# Fostering Europe's Strategic Autonomy

# Digital sovereignty for growth, rules and cooperation

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*Executive summary*

Digitalisation is a major driver in shaping economics, politics, and the balance of power in global affairs. To be on top of the current wave of technological innovation and cope with its geo-economic and geopolitical implications, the European Union (EU) should enhance its data infrastructure, unleash the potential of its Digital Single Market, and design a digital policy that contributes to the development of global digital governance and fosters multilateral cooperation.

In order to foster its digital sovereignty, the EU and its member states should follow a strategy based on three main pillars: bracing to address European overdependence on foreign technologies, unfair competition in digital markets, and infrastructure vulnerabilities; empowering Europe by removing barriers in the Digital Single Market, implementing the principles of data-openness and innovation outlined in the EU digital strategies, addressing unfair data-merging practices, expanding EU funding for innovation with a focus on small- and medium-sized enterprises, and enhancing the digital skills of the workforce; and engaging internationally to leverage EU regulatory power to boost alliances for effectively regulating emerging technologies, digital markets, data governance, and international data flows.

Digitalisation, innovation, digital skills, and international engagement will be crucial in sustaining Europe's competitiveness and economic growth. These will enable the EU to pursue its objective of digital sovereignty during its "digital decade," as European Commission President von der Leyen put it in her first State of the Union Address. Advancing EU digital sovereignty is a critical building block for empowering Europe's role as a global actor, alongside other priorities in the domains of trade and investment[1] as well as security and defence[2] policies.

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[1] Bjerkem, Johan (2020), "Fostering Europe's Strategic Autonomy - A new Agenda for Trade and Investment", Brussels: European Policy Centre.

[2] Grevi, Giovanni and Paul Ivan (2020), "Fostering Europe's strategic autonomy - Security and defence policy: Time to deliver", Brussels: European Policy Centre.

## Introduction

The Covid-19 pandemic has had a significant impact on EU digital policymaking. It has clearly proven that data, networks, and digital solutions defined more broadly constitute the nervous systems of economies and societies, during lockdown and beyond. A potential closedown of any of these services would spell significant problems, while reliable alternatives would be extremely difficult to find in the short term, and amid a raging pandemic. Therefore, the pandemic has intensified previous calls to increase the EU's autonomy in developing digital technologies, in line with its democratic tradition and values.

Digital solutions are now empowering Europeans throughout their lives by enabling home-working, home-schooling, e-banking, commerce, and social networking.[3] However, most of the digital solutions enabling Europeans to continue operating during the global pandemic originate abroad: Gmail, video calls on Zoom, Skype, cloud services provided by Amazon, Microsoft, and networking by Facebook, Instagram as well as deliveries and commuting by Uber, among others.

In her political guidelines, President von der Leyen promised that "it is not too late to achieve technological sovereignty," referring to "data and AI" as "the ingredients for innovation that can help us to find solutions to societal challenges, from health to farming, from security to manufacturing."[4] The same message was echoed in the European Commission's communication *Shaping Europe's Digital Future*: "European

technological sovereignty starts from ensuring the integrity and resilience of our data infrastructure, networks and communications."[5] Similarly, the Commission's *White Paper on Artificial Intelligence* notes that alongside investing in next generation technologies and digital skills, it is crucial to invest in the infrastructure that can "support the creation of European data pools enabling trustworthy AI."[6] The same emphasis on infrastructure is repeated in the Commission's communication *A New Industrial Strategy for Europe*: "Europe's digital transformation, security and future technological sovereignty depends on our strategic digital infrastructures."[7]

While extensively used in EU policy papers, expressions such as strategic autonomy or technological sovereignty are subject to different interpretations at the national level, within a growing pan-European debate. It is important to note that these formulations do not preclude cooperation between the EU and its partners, which is all the more important to spur technological innovation, avoid overreliance on one technology provider or diversify supply chains, as need be. However, they point to the need to define the terms of this cooperation in line with Europe's values and interests. Sovereignty is therefore best understood as "the ability to control outcomes and respond to the fundamental needs of the people."[8] In other words, it is about being in charge of fundamental choices about Europe's future, by setting priorities and strengthening the means to achieve them. Autonomy and sovereignty can therefore be seen as providing a stronger platform for cooperation with others though

