past failures, is about to launch a new Chips Act and a Cloud and AI Development Act (CAIDA), which respectively aim to ring-fence subsidies and public procurement for homegrown companies, in a bid to stoke local infrastructure and shrink dependence on foreign tech.[11] The Grand Delusion rolls on regardless.

To explain the significance of this Grand Delusion, this report contrasts two illuminating case studies: the cases of Minitel – the state-run French videotex network launched in the 1980s to deliver online services through dedicated terminals – and that of Advanced Semiconductor Materials Lithography (ASML) – the Dutch firm that holds a one-hundred-per-cent global monopoly on extreme ultraviolet (EUV) lithography equipment essential for manufacturing the world's most cutting-edge semiconductors.

### The folly of digital sovereignty and the rise of chokepoints

Minitel is the closest historical approximation to digital sovereignty in practice. France owned, operated and monetised its own national videotex system a decade before the web. It was a genuine achievement at the time. But ironically, it also resulted in France being one of the last major economies to enter the open internet era and allowed the US to gain its global platform dominance.

In stark contrast, ASML's power was not produced by any 'digital sovereignty' programme conceived of in Brussels. It emerged over four

decades of accumulated engineering expertise, extraordinary courage and risk-taking, patient capital that took a long rather than a short-term outlook, a network of irreplaceable supplier relationships, and a series of eye-watering technical bets that solved physics problems that were not known to be solvable when first attempted. Today, every advanced chip manufactured anywhere in the world is made using a machine built in Eindhoven, home to ASML.

Drawing on insights from Minitel's failure and ASML's success, the report identifies one clear strategic goal for Europe: to identify the domains where European industry has accumulated an advantage, where that advantage is defensible, and where no one else has yet established an unassailable position.

In other words, it needs to stop performing sovereignty and start cultivating indispensability, which means removing funding barriers and regulatory requirements that act to inhibit start-up innovation and risk-taking. The test should be simple. If the world can function without passing through your node or chokepoint, do not prioritise it. If it cannot, then you are creating conditions in which you exercise leverage – and thus agency – without needing to control territory or pretend you are exercising sovereign power.

The report concludes with two key insights.

First, in an era in which technological capability and strategic security are inextricably linked, pursuing 'digital sovereignty' is a category mistake, because sovereign control is a delusion in a digital economy structured around layered interdependence and global value-chains. The network is the territory. Indispensability is agency. The power of a chokepoint in an interdependent world grows rather than diminishes as the system grows. It is a hedge rather than a guarantee against obsolescence and disruption.

Second, if Europe is serious about building real digital capacity, the primary obstacle it must address is not Silicon Valley or Shenzhen, but the sclerotic, death-grip of the delusional, institutionalised technocratic mindset of the EU and Europe's political elite. Europe needs chokepoints, not to be choked by the elitist delusion of 'digital sovereignty'.

**The future belongs to those who shape it, not to those who regulate or replicate what others have already built.**

# 1 Sovereignty and the myth of digital sovereignty

### The classical concept

Sovereignty has a precise lineage. Jean Bodin, writing in 1576 in the aftermath of the French Wars of Religion, defined it as 'the absolute and perpetual power of a commonwealth', a supreme, indivisible authority to make and unmake law within a territory.[12] Hobbes gave the concept its recognisably modern shape, by drawing the populace into the constitution of sovereignty: in his view, subjects surrender their natural liberty in exchange for order.[13] Sovereignty denotes three interlocking properties: a monopoly on legitimate coercion within a territory, legal supremacy over all other authorities, and the recognition by other sovereigns that constitutes the state as a subject of international law.

The European Union, on any of these criteria, is not a sovereign. It has no demos. It has no monopoly on coercion. It has no independent taxing power. Its treaties are the product of intergovernmental negotiation and must be ratified, or rejected, by national parliaments and, in several member states, by national referendums. The 'constitutional' treaty of 2004 was rejected by French and Dutch voters in 2005 and never ratified. The doctrine of the primacy of EU law, developed by the Court of Justice in *Van Gend en Loos* (1963) and *Costa v ENEL* (1964), is a juridical construct upheld within the member states' constitutional orders by consent.[14] The EU is a remarkable political construction, but it is not a state and its unelected leaders in the EU Commission are not sovereigns.

This is not a pedantic point. If sovereignty denotes the supreme authority to decide, then 'digital sovereignty' for a non-sovereign cannot denote supreme authority over anything; it can at most denote a collection of aspirations. The phrase functions as a rhetorical displacement: it allows policymakers to speak the vocabulary of power while evading the question of who, in concrete political terms, would decide and take responsibility for outcomes. The consequence of this evasion of responsibility is that national governments have outsourced many of the relevant competences to a body that is not sovereign.

What makes digital sovereignty disingenuous is that the world it projects flies in the face of empirical reality. Sovereign states make up the world order, but that does not mean they can act freely at will. Power and interdependence define a global order of enormous complexity. No sovereign state today, from the USA and China onwards, exercises complete autonomy.

The often-expressed desire by European political leaders to break from Europe's dependence on technologies produced elsewhere might sound good. But it exposes the extent of Europe's dependency. German Chancellor Friedrich Merz says Europe is 'far too dependent' on US software.[15] MEPs agreed and recently called for the European Parliament to abandon Microsoft 365.[16] Finnish MEP Aura Salla has become a standout decrier of Microsoft (on which the EU runs) declaring that 'American companies think we are fools – giving them all our data for free and then buying their services',[17] which they could 'turn us off inside one hour'.[18] When German Green MEP, Alexandra Geese, argues for Europe to decide and develop its own digital backbone to break the social-media and cloud infrastructure controlled by large corporations from the US and China,[19] the sabre-rattling rhetoric of independence mistakes dependency for a procurement problem, when it is really a civilisational infrastructure problem. Europe is not merely buying foreign tools;

it is running core functions of state, economy and everyday life on systems it did not build and cannot easily replicate.

The analogue world, and especially the digital one, is a complex web of interdependencies that enable the uneven exercise of power and thus the ability to shape outcomes. In reality, there are no digitally sovereign states in existence, and this includes the powerful and leading ones, the USA and China.

### The analogue world is a network of interdependence

Before turning to the digital layer, it is worth establishing the baseline in the analogue economy. The OECD's 2023 edition of the Trade in Value Added (TiVA) indicators captures the structure of the global economy at the level of intermediate inputs – the components, materials and services that cross borders before final goods reach consumers.[20] On those indicators, the United States derives roughly 10 per cent of the value of its gross exports from imported intermediate inputs; China around 14 per cent; the EU27 (excluding intra-EU trade) around 16 per cent. No large economy is self-sufficient, and those that attempt it pay heavy costs. The US has become steadily more connected to the global production system, not less, over the period since 2008; China's 'Made in China 2025' strategy reduced but did not eliminate its dependence on imported intermediates; the EU sits at the denser end of the interdependence spectrum.[21]

The point is simple: the global economy of goods and services is a network of interdependent producers, not a collection of self-sufficient nations. Sovereignty has long coexisted with deep interdependence because the two operate on different planes: a state may hold the monopoly on legitimate coercion within its territory and simultaneously rely on foreign suppliers for half the inputs its industries need.

Nor is the digital world 'sovereign', even for the US and China

The myth of digital sovereignty collapses still more quickly when examined empirically. No state is digitally sovereign across the modern technology stack. The layers that matter – cloud infrastructure, operating systems and browsers, frontier AI, leading-edge chips, internet governance – are distributed across jurisdictions, firms and alliances, and every large actor depends on nodes controlled by someone else.

The United States is the closest thing to a digitally sovereign power today. Its firms dominate cloud (Amazon, Microsoft and Google held 63 per cent of global enterprise cloud infrastructure spending in Q3 2025). Its mobile operating systems, Android and Apple's iOS, represent approximately 70 per cent and 29 per cent respectively of global mobile OS share. US browsers like Chrome represents approximately 71 per cent of global browsers, and frontier AI remains mainly US-based. Stanford's AI Index recorded 40 notable US models in 2024, against 15 for China and three for Europe.[22] The US hosts the Internet Corporation for Assigned Names and Numbers (ICANN), a non-profit organisation that coordinates the internet's technical infrastructure, and the Internet Assigned Numbers Authority (IANA), a department within ICANN responsible for managing unique, global technical identifiers like IP addresses and domain names.[23] And US firms command just over half of global semiconductor revenues.

Yet the same country that designs the chips cannot fabricate them: America's share of global chip manufacturing fell from 37 per cent in 1990 to about 10 per cent in 2022, while Taiwan accounts for more than 90 per cent of leading-edge manufacturing. Critically, the EUV lithography without which that manufacturing cannot proceed is made by a single Dutch company, ASML.[24] The US might be platform-sovereign; but it remains only partly supply-chain-sovereign.