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[3] EU2020HR, "Digital sector is playing a key role in fighting the pandemic", (accessed 4 Dec 2020).
[4] von der Leyen, Ursula, Political Guidelines for the next European Commission 2019-2024. A Union that strives for more: My agenda for Europe, 16 July 2019a.
[5] European Commission (2020), Shaping Europe's digital future, COM(2020) 67 final, Brussels.
[6] European Commission (2020), White Paper on Artificial Intelligence, COM(2020) 65 final, Brussels.
[7] European Commission (2020), A New Industrial Strategy for Europe, COM(2020) 102 final, Brussels.
[8] Draghi, Mario, "Sovereignty in a globalised world", University of Bologna, 22 February 2019.

bilateral or multilateral frameworks, whenever possible.[9]

Ongoing policy debates about digital sovereignty or strategic autonomy subsume a vast range of topics, ranging from 5G and Artificial Intelligence (AI) to blockchain, and from connected devices (Internet of Things) to hyper-computing. The connecting thread that runs across these and other issues consists of one crucial resource: data. The EC has repeatedly underscored the need to increase EU digital strategic autonomy, emphasising that harnessing the potential of data in the Digital Single Market (DSM) will be the first step.

Other EU institutions have pointed in the same direction, arguing that fostering digital strategic autonomy would be the first step towards a strong recovery in the aftermath of the Covid-19 pandemic. In its roadmap for recovery, the European Council called for action to address the EU's long-term dependency on foreign technologies and digital solutions, in order to ensure the EU's strategic autonomy in a post-pandemic context.[10] The European Parliament has stressed the same objectives by calling for increased funding on digital, among others.[11] More recently, President von der Leyen mentioned three fields in her State of the Union address that the EU should focus on in order to make this Europe's "digital decade": data, artificial intelligence, and infrastructure.[12]

Clearly, developments in these fields are interlinked and one cannot advance in one area without progress in the other. Additionally, time is of the essence, as other global players are making rapid progress in all these fields. Competition is intensifying not only with respect to data, infrastructure, and new technologies such as AI, but also concerning the regulation of technological developments and the digital economy. If the EU misses the opportunity to shape these regimes at home and globally, it will become more reliant on foreign technologies, while its role as a regulator will diminish and its economic clout will wane.[13]

This paper argues that attaining digital autonomy largely depends on developing adequate data infrastructure, investing in research and development and in innovative small and medium enterprises, boosting the digital skills of the workforce, and strengthening global governance.[14] Delivering on these objectives requires (i) the creation of a unified EU space for the circulation of data in order to promote growth, innovation, and security in Europe's critical infrastructure; (ii) a favourable regulatory environment that fosters innovation through public and private investments; and (iii) deploying the EU's regulatory power to help shape the global governance of new technologies in ways that are consistent with its interests and democratic values.

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[9] Grevi, Giovanni (2019), "Strategic autonomy for European choices: The key to Europe's shaping power", Brussels: European Policy Centre.

[10] European Council (2020), Special meeting of the European Council (1 and 2 October 2020), EUCO 13/20, Brussels.

[11] European Parliament (2020), European Parliament resolution of 23 July 2020 on the conclusions of the extraordinary European Council meeting of 17-21 July 2020, 2020/2732(RSP), Brussels.

[12] Von der Leyen, Ursula, State of the Union Address by President von der Leyen at the European Parliament Plenary, *European Commission*; von der Leyen, Ursula, Political Guidelines for the next European Commission 2019-2024. A Union that strives for more: My agenda for Europe, 16 July 2019a, p.5

[13] European Commission (2019), The European Commission's contribution to the informal EU27 leaders' meeting in Sibiu (Romania), Brussels; European Political Strategy Centre, *Rethinking Strategic Autonomy in the Digital Age*,; PWC Global, "The World in 2050", (accessed 4 Dec 2020).

[14] The terms 'sovereignty', 'strategic autonomy', and 'technological and digital sovereignty' have been used interchangeably in a series of communications by the European Commission, such as Shaping Europe's Digital Future and A New Industrial Strategy for Europe" – this paper will refer to these terms under 'digital autonomy'; see also: Gueham, Farid (2017), "Digital sovereignty - Steps towards a new system of internet governance", Fondapol.