China comes closer to what a territorially-based digital sovereign state might look like. It has built the most comprehensive apparatus of domestic digital control in the world: a Great Firewall that blocks or constrains most major Western services, three domestic cloud champions (Alibaba Cloud at 36 per cent, Huawei Cloud at 16 per cent, Tencent Cloud at nine per cent of the mainland market in Q3 2025), a rising indigenous operating-system layer (HarmonyOS at approximately 14 per cent of Chinese smartphone share in the same quarter), and formidable output of AI patents and papers.[25]

But China has never been sold an ASML EUV system, and is consequently unable to fabricate the most advanced logic chips at scale. A December 2025 regulation requiring Chinese fabs to use at least 50 per cent domestically produced equipment is both the expression of an intense sovereignty ambition and an admission that the ambition has not yet been achieved.[26] Outside its borders, Alibaba Cloud holds only approximately four per cent of global cloud share, a rounding error in the extraterritorial politics of computing.[27] China is sovereign at home; but it is only partly stack-sovereign.

The contrast with the EU is stark. It does not own the cloud (the US big three held approximately 68 per cent of global spending in Q4 2025, and 52.7 per cent of EU enterprises used paid cloud services in 2025); it does not own the end-user platforms (Android holds 60.5 per cent and iOS 39 per cent of European mobile share; Chrome 60.7 per cent of European browsers); it is a minor player in frontier AI; and on chips, the Court of Auditors judges the flagship 20 per cent manufacturing target 'very unlikely' to be met.[28] The table below summarises how each of the three supposed digital sovereigns performs across the principal layers.

| Layer | United States | China | European Union |
|---|---|---|---|
| **Cloud infrastructure** | Dominant (AWS/MS/ Google ~63% global, 2025) | Domestic champions strong; ~4% global | Dependent on US hyperscalers; 52.7% EU enterprises use paid cloud (2025) |
| **Mobile OS** | Android/iOS (US-controlled) ~99% global | HarmonyOS ~14% in China; Android still dominant | None |
| **Browsers** | Chrome 71% / Safari 15% / Edge 5% (global) | Mixed; state-promoted alternatives in China | None |
| **Frontier AI (2024)** | 40 notable models and four notable companies (XAI, Anthropic, Google, OpenAI). | 15 notable models; 69.7% of AI patents (2023), leading in video (Bytedance and Seedance) and notable companies: Deepseek, Zai, Alibaba and Moonshot AI | Mistral which is very far behind |
| **Chip design** | >50% of global chip revenues | Rising but constrained | Strong in auto/industrial niches |
| **Leading-edge fab** | ~10% of global capacity | No EUV access | No leading-edge capacity |
| **EUV lithography** | Dependent on ASML (NL) | Blocked from EUV | Monopoly (ASML), genuine chokepoint |
| **Internet governance** | ICANN/IANA anchored in US | Pushes alternative governance | Participates; does not host |
| **Summary** | Platform-sovereign, partly supply-chain sovereign | Sovereign at home, partly stack-sovereign | Regulator-sovereign, not stack nor supply-chain-sovereign |

The conclusion is unambiguous. No actor in the world is digitally sovereign in any operational sense. Each occupies a different pattern of dependence. The United States dominates the platform and AI layers, but not the physical manufacturing chain; China controls the domestic information space but not the hardware stack on which it runs; the EU controls neither, and compensates with the export of regulatory norms. Empirically, the term 'digital sovereignty' has no referent. It is a slogan in search of a condition that does not exist.

### The strategic self-harm of regulatory sovereignty

The most distinctive and consistent feature of the EU's digital sovereignty strategy is not the occasional flagship industrial project but its accumulated regulation 'stack'. The list is endless and impressive: GDPR (2018), DMA and DSA (2022), Data Governance Act (2022), Chips Act (2023), Data Act (2024), the AI Act (2024) and the Cyber Resilience Act (2024). By 2024, the Draghi report counted more than 100 technology-specific EU laws and more than 270 digital-sector regulators.[29] The regulatory stack is the default setting of an institution whose comparative disadvantage in technological sovereignty is only compensated for by its rulemaking.

The economic consequences are well documented. Academic research finds that GDPR produced a roughly 26 per cent reduction in EU technology venture capital relative to US comparators in the years following implementation, and that European companies store 26 per cent less data and perform 15 per cent less computation than US counterparts of comparable scale. The 'kill zone' effect – the tendency of compliance costs to disadvantage start-ups relative to incumbents that can amortise fixed compliance across larger revenue bases – is documented across multiple industries.[30] The regulation

that is sold as a sovereignty instrument operates, for European innovators, as a tax on growth.

The strategic paradox is therefore sharp. The 'Brussels Effect' requires the presence of US and Chinese Big Tech in Europe: it is only by regulating those firms that European rules acquire extraterritorial reach. Sovereignty-as-regulation presupposes dependence on those against whom sovereignty is ostensibly asserted. At the same time, the regulatory burden falls hardest on the European companies that might, in principle, have grown into challengers. The result is a pattern in which the regulator maintains a form of power, but the regulated ecosystem hollows out. This is the opposite of what sovereignty is supposed to produce.

The asymmetry can be traced in the investment data. In 2024, European venture capital raised roughly one-fifth of what was raised in the United States. The gap widens sharply at the growth stages where firms either become platform-scale or are acquired, and it widens further still once the discount is applied for the smaller size of exit markets available to European start-ups that have not already moved their incorporation to Delaware. The regulatory architecture is not the only cause of this disparity, but it is an amplifier of every other cause. It raises the cost base of compliance disproportionately for the smaller firm; it compresses the time horizon over which patient capital can earn its returns; and it imposes, through the fear of cross-border enforcement action, a conservatism in product design that the competitor in San Francisco or Hangzhou does not face. The cumulative effect is a structural bias toward the incumbent and against the entrant.[31]

### From territory to network

The examples above highlight how mistaken the concept of 'digital sovereignty' truly is. Politically and philosophically, 'digital sovereignty'

has no meaning in the hands of a non-sovereign entity like the EU. Empirically, no actor in the world is digitally sovereign: each is caught in a pattern of strategic interdependence that is irreducible to territory. Strategically, the EU's attempts to manufacture sovereignty through regulation have damaged the competitive dynamism from which genuine technological leverage would have to grow.

The concept of sovereignty itself is not the problem. National governments continue to be the locus of democratic accountability and the unit that possesses the authority to tax, legislate and coerce. The problem is the attempt to attach that concept to a domain, the global digital economy, whose structuring principle is layered interdependence rather than territorial control. In such a domain, the relevant form of power is not sovereignty but indispensability: the ability to occupy a node through which others must pass. The network is the territory.

This is the conclusion of a recent study, 'Sovereignty in the Age of AI' (2026).[32] Sovereignty does not mean independence from all others. Instead, it should be viewed as the ability to act strategically – with agency and choice – in a world that is irreversibly interdependent. No state can dominate every layer of the AI stack. But deliberate choices about where to build strength and influence are now urgent. Becoming indispensable in specific parts of the AI ecosystem gains leverage across it, even if it's not possible to control it all. Instead of pursuing a strategy that aims to replicate or imitate what exists – for example, a strategy that seeks to own every model and data centre – the priority is building domestic strengths that represent chokepoints in global value and supply chains.

It's worth recalling that interdependence never prevented democratic nations from going to war with each other in the twentieth century. The enduring reality of the world order under modern capitalism is that isolation

and self-sufficiency have always been unfeasible. What is different today, however, is that the complexity of technological power in the age of AI is now more a matter of extraterritorial agency rather than territorial supremacy.

This is why the pursuit of 'digital sovereignty' obscures more than it enlightens. The term carries an inescapable association with supreme authority within a bounded territory. Stretching it to cover negotiated interdependence invites the very category confusion that the redefinition is intended to correct. To gain strategic clarity, one key point stands out above all others: what Europe needs is agency that provides it power to make choices. The focus must be on the ability to develop and hold or have influence over global supply-chain chokepoints – those critical nodes upon which the value and supply chains flow that determine outcomes. Without chokepoints there is no leverage, only subservience to forces beyond one's control. Indeed, without this leverage, sovereign power is emptied of meaning and a recipe for fatalism and submission.

The remainder of this report develops this argument through two cases. Section 2 examines the closest approximation to digital sovereignty in practice, Minitel, and explains why its success led to failure. Section 3 turns to ASML, the European firm whose power rests on precisely the principle of networked indispensability. The final two sections draw out the lessons for European strategy in an era of chokepoints.

## 2 Minitel and the failure of digital sovereignty

The Minitel story contains some key insights into the delusion of digital sovereignty. It highlights the difference between a sovereign platform and a technological chokepoint in a global networked system. Far from evolving into an indispensable platform within a larger, interoperable order, Minitel remained a closed, domestic system managed by an incumbent telco whose defence of it prevented France from developing global platforms on a scale with Google or Amazon.

In 1999, France had 5.7million internet users. Germany had 12.3million. The United Kingdom had 13.9million. The United States had 110million. These figures are striking not just because of France's low numbers but because France had been online for over a decade before everyone else. It had built and deployed the world's first mass-market online service: Minitel. Its citizens were conducting banking transactions, browsing product directories and exchanging messages through networked terminals 15 years before most of the world's internet users opened a browser. When Google, Amazon and eBay were still start-ups in the mid-1990s, France was booking train tickets on Minitel. By every reasonable metric, France should not only have been first into the internet era but also have owned the global platforms we all take for granted today, rather than being the last among its peers, with no Big Tech companies at all.[33]

But France was one of the last to enter the internet age. The reason is not primarily technical but institutional and strategic. The organisation charged with providing France's digital infrastructure was also the organisation that

owned, operated and derived substantial income from the system the internet disrupted and replaced. France Telecom, the state telecommunications monopoly, had both the means and the motive to slow France's transition to the open internet – and it used both. The result was a decade of competitive disadvantage from which France and Europe's digital economy has never fully recovered.

Minitel is, in microcosm, what digital sovereignty means in practice: a nation-state that built, owned and controlled its own digital infrastructure, which was technically superior to anything available elsewhere and deeply embedded in the nation's social and commercial fabric. It was not performative sovereignty. It was real. And precisely because it was real, because France Telecom's monopoly control was total and its revenues from Minitel were substantial, the moment the next technological paradigm arrived and overturned the existing orthodoxy, the apparatus of sovereignty became the apparatus of obstruction.

### Sovereignty as the founding logic

Minitel did not emerge from a technology company's product strategy or a venture capitalist's portfolio. It emerged from a state commission's analysis of geopolitical risk. In 1978, the senior civil servant Simon Nora and the businessman Alain Minc delivered to President Valéry Giscard d'Estaing a report titled *L'Informatisation de la Société*, which would prove to be among the most consequential technology-policy documents of the twentieth century.[34]

Nora and Minc's central argument was direct: the computerisation of society was not a neutral technical process, but a geopolitical contest. US dominance of computing hardware, software and data networks, epitomised by IBM at the time, represented a structural threat to French sovereignty.

Unless France built its own information infrastructure, it would become dependent on systems it did not control, subject to the political priorities of a foreign government.

The diagnosis was credible and a wake-up call. In 1978, fewer than seven million telephone lines served 47million French citizens, a telephone penetration rate far below that of comparable European nations. France's computing and communications industries were underdeveloped relative to American incumbents. Telematics – the convergence of telecommunications and informatics – was the solution: digitise the telephone network, layer interactive services on top, and give France a domestically controlled information infrastructure. The political resonance was immediate, and the Direction Générale des Telecommunications (DGT), the state telecommunications directorate that became France Telecom, was charged with implementation.

Two decisions made in the early implementation phase would prove structurally determinative. The first was the distribution of Minitel terminals to French households at no cost, beginning in 1984. Rather than requiring consumers to purchase hardware, the DGT absorbed the terminal cost, guaranteeing mass adoption and eliminating the hardware barrier that had killed comparable systems in other countries. The second was the creation of the Kiosque billing system, introduced in March 1984: a centralised metered billing mechanism through which all Minitel service charges were collected by the DGT and remitted to service providers, with the DGT retaining a share.[35] These two decisions together defined Minitel's institutional character: a closed ecosystem, controlled at the infrastructure level by the state operator, in which all commercial activity was intermediated and monetised by France Telecom.

### A true success story

It is important to be precise about what Minitel achieved, because the tendency to frame it retrospectively as a failure distorts the analytical lesson. In its first decade, Minitel was a genuine technological and social success by any objective measure. By the early 1990s, approximately 6.5million terminals were in circulation, logging 90million connection hours per year, with a system penetration rate approaching 50 per cent of the French working population. The network supported over 20,000 services. These included online directories, travel and hotel booking, banking, government information, consumer retail and a text-based messaging and chat infrastructure that would not be replicated in other countries until the late 1990s.

By 1998, Minitel was generating €832million in revenue (equivalent to around €1.5 billion in today's money), of which €521million was remitted to the 20,000-plus service providers operating on the network.[36] Even after the internet era began, rents remained significant. France's independent regulatory authority for telecoms, internet, postal services and press distribution (ARCEP) later showed that revenue from 'services kiosque télématique' was still €795million in 2000 and €265million in 2005, declining steadily but not disappearing overnight.

Minitel was therefore not just a public utility. It was a revenue-bearing institutional order. France had built an e-commerce, online information retrieval and networked communication system that scaled as it grew, a decade before the web.

The underlying sovereignty objective had been achieved. France's digital communications infrastructure was domestically owned, domestically controlled, technically self-sufficient and financially self-sustaining. No US company was extracting rent from France's digital economy. The DGT – and from 1991, France Telecom – was the sole intermediary between the

French public and its networked digital services. This was not performative sovereignty. France had built, operated and derived commercial value from a national digital infrastructure that was the envy of comparable economies.

### The internet and why the monopoly could not adapt

The internet arrived in France as a commercial proposition in the mid-1990s, as it did elsewhere. The critical difference from the Minitel context was structural: the internet was an open, distributed, packet-switched network that was not owned or controlled by any single operator. As long as the rules of the open-architected highway were recognised and respected, literally anyone, anywhere with connectivity, could innovate and provide services without needing permission. Its revenue model was not metered connection time but advertising, subscription and e-commerce, none of which passed through a centralised telephone billing system. But for France Telecom, the internet was not merely a new technology. It was a disruptive, existential threat to a profitable, embedded business model.

Minitel was a captive system that, once installed, required no new capital investment to maintain. But every French household that connected to the internet rather than using Minitel was a metered connection that France Telecom no longer intermediated. Every French company that migrated its directory, booking or information service to a website was a service provider whose Kiosque payments ceased. The financial incentive to slow internet adoption was direct, quantifiable and operated on France Telecom's core revenue line. Which is why the OECD's identification of the Kiosque system as 'the principal obstacle' to Minitel's continued growth was spot on.[37] What had once solved trust and payments had become a brake on technical and commercial evolution.

France Telecom's response was monopolistic, not innovative. Its goal was to restrict the internet or release it in a diminished form tethered to its existing technology, over which it held monopoly power. France Telecom was not oblivious to the internet. Its engineers were aware of its architecture and capabilities from the early 1990s. The company's internet offering, Wanadoo, did eventually launch. But the offering was structured, priced and promoted in ways that preserved Minitel's primacy wherever possible. Internet access was expensive relative to the European average. Bandwidth was constrained. Dial-up access was metered because telephone calls were metered.

France Telecom was not a private firm managing a technology transition. It was a partially state-owned enterprise with a monopoly guaranteed by law until 1997, staffed by a civil-service corps with statutory employment protections, and managed by an executive cadre trained in the French grandes écoles tradition of technocratic state capitalism. Its instinct was not disruption but administration. The internet's defining characteristics – openness, decentralisation, permissionless innovation and the absence of a controlling intermediary – were antithetical to the institutional values of a company that had built its entire commercial model on being the controlling intermediary. The network effects of the existing system worked precisely in reverse: the more embedded Minitel was in French commercial life, the higher the switching cost of replacing it.

This is why the decisive failure was institutional and strategic, not technical. The problem, which, to be fair, could not have been foreseen at the time, was that digital sovereignty had been vested in a monopoly operator whose revenues, organisational routines and authority were tied to its incumbent system. Minitel had become a French economic and cultural institution. The open internet meant catastrophic disruption, culturally and

economically cannibalising a profitable national platform. That is not the sort of transition monopolies make quickly or willingly.

France did not lack engineers, research capacity or digital ambition. Indeed, French R&D was world-class. After all, it was the French who invented the Global System for Mobile Communications (GSM), the standard for second-generation (2G) digital cellular networks, which enabled voice, text messaging (SMS) and basic data services. Europe became the world's most widely adopted 2G standard using SIM cards, enabling international roaming. France had built one of the most advanced telecommunications networks in the world.