To enhance its strategic autonomy, the EU and its members should follow a strategy based on three main pillars, which are outlined in the subsequent three sections:

- *Brace:* in an effort to strengthen Europe's cohesion and resilience, there is a need to identify and reduce EU dependencies on foreign data infrastructure, tackle unfair competition in digital markets, and address Europe's vulnerabilities with respect to emerging technologies, 5G and, in particular, AI.

- *Empower:* with a view to harnessing Europe's untapped potential and carrying more weight on the global stage, the EU and its member states should proceed to remove barriers in the digital single market, pursue an ambitious strategy on data, and boost investment in research and development and in digital skills for the workforce.

- *Engage:* in an effort to enhance Europe's role as an advocate of rules-based cooperation, there is a need to identify the areas where the EU can leverage its regulatory power internationally and work in partnership with others to regulate emerging technologies, digital markets, data governance, and international data flows.

## Brace

### Identifying Europe's dependencies and weaknesses

Identifying the areas where the EU is most dependent on foreign technologies and digital services is the first step towards defining the

capacities that Europe will need to develop to enhance its digital sovereignty. The following five areas are key in this respect: cloud and data infrastructure; business-to-government data (B2G); business-to-consumer data (B2C); 5G connectivity; and AI.

### Cloud storage: putting European data in EU hands

The lack of control over data that is produced in the EU but stored under the jurisdiction of the US is an important concern for EU member states. Governments and businesses have expressed concerns over using cloud storage and other data services originating abroad.[15] This places citizens, businesses, and public authorities in a vulnerable position given that their data is stored under potentially conflicting jurisdictions. The security of the data, its protection from undue access, is uncertain due to conflicting regulations (ex. US Cloud ACT vs the EU's GDPR), or due to the lack of effective enforcement/compliance. By storing EU data abroad, Europe's digital economy cannot fully benefit from the wealth of information that this data contains to improve supply chains, minimise costs, and foster innovation and competition.

There is currently insufficient European competition in the cloud sector. The global cloud storage services market is largely dominated by US and Asian companies. The leaders in this market are Amazon (45%), Microsoft (17.9%), Alibaba (9.1%), Google (5.3%), and Tencent (2.8%).[16] While an estimated 92 % of data produced in the West is currently located in the US, only 4% is stored in Europe.[17] European companies have little room to choose between different options of cloud providers, which suggests

[15] Ledwon, Benjamin and David Torben  (2019), "A sovereign cloud and data infrastructure for Germany and Europe", Brussels: Bitkom

[16] Gartner, "Gartner Says Worldwide IaaS Public Cloud Services Market Grew 37.3% in 2019", Press Release, 10 August 2020.).

[17] Kalff, Donald and Andrea Renda (2019), *Hidden Treasures. Mapping Europe's sources of competitive advantage in doing business*, Brussels: Centre for European Policy Studies, p. 173.

that the EU needs to foster competition in this field to allow European companies to have a greater range of choices, while also providing an enabling environment that will lead to better market access for European cloud providers. Additionally, it is crucial to establish a clear set of policies regarding the regulation and management of European cloud storage services so that it is easier to move company data between different cloud storage providers.

The invalidation of the EU-US Privacy Shield by the European Court of Justice on July 16 highlighted the kinds of problems associated with conflicting data regulations/jurisdictions, as well as the EU's overdependency on foreign cloud and data storage solutions. Among other reasons that led to the ruling, the 2018 US Cloud Act played an important role. This piece of legislation can potentially allow US intelligence agencies to access data hosted by US firms, regardless of the jurisdiction in which the server is physically located.[18]

### Business-to-government data (B2G): unleashing the potential of data in the DSM

Data that is produced through the activity of private firms can be a very useful resource for effective evidence-based policymaking and the provision of public services. Building a robust EU infrastructure for B2G data-sharing would be essential to derive these benefits. However, current overdependencies on non-EU cloud storage solutions raises questions about the safety and reliable access of B2G data by governments, businesses, and other stakeholders. Moreover, the lack of a common and agreed framework in the EU for accessing and using this type of data is the bigger problem. An EU-wide cloud infrastructure governed by common

regulatory arrangements would foster a harmonious and consistent application of security and privacy standards, which would increase integration and competition across the DSM.