Yet the writing was on the wall. The 1997 ITU statistics record that at the end of that year of Minitel's unbridled success, France had 1.7 per cent of its population as internet users, against 22 per cent in the United States and 10 per cent in Germany.[38]

### The lost decade

The political rupture came from outside France Telecom. In August 1997, the newly appointed prime minister, Lionel Jospin, delivered a speech at Hourtin that was widely understood as a public rebuke of France Telecom's institutional conservatism. Jospin declared that France had to 'enter the information society' and that the internet represented an opportunity the country could not afford to miss. The speech was significant not because it resolved the structural problem. It did not. But it signalled that the French state's institutional support for France Telecom's Minitel protectionism was withdrawn. Partial privatisation had already begun; full minority private ownership followed by 1997, with the state falling below the 50 per cent threshold only in 2004.[39]

There is a further irony in the sequence: the 1997 conversion of France Telecom into a commercial société anonyme was the direct consequence of Directive 96/19/EC, the EU directive setting 1 January 1998 as the deadline for full liberalisation of European telecommunications markets. The Socialist Jospin, who had campaigned against privatisation in the spring 1997 legislative elections, presided over France's largest IPO to that date four months later. The EU directive gave him the external constraint he needed to implement a decision that he could not sell politically at home. This is blame-shifting to Brussels at its purest: a political class that cannot bring itself to own a difficult decision, outsourcing the responsibility for it to the EU whose legitimacy is permanently contested but whose convenience is permanently useful.

The Minitel bubble had burst. France's early adoption of Minitel had created direct switching costs that inhibited the transition to internet-based commerce. French consumers and firms, having already invested in Minitel-based commercial relationships, did not perceive the internet as advantageous by comparison and accordingly delayed adoption.[40]

The irony is precise and instructive. The Kiosque billing system, which had made Minitel commercially viable by solving the payment problem for online services, was itself a form of the platform model. France Telecom operated as a two-sided market intermediary 15 years before the term existed. Had France's 20,000 Minitel service providers been able to migrate their commercial relationships to the open internet and had France Telecom's institutional interests not been structurally opposed to facilitating that migration, France – and Europe, for that matter – might have entered the web era with the densest commercial internet ecosystem in the world. The expertise existed. The consumer habituation existed. The payment norms

existed. What did not exist was an incumbent willing to cannibalise its own position to enable the transition.

The most measurable consequence of France's delayed internet transition is the absence of a global-scale French digital company from the Minitel era. The window during which the structural conditions for global platform formation existed – high early-adopter density, network effects still forming, incumbents not yet entrenched – had passed. Recall, that it was only in 1994 when Amazon, directly leveraging the US's early and high-penetration consumer internet adoption, launched its online bookstore. Google was founded in 1998, on the back of 110million internet users, which provided the search traffic and advertising demand that validated and built its platform model. eBay, Yahoo and PayPal similarly emerged from a consumer internet ecosystem that the US had been building since the early 1990s. France, with 5.7million internet users in 1999, had no consumer internet ecosystem of comparable density from which a global platform could have emerged, had it been willing or able to.

There is another chapter to this story, which we will discuss in Section 4: what happened to France Telecom after its privatisation in the late 1990s under both domestic and EU Commission pressure. That experience set the precedent for the dire state of Europe's fragmented telecommunications market and infrastructure. Even more disastrously, it helped to inform much of today's deluded belief that EU bureaucrats can dictate digital policies and strategies.

### The Minitel lessons

The key lesson from the Minitel experience concerns the relationship between digital sovereignty and openness. Minitel succeeded in achieving sovereignty over France's digital infrastructure by making that infrastructure

closed. It was closed to foreign competitors, to unapproved service providers and to technical evolution it did not control. This made sovereignty achievable and commercially sustainable. But it was also what made the system brittle when exposed to a more open alternative that it failed to anticipate or accept.

The internet's success was not incidental to its openness; openness was its competitive advantage. Minitel was appropriate to the problem it was solving in 1978: deploying a national, closed information network in a country with low telephone penetration and high US technological dependency.

But it was inappropriate to the problem France faced in 1994: adapting to an open, distributed, global information network whose value lay precisely in its refusal to be controlled by any single operator. Territorial power was giving way to networked power.

By the time France genuinely pivoted to the open internet in the mid-2000s, the window in which a domestic platform champion might plausibly have emerged had closed. Google had consolidated global search; Amazon had taken European e-commerce; Facebook emerged to shape social media globally. In short, the platforms that would go on to structure the next two decades of digital life were already entrenched. France, the country that had invented mass-market online services, ended up as one of the slowest major economies in Europe to build an internet-native industry.

With the benefit of hindsight, the key lesson of the Minitel experience was that to compete and succeed in the era of the internet, the closed control of bounded space had become increasingly irrelevant. The emerging source of power lay in the economics of a borderless and interdependent networked world. Openness provided scale, scale provided the foundation for investment upon which innovation could flourish. Platforms, the infrastructure these relied upon, the data centres that captured and monetised consumer and

business consumption created a geopolitical reality in which the only strategic imperative was the identification of indispensability in the rapidly evolving networked ecosystem.

Championing 'digital sovereignty' today by replicating what exists or building from scratch in markets where incumbents already have decisive scale advantages is fighting yesterday's battles. This failure might be excusable for those directly involved in the European digital economy during the late 1990s. But to repeat this category error in 2026 is either ignorant or blind or both. Either way, it is criminal political irresponsibility.

The success of the Dutch company ASML, which has achieved precisely the strategic positioning of indispensability so necessary today, is the focus of the next section.

# 3 The ASML success story[41]

ASML is the clearest counter example to the EU's digital-sovereignty approach.

The Dutch lithography firm holds a one-hundred-per-cent global monopoly on extreme ultraviolet (EUV) lithography equipment, the machines without which no advanced semiconductor can be manufactured. Every advanced chip made anywhere in the world, every iPhone, every Nvidia GPU, every high-end chip in a car or data centre, AI accelerator, car, fighter jet and pacemaker in the world is produced on equipment made in Veldhoven, just outside Eindhoven, in the Netherlands.[42] This is the one domain in which Europe exercises undisputed indispensability at the leading edge of the technology stack. It is therefore essential to understand what produced ASML and, equally, what did not.

### The unplanned accumulation

ASML was founded in 1984 as a modest joint venture between Philips and the Dutch industrial-technology firm ASM International, with fewer than 50 employees, a leaky shed working on wafer steppers and no domestic market. For its first 15 years, it was a minor player in lithography, overshadowed by American and Japanese incumbents such as Canon and Nikon. Nothing about its early history suggested that it would come to occupy the single most critical chokepoint in the twenty-first-century technology economy. Its transformation into a global monopoly is the story of an industrial company willing to make bets at a scale and on a timescale that

no European policy instrument – and few private firms anywhere – would have authorised.

The decisive bet was EUV lithography. When ASML committed to developing machines using light at a wavelength of 13.5 nanometres in the late 1990s, the physics problems involved were not known to be solvable. EUV required generating coherent light from laser-excited tin-droplet plasmas, fabricating almost-perfect reflective mirrors to sub-nanometre tolerances, engineering vacuum systems of unprecedented scale, and integrating all of it into a machine reliable enough for high-volume manufacturing. The development timeline ran from 1997 through to the first production-capable systems in 2017 – a 20-year bet made by a company that for most of that period was not large enough to absorb the loss if the physics did not cooperate.[43]

Three structural features of ASML's evolution are relevant to the argument. The first is the network of suppliers around the machine. The EUV system is not an ASML product in the ordinary sense; it is the output of a tightly integrated industrial cluster in which Carl Zeiss SMT in Germany produces the optics (mirrors polished to atomic tolerances) and TRUMPF in Germany supplies the high-power $CO_2$ lasers that drive the plasma source. Each of these is an irreplaceable node. There is no fallback supplier for Zeiss optics; there is no fallback supplier for TRUMPF laser systems; and ASML cannot be replicated, even in principle, without replicating both. The cluster is the chokepoint, not any single firm.[44]

The second is the 2012 Customer Co-Investment Programme, under which Intel, the Taiwan Semiconductor Manufacturing Company (TSMC) and Korean Samsung together acquired approximately 23 per cent of ASML's equity for €3.85 billion and committed a further €1.38 billion over five years to joint R&D in EUV and related technologies. Intel alone took roughly 15 per

cent of the company; TSMC, approximately five per cent; and Samsung, approximately three per cent. What is remarkable is not merely the capital, but the structure: ASML's three largest customers became among its three largest shareholders, with non-voting equity except in exceptional circumstances, and agreed to contribute jointly to research whose results would be sold back to all three on identical terms. The alliance was not built on monopoly power or exclusion but on cultivating irreplaceability in a global value chain.[45]

The third is ASML's customer policy. Until the US imposed trade sanctions on ASML exports to China (a point we will return to below), ASML sold to all the world's leading semiconductor producers competing fiercely with each other without discrimination. Remarkably, it also shares intellectual property across the customer network and treats its customers as co-developers rather than licensees. The result is that every advanced chip produced anywhere in the world, therefore, passes through an ASML machine: TSMC's 3nm process, Samsung's foundry, Intel's 18A, and every successor node beyond that point all depend absolutely on EUV systems ASML delivers.