It would also enable harnessing the full potential of industrial data and other data-access frameworks in the public interest – such as tracking the spread of infectious diseases, fostering a circular economy, identifying new trends in the labour market, designing solutions for education, and understanding the impact of social media on public discourse online, etc. The free flow of data between governments, large businesses, small and medium enterprises (SMEs), start-ups, and researchers, would foster growth and innovation across the Digital Single Market, as the Commission's emphasises in its "A European Strategy for Data" with reference to "Common European Data Spaces".[19] More recently, the important function that data can have for the public interest was highlighted in the Commission's "Data Governance Act", under the reference "allowing data use on altruistic grounds".[20]

### Business-to-consumer data (B2C): upholding European rules and fundamental rights

With the majority of digital services and online intermediaries originating in the US, Europe has significant concerns about the handling of EU citizens' personal data by big tech companies, also known as 'GAFAM' (Google, Apple, Facebook, Amazon, Microsoft). A recent expert report produced for the European Commission has emphasised that tech giants showing disregard for European fundamental rights and competition rules in the Single Market constitutes a major

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[18] Senate of the United States (2018), "CLOUD Act", (accessed 10 December 2020).
[19] European Commission (2020), A European strategy for data, COM/2020/66 final, Brussels.

[20] European Commission (2020), Data Governance Act, COM(2020) 767 final, Brussels.

policy challenge for Europe.[21] These companies are in a unique position to harvest and analyse data generated through the online activity of EU citizens. Through this practice GAFAM companies can gain crucial insights into individual behaviour and online content consumption. There are concerns that this can give GAFAM unfair competitive advantages vis-à-vis smaller players, and enables them to behave as gatekeepers to EU digital markets. Additionally, there are concerns that GAFAM's harvesting of data can open the door to manipulation of online public discourse – regardless of whether this manipulation is caused by third parties abusing this data or by the different platforms' algorithmic decision-making systems that curate and remove online user-generated content.[22]

### 5G: addressing supply overdependencies and boosting competition and investment

The question about the development, regulation, and supply of 5G networks subsumes various considerations. While some focus on infrastructure overdependencies and cybersecurity, others concern competition and investment for the development and timely commercial rollout of 5G as a platform for innovation for SMEs and large businesses in Europe.

The European Parliament has expressed concern about the growing role of Chinese tech companies such as Huawei and ZTE in Europe, calling for EU action to reduce such dependencies.[23] EU member states have also warned against growing overdependence on single suppliers of 5G equipment in Europe.[24] Previous concerns about overdependence have now intensified, given the dramatic increase of cyber-attacks, including those from China on healthcare sectors in EU member states witnessed during the Covid-19 pandemic.[25] Taken together, these have renewed calls for vigilance against overdependence on foreign technologies and interference.[26]

Overdependence on one 5G supplier poses significant risks with respect to a potential interruption of supply as well as the security of data communicated between smart devices and vital public infrastructure such as power plants, hospitals, schools, etc. Additionally, overdependence on one supplier would be detrimental regardless of whether it is an EU or non-EU company, because buying from one supplier is usually not a one-off. The leasing of 5G equipment currently requires states to work with specific manufacturers in the long term for compatibility reasons. Considering the vital function of public infrastructure, overreliance on any 5G manufacturer raises important concerns about the EU's long-term strategic autonomy and digital sovereignty.[27]

Weaknesses in enforcing a strong EU approach on 5G supply and rollout is also an important consideration.[28] Despite setting targets in 2016 for the rollout of 5G services in all EU countries by the end of 2020, and calling on member states to boost investment in 5G connectivity infrastructure in 2020, the

[21] Klossa, Guillaume (2019), "Towards European Media Sovereignty An Industrial Media Strategy to leverage Data, Algorithms and Artificial Intelligence", Brussels: European Commission
[22] Stark, Birgit & Daniel Stegmann, Pascal Jürgens and Melanie Magin (2020), "Are Algorithms a Threat to Democracy? The Rise of Intermediaries: A Challenge for Public Discourse", Berlin: AlgorithmWatch.
[23] European Parliament, Text adopted by Parliament, single reading, 2019/2575(RSP), Brussels; European Commission (2019), EU coordinated risk assessment of the cybersecurity of 5G networks, Brussels.
[24] Ibid.