Power here is not a function of exclusion; it is a function of irreplaceability in a shared value chain. Every participant's prosperity depends on every other's. This is networked power, not sovereign power. And its real beauty is that the leverage ASML has grows as global chip demand grows.

### Not planned, not designated, not copyable

ASML's most important characteristic, in counter position to the idea of digital sovereignty, is negative. It was not produced by a digital sovereignty programme. It was not designated by Brussels or The Hague. It was not a product of mission-oriented industrial policy of the kind Europe periodically

announces. It was, instead, a market-driven response to a real and extremely difficult problem, carried out over four decades by engineers who were willing to take existential risks, backed by patient capital that was willing to finance uncertainty, and operated within a Dutch and European institutional environment that was good enough to stay out of the way and let them work.[46]

### The bleak contrast

The contrast with the EU's zest for digital sovereignty epitomized in its top-down projects is stark. Gaia-X, announced with considerable ceremony in 2020, tried to decree a European cloud into existence; it was captured within two years by the hyperscalers it was meant to constrain. Quaero tried to decree a European search engine into existence and produced nothing of lasting commercial consequence. The EU Chips Act tried to decree a 20 per cent share of global semiconductor manufacturing into existence by 2030; its flagship Intel Magdeburg fab was cancelled and the Court of Auditors now judges the target 'very unlikely' to be met. Northvolt, the decreed European battery champion, filed for Chapter 11 bankruptcy in the US in November 2024 and for bankruptcy in Sweden in March 2025.[47]

The difference is not effort, still less money: Gaia-X, Quaero, the Chips Act and Northvolt together represent tens of billions of euros of public commitment. The difference is architectural. ASML solved a real and difficult problem in a shared global value-chain. The EU's champion-designation projects tried to replicate capabilities that already existed elsewhere at scale, on compressed political timelines, with public money as the principal input. That model does not produce indispensability. It produces ribbon-cutting ceremonies, lots of PowerPoint presentations and press releases, followed a few years later by more press releases announcing failure or cancellations.

The time horizons make the contrast starker still. Gaia-X was launched with a declared aim of providing a sovereign European cloud alternative 'within a few years'. The EU Chips Act was adopted in 2023 with a manufacturing-share target for 2030, a seven-year window that would have required fabrication ramps on a timescale no prior entrant in any major jurisdiction has ever achieved. Northvolt promised gigafactory output sufficient to supply a substantial fraction of European automotive demand on a similar horizon. ASML's path to EUV, by contrast, ran from early conceptual work in the 1980s, through joint-venture formation in the 1990s, through the Customer Co-Investment Programme in 2012, to first production tools in 2018 and high-volume deployment only in the early 2020s, a 40-year arc.

The EU's flagship industrial-policy timescales are systematically mismatched to the physics and economics of the problems they claim to address. In that sense, the failures are not evidence of bad implementation; they are evidence of misspecification at the outset, the outcome of an arrogant technocratic mentality that believes it can conjure up globally competitive outcomes through the power of thought alone (and Microsoft PowerPoint slides).

### What ASML teaches

There are three critical lessons to draw from the ASML success story:

First, irreplaceable positions are cultivated, not legislated. ASML took 40 years to build the cluster that now underpins global semiconductor manufacturing; no administrative shortcut exists.

Second, power in a networked economy is not the power to exclude but the power to be indispensable. ASML sells to every advanced foundry in the world (subject to export controls applied by its own government),

and the resulting dependency of its customers is precisely what makes the firm, and the Netherlands, strategically unignorable.

Third, the proper role of public policy is not to pick the technology but to create the conditions in which such cultivation can take place: competition, access to capital, educated engineers, regulatory certainty rather than restraint, and the risk-taking capacity and patience to tolerate a 20-year R&D cycle without demanding quarterly milestones.

But there is another strategic lesson from the ASML story which goes to the heart of the delusions of 'digital sovereignty'.

ASML is headquartered near Eindhoven in the Netherlands. It is, formally, a European company. Yet, it is the USA that deploys it as a geopolitical instrument. Washington has used ASML's chokepoint position to progressively restrict China's access to advanced semiconductor manufacturing capability – compelling the Dutch government, through a combination of diplomatic pressure and extraterritorial legal authority, to implement restrictions on a Dutch company's sales to Chinese customers. The EU, meanwhile, has neither coordinated a European response to this exertion of American authority over a European asset nor developed any framework for using ASML's leverage in its own strategic interest.

The instrument through which the United States asserts authority over ASML's export decisions is the Foreign Direct Product Rule (FDPR), a provision of US Export Administration Regulations.[48] ASML's lithography machines incorporate US-origin components which means Washington can, under the FDPR, assert control over whether ASML machines manufactured in Eindhoven may be exported to China. The Dutch government's preferences, and ASML's own commercial interests, are formally subordinate to the US licensing determination, despite the commercial impact such decisions have on the company.[49]

The United States identified a strategic chokepoint and has deployed it as an instrument of its foreign policy. It did so without any comparable European strategic coordination because the EU has no equivalent framework. Export-control policy is, in the first instance, a member-state competence; the Commission has no direct authority over ASML's commercial decisions. The EU has not developed any mechanism for using ASML's leverage in transatlantic negotiations, in its relationship with China, or in its response to US pressure on European firms more broadly. When the US pushed for EUV restrictions in 2019, the conversation was bilateral, between Washington and The Hague, with no EU-level strategic deliberation about whether, or on what terms, European acquiescence served European interests.

The irony is structurally perfect. The EU produces, at regular intervals, documents declaring its commitment to digital sovereignty, to reduce technological dependence on foreign powers and to assert European strategic autonomy in the digital domain. Yet it allows the United States to exercise sovereignty through the most strategically significant European technology asset in the world. The digital sovereignty discourse performs ambition; the ASML episode demonstrates where the actual power lies.

The strategic potential of ASML as a European asset is not a theoretical proposition. In January 2026, the Dutch think tank DenkWerk published a report making precisely this argument. Its authors, former senior officials Frans Blom and Bernard ter Haar, proposed that Europe should be prepared to use ASML and its access to the EU single market as active geopolitical leverage, against the United States as much as against China.[50] But the EU's institutional difficulty is not the same as impossibility. It simply illustrates graphically the distance between the performance of digital sovereignty versus the substance of state sovereignty.

The US has, in effect, demonstrated that ASML's chokepoint position is real leverage by using it. ASML demonstrates how a chokepoint deploys power in the global networked world. But the fact that that decision was made in Washington, not Brussels, demonstrates that while the network is the territory, someone else is running the network.

Export controls applied by the Dutch and American governments have begun to reshape the global network. This may have unintended consequences in the future, like compelling the Chinese to join the race to develop their own EUV lithography. Whether they can do so remains unknown at this point. But that quest is potentially unleashing a competitive struggle that could, ironically, undermine ASML's chokepoint power in the future. In this scenario, Brussels will be spectators on the sidelines still issuing press releases, white papers and PowerPoint slides while the opportunity passes them by.

The broader and urgent point for the EU is that the ASML model is not replicable at will. But the architectural lesson, occupying a node through which the system must pass, rather than trying to reproduce the system inside a territorial perimeter, is transferable. It is also the only architecture of technological power available to a Europe that cannot, in realistic timeframes, reassemble inside its own borders the stack it has failed to build for 20 years.

The implications for the future are examined in the next section.

# 4 Chokepoints and indispensability as agency

### What chokepoints are, and what they are not

A chokepoint is a node in a global value-chain without which the chain cannot function, where substitution is either impossible within relevant timeframes or prohibitively costly, and where the holder of the node can therefore influence, though rarely dictate, the behaviour of other participants. Chokepoints are distinguished from commodities by the scarcity of substitutes and from monopolies by their embedded position inside shared value-chains: the chokepoint holder prospers as its customers prosper, and the dependency is mutual rather than predatory. ASML's EUV lithography is the canonical example; TSMC's advanced-node foundry capacity is another; the handful of specialised chemicals, photoresists and photomask blanks made almost exclusively in Japan are a third.[51]

Chokepoints do not confer legal supremacy over a territory, a monopoly on coercion or the authority to make and unmake law. They confer agency: the capacity to shape outcomes in a networked system by virtue of being indispensable to it. The holder of a chokepoint is not above the system but inside it, determining and dependent, which is why chokepoint power grows rather than diminishes as the system grows. Of course, a chokepoint, while a vehicle of advance and growth, does not guarantee the future, which may be influenced or disrupted by new technologies, even new players. But its synergy and the culture it internalises of constant innovation and flexible

partnership, ensures the conditions for future relevance remain core to its existence.

Chokepoints, as we saw in the ASML case study, are power points deployed by sovereign states, not technocratic bureaucrats performing digital sovereignty.