[25] Council of the European Union (2020), EU imposes the first ever sanctions against cyber-attacks, Brussels; Cerulus, Laurens, "Von der Leyen calls out China for hitting hospitals with cyberattacks", *Politico*, 22 June 2020.
[26] European Commission, Report on Member States' Progress in Implementing the EU Toolbox on 5G Cybersecurity, Brussels; European Commission, Cybersecurity of 5G networks - EU Toolbox of risk mitigating measures.
[27] Fuest, Clemens and Jean Pisani-Ferry (2019), "A Primer on Developing European Public Goods A report to Ministers Bruno Le Maire and Olaf Scholz", Brussels: Bruegel
[28] Brunello, Rosa (2020), "Data Laws or Data Wars", London: Chatham House

Commission has now accepted that these cannot be met, as the Covid-19 pandemic made the swift roll-out of 5G in Europe impossible.[29]

Aside from delays, there is also fragmentation in the rollout by member states due to different capacities for connectivity.[30] Allowing a big role to foreign 5G providers could put the EU DSM under severe risk by increasing current dependencies and decreasing long-term confidence by foreign investors who can innovate on connected devices (Internet of Things) based on this technology. Additionally, a related concern about the delayed uptake of 5G is the disinformation and conspiracy theories that have spread about the link between 5G and the spread of Covid-19.[31] The Commission should now push for a concerted approach in the rollout of 5G in Europe with conditions for increased private investment, as per its recent recommendation, and plans for bridging the connectivity divide between different regions, in order to address fragmentation and foster competition in the DSM.

### AI: building a strong EU data economy to foster investment, growth, and innovation

With its world-leading AI research community and strong, highly automated industry, the EU has strong assets in the field of AI.[32] Nevertheless, some indicators show there are weaknesses in the EU's current ability to compete in the global race for the development of this technology.[33] There is currently a lack of private investment and in a lag in the uptake and application of AI technologies in industry, business, and public governance.[34] These are evident when compared to the US, which is a strong hub for talent in AI and a world leader in AI patent applications, and China, which currently leads the race on integrating the power of data in its economic and industrial model – the essential elements for the development of AI technologies.[35]

In part, the EU's weaknesses in this field are due to the low fulfilment of prerequisites in the aforementioned fields such as, difficult access to data due to the lack of sufficient connectivity and data infrastructure. The implementation of EU plans about the creation of "data spaces" as per the European Commission's *A European Strategy for Data*, and *Data Governance Act* among others, could aid current limitations in data-access for the development and training of AI technologies. Additionally, there is the question of removing barriers to growth and innovation for this sector in the DSM, as well as the question of increasing public funding, private investment, and digital skills, as illustrated in the following sections of this paper.

## Empower

### Removing barriers to enhance growth and innovation

Empowering Europe means fully leveraging the untapped potential of the Digital Single Market (DSM). This can be achieved by

[29] European Commission, 5G for Europe Action Plan, Brussels; European Commission, Commission Recommendation on a common Union toolbox for reducing the cost of deploying very high capacity networks and ensuring timely and investment-friendly access to 5G radio spectrum, C(2020) 6270 final, Brussels; Stolton, Samuel, "Commission concedes delay in 5G deployment across the EU", *EurActiv*, 18 September 2020; European Commission (2020), Speech by Executive Vice-President Margrethe Vestager on the Digital Package, Brussels.
[30] European Commission (2020), Digital Economy and Society Index (DESI) 2020, Brussels.

[31] European Commission (2020), "Fighting Disinformation", (accessed 10 December 2020).
[32] Breton, Thierry, "Europe has everything it takes to lead the technology race", LinkedIn (accessed 10 December 2020).
[33] Nurton, James, "The IP behind the AI boom", WIPO, February 2019..
[34] European Commission (2018), "USA-China-EU plans for AI: where do we stand?", Digital Transformation Monitor, Brussels.
[35] Castro, David, Eline Chivot and Michael McLaughlin (2019), "Who Is Winning the AI Race: China, the EU or the United States?", Centre for data innovation..

eliminating barriers and creating the right conditions for increasing growth and innovation for SMEs and the workforce. It also entails overcoming current regulatory barriers in the DSM, shaping, and implementing an ambitious digital strategy to stimulate economic growth and boosting innovation through public and private funding for research and development.

## The Digital Single Market: addressing barriers, and fostering skills and growth for SMEs

The EU has yet to leverage the overall potential of the DSM. A fully-fledged DSM is the precondition for making Europe a leader in digital technologies and their applications. Reducing barriers to cross-border e-commerce and e-government, stimulating growth and innovation by unleashing the potential of data, and making the EU an attractive hub for SMEs are crucial steps towards technological sovereignty.

Estimates about the long-term impact of a successful implementation of the DSM strategy on the EU's economy vary, but all analyses suggest that it would be substantial.[36] While the Commission's Joint Research Centre and DG ECFIN have estimated the potential benefit between €85 and €256 billion per year or 0.6 and 1.9 per cent of EU GDP, others have estimated these benefits at €177 billion.[37] While there may be uncertainties in relation to these figures, it nonetheless seems clear that some sectors have led to the largest economic annual gains since the DSM's establishment, including

electronic communications and services, data and AI, e-commerce and online platforms, as well as e-government.[38]

Good regulation in these areas should remain a priority, but more EU action is needed to eliminate the barriers hindering growth and innovation for European SMEs. Barriers in the DSM currently make it difficult for these companies to grow as quickly as those in the US. For example, of the top 10 companies in the United States, five are less than 20 years old, while the top 10 companies in Europe are more than a century old.[39]

One of the key reasons why European SMEs are growing slowly is the difficulty of accessing a broad consumer base in the DSM. Businesses face a wide range of obstacles to operate across borders. While some of these barriers relate to information gathering for market opportunities and regulatory requirements, others relate to uneven access to public procurement and complex administrative procedures to public procurement.[40] Because of these barriers, the DSM disproportionally benefits large businesses – which in the digital sector are mostly non-EU companies – that are much better equipped to navigate across different market sectors, as well as adapting to different regulatory and legal environments. Indeed, the share of large EU companies that trade across EU borders (55%) is substantially higher than the share of SMEs that trade

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[36] European Commission (2015a), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Digital Single Market Strategy for Europe, COM(2015) 192 final, Brussels; see also mid-term review of the DSM strategy Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Mid-Term Review on the implementation of the Digital Single Market Strategy: A Connected Digital Single Market for All, COM(2017) 228 final, Brussels.

[37] European Parliament (2019), "Mapping the Cost of Non-Europe, 2019-24", Brussels: European Parliamentary Research Service.
[38] Ibid.
[39] Hosuk, Lee-Makiyama (2020), "Has Europe Lost Both the Battle and War over Its Digital Future?", Washington D.C.: Center for Strategic and International Studies.
[40] European Commission (2020), Identifying and addressing barriers to the Single Market, COM(2020) 93 final, Brussels.

across the EU (20% to 40% for medium-sized companies).[41]

Another key reason why many European SMEs are not exploiting their potential for growth and innovation relates to the startling gaps in the provision of specialised labour that is necessary for driving growth and adopting new technologies. There are currently important gaps in digital skills as well as competencies in science, technology, engineering, and mathematics in Europe across genders, ages, and geographical locations. As many as 64% of large enterprises and 56% of SMEs recruiting ICT specialists in 2018 reported that vacancies are hard to fill. Additionally, only one in six ICT specialists are women.[42] This lack of supply and diversity of specialised labour for SMEs generally favours multinationals and other large businesses that have substantial resources to draw human capital from international supply and expertise.

The European Commission has emphasised the importance of a fully-fledged DSM multiple times in its various strategies and communications over the past years – most recently in its Communication *Identifying and addressing barriers to the Single Market*.[43] Over the years, the European Council has also repeatedly stressed that eliminating barriers in the DSM with a focus on SMEs will be key to fostering growth.[44] As the current pandemic will heavily impact economic growth, the need to remove barriers to growth, innovation, skills, and the cross-border supply of digital services becomes

especially important. Key policy measures to achieve these objectives are outlined in what follows.