### The European inventory: ASML and the partial cases

The implications of this for Europe are critical. While ASML stands out, Europe's ledger in the chokepoint/indispensability economy is potentially more substantial than its rhetorical insecurity suggests, and more nuanced than the slogan vocabulary of digital sovereignty allows. A series of partial cases exist within which European firms and institutions occupy globally significant positions, without enjoying the absolute dominance that ASML represents, but with a wider platform of cultivable strengths from which future chokepoints could plausibly emerge.

The pattern across all of them is consistent. Where the European Union and its member states provided conditions and then stepped back, the potential for indispensability emerged. Where they have tried to designate it, almost nothing has.

The fully-fledged case has been examined in Section 2 and need not be repeated here. But related to ASML is another partner in its ecosystem that is one of Europe's most important but overlooked assets in the global semiconductor ecosystem: the Interuniversity Microelectronics Centre (IMEC) in Leuven. [52]

Founded in 1984, IMEC is a non-profit R&D hub that sits at the intersection of academia, industry and government. It was originally established by the Flemish government to prevent Europe from falling behind in microelectronics, and it has since evolved into a world-leading research centre for

advanced semiconductor technologies. It has done so through becoming an innovation chokepoint upstream through its integration in the ASML ecosystem.

It is where next-generation process technologies – such as new transistor architectures, materials, patterning techniques and integration schemes – are tested, validated and de-risked before they can be industrialised. Using ASML's latest lithography tools, it allows ASML partners such as TSMC, Intel and Samsung Electronics to experiment with new nodes and techniques without bearing the full cost individually. IMEC is thus a *shared pre-competitive platform* that accelerates the adoption of ASML's technology across the industry. Interestingly, IMEC also has strategic partnerships with Zeiss[53] – the other critical component of the ASML chokepoint.

It is a European success story with revenues reaching approximately €942million in 2023. Having initially received public funding covering around 16 per cent of the operating budget, the remainder of its revenues comes from industrial partnerships and project revenues.[54] The integration with the ASML model is what has enabled Europe to establish an indispensable research capacity like no other.

Airbus is another success story. It is perhaps the most important demonstration of how a consortium of formerly national industries achieved genuine global competitiveness, an achievement that resulted from its requirement to operate on commercial terms not state-subsidised ones.

Airbus is not a chokepoint. Instead, it represents a global duopoly with Boeing rather than a monopoly.[55] Both players, however, are the result of enormous state support.[56] But Airbus has become indispensable to global commercial aviation, holding roughly half of the large-aircraft market and supporting a network of suppliers across Europe. The decisive feature of its history is that the original consortium of national companies, which included

France, Germany, Spain, and later the UK – to collaborate on aircraft development and production without fully merging in 1970 was eventually consolidated, from the late 1990s onwards, into a single integrated firm (EADS, 2000; Airbus Group, 2013; Airbus SE, 2017) that is publicly listed, answerable to shareholders and disciplined by competition with Boeing. While the European institutions provided the supplier ecosystem, the Single Market and the regulatory framework, they did not, in the end, run the firm.

This is a critical point. When European institutions tried to dictate outcomes – for example, influencing the development of the A380 superjumbo as a prestige answer to Boeing's 747, as an expression of European sovereignty – the project faltered badly. The total development cost of the A380 was around €15–20 billion, a scale of investment that would have been difficult to justify privately given the risk. While not a failure in engineering terms, it was a strategic miscalculation shaped, in part, by policy incentives and political framing, not just market demand. It ended in commercial failure, and production ended in 2021 after deliveries proved to be well below the break-even threshold.[57] The A350 widebody, by contrast, was a commercial decision driven by airline demand for a more fuel-efficient twin-engine answer to Boeing's 787 Dreamliner. The A350 became a commercial success, securing more than 1,000 orders and forming the backbone of Airbus's long-haul strategy; it has become a profitable mainstay of Airbus's widebody range..[58] The pattern is consistent: where Airbus responded to commercial signals, it reinforced its indispensability; where it responded to political signals, it built loss-making prestige.

The architectural lesson for European institutions is to create the conditions in which indispensability can emerge and to refrain from pursuing sovereigntist follies, which substitute political priorities for nurturing competitive indispensability.

Vestas and the Danish wind cluster make the same point in a different sector. In the 1970s and 1980s, the Danish government created a domestic market for wind turbines through guaranteed purchase prices, tax incentives and grid-connection rules — a textbook market-creating intervention. It did not, however, choose the technology or designate the firm. Vestas, originally an agricultural-machinery manufacturer, emerged through commercial competition and is today the world's largest wind-turbine manufacturer;[59] Siemens Gamesa, the product of a subsequent merger, is a second European leader in the same segment.[60] Sweden's contribution to advanced industrial supply-chains has come primarily through firms such as SKF (bearings) and ABB (power and automation systems), which emerged from export-oriented, competitive industrial development rather than top-down champion designation.[61]

Vestas is not a chokepoint in the ASML sense because the global wind market is genuinely competitive, with Goldwind, GE Renewable Energy and other firms holding substantial shares, and turbine technology is to a significant extent substitutable. But Vestas is a globally significant European firm, and the trajectory by which it emerged matters for the present argument. The state created the conditions; commercial competition selected the winner.

Other partial European positions include Novo Nordisk's dominance in GLP-1 diabetes and obesity treatments, SAP in enterprise software, ARM in processor designs for mobile computing (headquartered in Cambridge, now partly owned by SoftBank). The Fraunhofer distributed innovation infrastructure in applied research across more than 70 institutes generates around €3 billion in annual research income, reflecting its hybrid model of public funding and industry contracts (one third from German federal and state government, the rest from commercial contract research).[62]

There are also the European pharmaceutical clusters around Basel, Copenhagen and the South-East of England. None of these is a perfect ASML-style chokepoint. Several are more globally significant European firms, not indispensable network nodes. But each emerged where the state's role was structural – providing education, research infrastructure, competition and regulatory predictability rather than directional determination. Each is the product of conditions that allowed European industry to compete, which acts as a precondition for chokepoint evolution rather than the realisation of any sovereign pretensions.

The thread that runs through these cases is the same. Europe's most consequential industrial successes were not produced by sovereignty programmes. They were produced by an institutional ecology in which the Single Market, the supplier networks, the educational pipelines, the research infrastructures and the regulatory framework provided the conditions, and the firms that became globally indispensable competed their way to those positions.

The European institutions' contribution was not zero; it was substantial, and structural. But it was emphatically not the directional, champion-designating, target-setting industrial policy of the kind invoked under the EU's digital-sovereignty banner. Where the EU and member states have provided a helpful environment for success rather than trying to impose grand designs, partial chokepoints have emerged. Where they have stepped forward to legislate outcomes, almost nothing has.

### France Telecom and the choking off of the European market

An opposite case, and arguably Europe's most consequential digital-era policy mistake, is telecommunications and the example of France Telecom.

The starting point was sound. The Full Competition Directive,[63] that came into force on 1 January 1998, ending national telecoms monopolies across the Union, was the right instrument for the right problem. National monopolies provisioned over-priced, under-invested and slow-to-innovate networks that were structurally incompatible with what the internet was about to become. The Directive was the end-point of a decade-long struggle between the European Commission and a coalition of member states defending their national operators as simultaneously public-sector employers, dividend-paying assets, industrial-policy instruments and symbols of technological competence.[64]

In the immediate term, liberalisation worked. By 2000, average retail call prices across the EU had fallen by 40–50 per cent. Mobile penetration reached 61 per cent of the European population by 2001, up from 23 per cent in 1997. Broadband subscriptions grew from seven million in 2002 to 94million by 2007. These were structural gains, not marginal ones.[65] The unintended consequence of these efforts was that this competitively provisioned internet infrastructure became, six years later, the infrastructure on which Google, Amazon, Yahoo and eBay built their European businesses. European consumers gained, but European digital firms and platforms of comparable scale did not emerge.

The bottleneck here were the member states, that is, Europe's sovereign states, rather than the EU as an institution. The national governments that resisted the directives most fiercely in Council were the same ones that, once liberalisation was unavoidable, used the EU as the cover for changes they could not or would not own at home. The case study of France Telecom in Section 2 revealed this reality.

Privatisation and the opening of the French telecommunications market were politically toxic. The CGT and Force Ouvrière threatened prolonged

strike action; France Telecom was a jewel of the national public sector. Successive governments hid behind Brussels: the partial IPO of October 1997 and the full deregulation of 1 January 1998 were presented to the French public as European obligations rather than as French political choices.[66] The strategy worked in the narrow sense. Liberalisation went ahead. But it worked much less well in the wider sense. By refusing to own the change, French political leaders avoided building the domestic political coalition that any subsequent investment, consolidation and structural adjustment in the sector would require. The same pattern was repeated, with local variations, in most other member states.

France Telecom was a microcosm for Europe. The combination of technocratic arrogance and political cowardice was lethal. The mixture of liberalisation imposed through Brussels and realised by blaming Brussels, and then partially unwound through member-state aid, produced a European telecoms sector that has every characteristic of fragmentation and none of the characteristics of a continental platform. There are roughly one hundred mobile operators across the Union of 450 million consumers, against three principal operators in the United States serving 330 million. This gives US operators greater scalability in data use, infrastructure investment and spectrum purchases. In Europe, unit costs are higher; investment per subscriber is lower; capital expenditure on next-generation networks (5G, fibre) trails both the United States and leading Asian economies; cross-border consolidation, which would build the scale required to finance the next investment cycle, runs into competition-law objections and national-security reviews almost regardless of which firms are involved.

Mario Draghi was certainly right when he argued in his report, *The Future of European Competitiveness*, that the 'EU telecoms sector is fragmented along national lines, with too many operators for the scale

required to sustain investment and innovation', and that this fragmentation 'limits the ability of European firms to reach efficient scale and weakens their capacity to compete globally'.[67] Enrico Letta's remarks echoed Draghi, arguing that the Single Market remains incomplete – particularly in services, capital and telecommunications – and that 'Europe must enable cross-border consolidation to create companies of sufficient scale to compete globally'.[68]

The outcome of the tension at the heart of the EU matters because telecoms was not just an isolated sector. This should have produced the platform on which the next generation of European digital innovation could have been built. A pan-European telecoms market with continental scale, predictable regulation and the financing capacity that scale produces would have provided the natural staging ground for European cloud, software, AI and platform firms. Instead, the staging ground was Balkanised, the financing capacity was small, and the firms that scaled into the gap were American or, in a smaller number of cases, Chinese. Critically, creative destruction did not operate, because the political-economy conditions for it – domestic ownership of the change, willingness to permit consolidation, willingness to allow incumbents to fail without rescuing them – was not allowed to play out.

The right deregulatory instrument was applied; almost everything else was wrong. What should have been the foundation for the development of potential European chokepoints in the digital era became, instead, a foundation that no further building could be assembled on. The market the liberalisation directive created was not, in the Schumpeterian sense, destroyed and remade. It was choked off.

These examples serve to highlight an enduring reality. Removing barriers to entry, opening incumbent infrastructure to access and abolishing legal monopolies are preconditions for market-driven outcomes that could enable the emergence of chokepoints. But when Brussels's technocratic instinct to

apply competition law indifferently combines with national governments' refusal to own politically difficult change, the market that has been opened up is not converted into a platform for innovation. The tensions underlining this changed reality choke off its potential. The problem is not that the Commission liberalised. It is that nobody owned the consequences of liberalisation, and in the absence of ownership, the incentives that creative destruction requires never crystallised.[69] Instead, it nurtured the technocratic zeal of the EU bureaucracy while institutionalising the evasion of responsibility endemic in Europe all under the shared wishful holy grail of control.

### The prescription: stop performing, start cultivating

The prescription that follows is based on the necessity to change the architectural logic of policymaking.

Before going into this in some detail, one caveat is critical: the EU has spent a quarter of a century becoming a regulatory superpower rather than an incubator of world-class technology. The regulatory obsession represents an institutionalised technocratic mindset whose natural proclivity is to seek to control outcomes rather than initiate them. The result is an institution embedded with a technocratic DNA that believes its duty (and right) is to dictate outcomes rather than nurture or cultivate innovation and outcomes that cannot be determined at the outset.

Regulation is the only sphere in which Brussels approaches sovereignty, and it is therefore the sphere into which every other ambition concerning digital sovereignty gets sublimated. This is the paradox at the heart of the strategy: the EU's one source of real power is also the principal structural impediment to the kind of European technological agency it claims to be pursuing. As we noted before, it is this DNA that has made Europe a structur-

ally less hospitable environment for innovative start-ups than the United States, or, on some measures, China.

The fixed costs of complying with GDPR, the DSA, the DMA, the AI Act, NIS2, the Data Act, the Cyber Resilience Act and a thicket of related instruments fall disproportionately on the smaller European entrants who would have to be the source of any future European chokepoint, and disproportionately benefit the largest American incumbents whose compliance departments can absorb them. A doctrine that began as an assertion of European agency over technology has become, in operation, an entrenchment of American incumbency in Europe. It's a cycle that repeats at different levels, but which is not impervious to change.

There are three structural dimensions of any future-oriented technology strategy, which for the reasons outlined above butt up against the same underlying constraints.

First: the realisation of the Single Market – particularly in capital, corporate law, insolvency, labour and services. This would enable European firms to scale across 440million consumers as easily as American firms scale across 330 million. The Capital Markets Union,[70] now relabeled the Savings and Investments Union, and the Letta Report[71] have identified the agenda. But the EU is not a sovereign state. It cannot legislate a single market into existence over the heads of member states whose national champions, tax bases, pension regimes and social models would be exposed by genuine integration. A truly completed Single Market would be the most decisive thing Europe could do for its technological future. It is also the thing the Union's institutional architecture is least equipped to deliver.

Second, telecoms consolidation runs into the same wall. Both Draghi and Letta identify the fragmentation of the European telecoms market as a first-order obstacle to financing the next generation of network and AI

infrastructure. The political-economy conditions that the 1998 liberalisation directive failed to create can in principle still be created. But they will be created only if Brussels stops treating every cross-border merger as a competition concern and member states stop treating every reorganisation of a former incumbent as a national-security threat. Both reflexes are deeply embedded – the first in the Commission's temperamental preference for control, the second in the residual sovereignty that member states retain over critical infrastructure. The instrument is available; the political will to wield it requires the same kind of integration that the Single Market problem already exposes as structurally difficult.

Third, scale the structural investments that work. Follow the IMEC-style pre-competitive research infrastructure in photonics, quantum, AI evaluation and advanced materials; Fraunhofer-style translational institutes; and restructure a Horizon-successor that is prepared to fund long-horizon risk on equity rather than grant terms. These play to genuine European institutional strengths and do not require Brussels to override member-state sovereignty in the way Single Market completion or telecoms consolidation do. Of the three structural dimensions, this is the one that is both most tractable and most likely to compound if allowed to evolve.

What constrains these three dimensions is, as we have alluded to before, the structure of the EU and its ruling ethos. The EU's technocratic elite, whose risk aversion only matches their arrogant belief that they know what's best not only for the low-information European demos, but its captains of industry, are not a by-product of the EU and its institutions. The lessons that technological leadership cannot be administratively generated or declared fall on deaf ears. The idea of relinquishing control and allowing the invisible hand of the market to run its course is simply anathema to the technocratic mentality. The institutionalised performance of declaring grand projects and

demanding visible public demonstrations of strategic commitments, every time and after every failure, is hardwired into the foundations of Berlaymont.

The European Union should stop trying to designate the winners of technology races already underway in cloud, search, social media and foundation models. Instead, it should start doing the things it does have the institutional capacity to do to facilitate future-oriented change. Europe must wake up and smell the coffee – before it is truly too late. ASML took 40 years. IMEC took 30. Airbus took 30. Novo Nordisk's GLP-1 franchise took 20. These are great examples of risk-taking, ingenious and courageous actions undertaken by European entrepreneurs. They demonstrate that there are no short-circuits. The member-state governments – whose electoral cycles are four or five years long – will have to find a way to sustain commitments that last longer than any one of them. One can predict with tragic certainty that the temptation to launch another flagship project every time one fails will repeat itself endlessly until this mindset is challenged and changed.

For these reasons, the only realistic policy requirement for the future should consist of negatives:

- Stop announcing digital-sovereignty programmes that absorb attention, budget and political capital and then quietly fail.
- Stop using competition law as an instrument for protecting incumbent firms or incumbent national arrangements; the doctrine should serve consumer welfare and dynamic competition, not member-state political comfort.
- Stop layering compliance obligations on emerging firms as if they were already American hyperscalers.
- Stop demanding annual political milestones for projects whose physics requires 20-year horizons.

  None of them is impossible.

The discipline of restraint or relinquishing its obsession with controlling outcomes is the hardest thing to ask of an institution whose comparative advantage is rulemaking. It requires the European Commission to accept that there are domains in which the most consequential thing it can do is to refrain from doing anything new. The most consequential thing member states can do is to own the politically difficult reforms in their own electorates rather than disguising them as European obligations. It requires, in other words, that Europe's institutions accept the political costs that they have spent the last quarter-century trying to externalise.