## EU Strategy for data: tackling US companies' dominance with EU infrastructure

Although the overall value of Europe's data economy is hard to monetise, European Commissioner for Internal Market Thierry Breton has stated that it will reach more than 730 billion euros in 2020, or 4% of Europe's overall GDP.[45] According to estimates, business-to-business and business-to-government data sharing could produce a 2.8-fold increase in value of the data economy from 2.4% of the EU's GDP in 2018 to 5.8% by 2025.[46] This figure has prompted observers to describe the EU data economy as "the 21st century equivalent of a precious metal mine during the gold rush."[47]

With a view to draw the full economic benefit of the data economy, the EU should address the dominance of US firms in Europe's cloud and data storage market and pursue "data sovereignty."[48] Various EU member states have already stated their intention to move away from non-EU cloud storage solutions.[49] If taken seriously, this challenge could transform into an opportunity that could help European industry and smaller companies to grow and become more competitive, by having more control over their data and gaining insights that help them develop new products and services.

So far, the Commission has presented plans for leveraging industrial data flows as part of A European Strategy for Data, with proposals

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[41] Bauer, Matthias and Fredrik Erixon (2020), "Europe's Quest for Technology Sovereignty: Opportunities and Pitfalls", Brussels: ECIPE.
[42] European Commission, "Digital Economy and Society Index Report 2020 - Human Capital", (accessed 10 December 2020).
[43] European Commission (2020), Identifying and addressing barriers to the Single Market, COM(2020) 93 final, Brussels.
[44] European Council (2013), Conclusions 24/25 OCTOBER, EUCO 169/13, Brussels.
[45] Breton, Thierry, "Europe has everything it takes to lead the technology race", LinkedIn (accessed 10 December 2020).

[46] IDC Italia srl and The Lisbon Council (Brussels, BE) (2019), "The European Data Market Monitoring Tool", Brussels.
[47] "US 'cloud' supremacy has Europe worried about data", *EurActiv*, 4 August 2020.
[48] European Commission (2020), A European strategy for data, COM(2020) 66 final, Brussels
[49] Nextcloud, "EU governments choose independence from US cloud providers with Nextcloud", (accessed 11 December 2020).

for the creation of nine common EU data spaces across sectors such as healthcare, agriculture, and energy.[50] Recently, the Commission published its Data Governance Act, which clarified previous deliverables announced as part of the European Strategy for Data in February 2020.[51] The Data Governance Act proposed rules for the reuse of public sector data that is subject to protection, such as intellectual property or commercial confidentiality; a notification and supervisory framework for data sharing services; the establishment of a European Data Innovation Board in the form of an expert group from member states, with representatives of data spaces from different sectors; and a framework enabling individuals and companies to consent to having their data accessed by non-profit organisations, that conduct research in the public interest, based on the principle of 'Data Altruism'.

While the Data Governance Act outlines obligations for the safe reuse and handling of protected data, it also outlines conditions for ensuring data interoperability, and continuity obligations for data sharing services. These are essential steps to foster competition and innovation in the Single Market, by unleashing the potential of data for SMEs. At the moment, only 12% of them are currently using big data.[52] This is essential for European businesses to benefit from a complete value chain of data generation, processing, access, and reuse. Additionally, the Commission's plans to launch the European Alliance on Industrial Data and Cloud, as announced in the European Data strategy of February 2020, and the adoption of a Data Act in 2021 could offer great opportunities by fostering

business-to-government data sharing for the public interest.

In this context, the Gaia-X initiative is likely to play an integral part in the EU's wider data strategy goals. The Franco-German Gaia-X cloud infrastructure is transforming into a Europe-wide project that aims to offer a European alternative to US cloud providers by early 2021.[53] Gaia-X would be fully compliant with common EU certification requirements for data storage services and could give EU industry, and the business sector more broadly, greater control and profits from the data it generates.[54] Gaia-X shall also provide an infrastructure platform, enabling smaller and medium-sized European cloud providers to compete with gatekeepers in this sector in a fair manner. Thus, as things currently stand, the Gaia-X framework makes data portability and interoperability top priorities in order to create incentives for users (companies, organisations, industry etc.) and providers to join the initiative. The initiative is open to other EU members, as well as international companies and organisations. However, non-EU firms only have a limited influence on the strategic direction of the initiative. So while non-EU companies can apply to provide services as part of Gaia-X, they will not be able to join the project's strategic board, unless they have their headquarters located in Europe.