The domains in which Europe could plausibly cultivate the next generation of chokepoints are already identifiable:

- Photonics, where European firms and institutes hold a disproportionate share of the patent landscape and in which the transition from electronic to optical interconnects will reshape the compute stack.
- Quantum computing and quantum communications, in which European public research has built a lead that commercial actors have yet to consolidate.
- AI evaluation and safety, where the EU's regulatory reach could be re-directed from precautionary risk that seeks to limit foundational AI models before it is even known what these might produce, to developing an infrastructure of trust that will be a necessary condition of advanced AI deployment everywhere.
- Industrial and embedded software, where European firms have accumulated decades of domain expertise in automotive, aerospace, process control and machine tools.
- Precision biotech, where the European pharmaceutical cluster retains depth in translational science.

None of these is a consumer-platform race that has already been lost; each is a pre-competitive infrastructure or specialist capability in which cultivation may still outrun designation, if cultivation is what is attempted.[72]

Whether Europe is serious about this prescription will not be visible in the next Commission communication on digital strategy. It will be visible in a small number of concrete decisions. Whether cross-border telecoms consolidation is permitted or obstructed. Whether the Savings and Investments Union materialises. Whether the compliance architecture around GDPR, the DSA and the AI Act is simplified (better if they were scrapped altogether) rather than elaborated further. Whether a Horizon-successor is given the instruments and the risk appetite to back 20-year R&D on equity terms. Whether member-state governments own politically costly reforms in their own electorates.

These suggested prescriptions, if implemented, would represent a significant new direction in Europe. But without this shift, the EU is in danger of resembling Russia or North Korea rather than the US.

The irony is hard to miss: the EU increasingly defines Russia as its principal foreign information manipulator and interferer, yet its own digital agenda is moving in a direction that mirrors, in softer legal language, the same sovereign logic it condemns.

A few developments illustrate this clearly:

- Russia's 2019 Sovereign Internet Law (effective Nov 2019) mandates centralised control over the Russian internet segment (Runet), effectively creating a national intranet, similar to China's 'Great Firewall'.[73]
- Roskomnadzor has become a technical censorship authority, not just a media regulator.[74]
- Russia is forcing foreign tech companies into local legal exposure.
- Russia is tightening data localisation.[75]

- Russia is replacing foreign digital services with state-aligned domestic alternatives.[76]
- Russia is using platform blocking, throttling and anti-VPN measures as sovereignty tools.[77]
- Russia is pursuing software and infrastructure import substitution.[78]

Brussels speaks of a Democracy Shield which I have written about extensively.[79] It speaks of rights, safety, resilience, transparency and democratic protection rather than censorship, control or information security. But the underlying ambition and impulse to control is strikingly similar: to subject technology platforms, data flows, online speech and digital infrastructure to political authority without any accountability.

The EU model is not the Russian model in institutional form. But it increasingly shares the same governing instinct: that the digital sphere is too powerful, too strategic and too politically consequential to remain beyond home-grown state-directed supervision.

If Europe is to have a digital future, then the strategic points raised above about chokepoints require urgent attention. This will determine whether Europe can be a shaper of the technological order in 2040 or has simply remained a market, and an increasingly authoritarian one, for it.

## Conclusion: agency and power, not sovereignty

Albert Einstein is commonly credited with the observation that 'the definition of insanity is doing the same thing over and over again and expecting different results'.[80] For 25 years, the EU has pursued digital sovereignty by the same method: announce an ambitious target, designate a champion or a consortium, disburse public funds, regulate the terrain, declare a sovereignty victory, and, a few years later, quietly fold the project when its targets are not met. Quaero, Gaia-X, the Intel Magdeburg fab, Northvolt, and all the other sovereign champions on the list have followed this pattern. The methodology has never worked. Yet it is still being applied.

The premise of this report is that the methodology cannot work and will not work, because it is attempting to manufacture a condition, a territorially bounded digital sovereignty, that does not exist anywhere in the world. The United States does not have it. China does not have it. Russia is perhaps closest to it. But, in reality, no state has the full stack within its borders, and the ones that come closest do so by accepting dependence at one layer in exchange for dominance at another. The global digital economy is not structured for sovereignty. It is structured for indispensability.

What Europe needs is not the folly of digital sovereignty, but agency and power. Agency is the capacity to influence outcomes. Power, in the networked economy, is the ability to occupy a node through which the system must pass. To withhold, or to extend, access to that node – on terms one sets oneself – enables influence not only in that sphere but elsewhere, too. The holder of a chokepoint does not stand above the system; it stands inside

it and draws its power from the fact that the system cannot function without it. That is what ASML has in EUV lithography; what IMEC has in pre-competitive process R&D; what Airbus has in large civil aircraft; what Novo Nordisk has in GLP-1s.[81] That is what the next generation of European firms will have to build in the domains where accumulated European expertise is deepest and no global leader has yet been designated by the market.

The practical implication for European policy is a complete reversal of the default. Stop performing digital sovereignty; start cultivating indispensability. Abandon the champion-designation reflex; fund the pre-competitive research infrastructure from which tomorrow's chokepoints will emerge. Stop trying to decree European clouds, European search engines, European social platforms and European foundation models into existence; accept that those races are over and that the next races in photonics, quantum, AI evaluation, fusion, industrial software and precision biotech will be won by whichever polity cultivates the conditions for irreplaceability, not by whichever declares the target first.

This report is not a rejection of public policy; it is an insistence that public policy operate on the plane where it is effective. The EU should complete the Single Market, permit the telecoms consolidation it has blocked for 20 years, build IMEC-scale research infrastructures in the domains it has prioritised, simplify the compliance architecture around its substantive regulation, and make European capital markets large enough and liquid enough to finance 20-year technology bets on equity terms. These are things the Union can do, and they are the preconditions for the chokepoints of the future.

Member-state governments, for their part, will have to stop outsourcing the politically difficult decisions to a supranational level that cannot bear

them. National sovereignty is real; the demos that confers it is national; and the institutions empowered to decide, tax, legislate and coerce sit in Paris, Berlin, Rome, Warsaw, Madrid and the other national capitals, not in Brussels. The retreat behind the abstraction of European sovereignty has hollowed out the capacity of national governments to carry the weight of the industrial transitions they face. That retreat has to be reversed.

There is a displaced psychological dimension to the EU technocrat's performance addiction: the vocabulary of digital sovereignty, strategic autonomy, technological independence and European champions provides the appearance of action at moments when the underlying conditions for action have already moved elsewhere. It is the vocabulary of an institution that wishes it had more power than it has, projecting that wish into the future tense. The problem with the projection is not that it is ambitious but that it is informed by a fatalism that substitutes for the work of building the actual capability. Every announcement of a new sovereignty programme absorbs attention, budget and political capital that would otherwise have to be spent on the slow, unglamorous business of cultivation. Performative sovereignty is costly. And it is yesterday's battle.

What is at stake is not whether Europe can win every technology race. No polity can, and the United States and China have both accepted that fact more fully than Europe has. What is at stake is whether Europe can win any of the races that remain, and whether it can position itself as an indispensable participant in those it cannot win outright. On the current trajectory, the answer is uncertain. The conditions for a more favourable trajectory – a single capital market, a consolidated telecoms sector, a pragmatic regulatory architecture that provides certainty, a risk-taking culture that tolerates the 20-year R&D cycle without demanding annual political milestones – are institutional rather than technological. They are within reach of European

decision-making. They are not, unfortunately, within reach of the current technocratic regulatory mentality of European decision-makers, and that is the binding constraint. Changing the mentality is the task. It is also the only task that cannot be delegated, sub-contracted, co-funded or outsourced to a regulatory instrument.

Europe's principal obstacle is not Silicon Valley or Shenzhen. It is the institutionalised technocratic mindset of the EU and Europe's political elite: the preference for the appearance of power over the hard, unglamorous, multi-decade work that produces it; the mistaking of the stage for the world; the willingness to keep applying a method that has not worked once in a generation and to expect a different result.

Europe needs chokepoints, not to be choked by the delusion of digital sovereignty.

**The future belongs to those who shape it, not to those who regulate or replicate what others have already built.**

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## About the author

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Dr Norman Lewis is a writer, speaker and consultant on innovation and technology. He is recognised worldwide as an expert on future trends and user behaviours regarding technology innovation and adoption. Norman was formerly a Director at PwC, responsible for running its crowdsourced innovation programme. Prior to this, he was the director of technology research at Orange. He is an advisory board member of Bubbletone Blockchain in Telecom – the world's first decentralised mobile roaming service.

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## The latest Brussels buzzword is ‘digital sovereignty’. But the EU’s plans will make Europe less competitive, not more.

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This report exposes how the EU’s technocratic death-grip has hobbled attempts by European companies to compete internationally. The report argues that the EU must abandon the dead-end of digital sovereignty for the reality of international competition.

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