This provision could stimulate growth for European cloud storage services and boost 'Made in EU' online storage supply for industry, businesses, and public interest sectors. Moreover, the development of European data processing capacities would enable better enforcement of the EU's

[50] European Commission (2020), A European strategy for data, COM(2020) 66 final, Brussels
[51] European Commission (2020), Data Governance Act, COM(2020) 767 final, Brussels.
[52] European Commission (2019), "Supporting specialised skills development: Big Data, Internet of Things, and Cybersecurity for SMEs", p.35.

[53] Grüll, Phillip and Stolton, Samuel, "Altmaier charts Gaia-X as the beginning of a 'European data ecosystem'", EurActiv, 5 June 2020; Gaia-X, "Gaia-X: A Federated Data Infrastructure for Europe", (accessed 11 December 2020)
[54] Ibid.

General Data Protection Regulation (GDPR), especially for services and data-processing that involving data where the private/non-private distinction is hard to make.

### GDPR: improving enforcement through differentiated regimes and application

The EU's flagship General Data Protection Regulation (GDPR) defined a new global standard for privacy-respecting data sharing and harmonised data protection rules across EU member states.[55] However, the implementation of the GDPR faces challenges related to its inadequate enforcement and to the associated costs it brings about for SMEs and independent professionals.

The GDPR regulation is currently not adequately enforced at the national level due to a lack of resources. A recent report shows that dominant online platforms and services can leverage the lack of resources of national Data Protection Agencies' (DPAs) in individual member states. For example, Ireland and Luxembourg have seen resource increases of 169% and 126% between 2016 and 2019, respectively. However, there are significant disparities elsewhere: Greece and Bulgaria have seen a 15% and 14% decrease in staff, respectively.[56]

Additionally, European SMEs and other independent professionals have grievances about the administrative costs of GDPR's implementation and the limitations on the use of data for research and innovation.[57] These ultimately put European SMEs at a competitive disadvantage, because they do not possess the same resources and skills as large online platforms and services do, which often originate abroad.

Taking these problems into account, one could argue that the EU hurried itself to introduce data regulation without first seeking to nourish a strong and thriving digital sector of SMEs and other larger businesses that can compete at a global level with dominant US online platforms and services.

To counter some of the deficits, more resources should be allocated to DPAs to address the issue of GDPR's fragmented enforcement across the EU. Additionally, as a reform of the GDPR would probably send the wrong message about shaping global norms on data governance, the EU should consider the creation of special data access regimes for SMEs and other independent professionals in the EU that are active in the development of AI and other emerging tech, where access to data is essential.

### Digital Services Act / Digital Markets Act: Curbing "data power" and fostering competition

Both the Digital Services Act and the Digital Markets Act were presented on 15 December by the European Commission. The Digital Services Act (DSA) was initially announced as part of the von der Leyen Commission's guidelines to "upgrade the Union's liability and safety rules for digital platforms, services and products."[58] However, almost two months before its presentation, the Commission announced that alongside the DSA, it would also present a Digital Markets Act (DMA). The two regulations focus on different issues, but they will work side by side in enforcing internet regulation for the data economy.[59]

While the DSA focuses mostly on rules about advertising transparency, illegal content

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[55] Wheeler, Tom (2018), "The General Data Protection Regulation sets privacy by default", Washington DC: Brookings
[56] Massé, Estelle (2020), "Two years under the EU GDPR. An implementation progress report: State of play, analysis, and recommendations", Brussels: Access Now.
[57] Ibid.

[58] von der Leyen, Ursula, Political Guidelines for the next European Commission 2019-2024. A Union that strives for more: My agenda for Europe, 16 July 2019.
[59] European Commission (2020), "Digital Services Act", COM(2020) 825 final; European Commission (2020), "Digital Markets Act", COM(2020) 842 final.

removal and data access, the DMA seeks to enforce a regime of ex-ante rules that will specifically apply to big operators, as well as a market investigation tool to assess failures in digital markets.

Dominant online platforms and services such as the GAFAM, among others, harvest vast troves of data by monitoring user activity across their platforms – a process also known as data-merging. These data translate into crucial insights – also referred to as "data power" – that potentially give these companies unfair advantages, allowing them to develop new products and to behave as gatekeepers in digital markets.[60] For example, by accumulating data about the operations of businesses selling products/services through their platforms, GAFAM can better position and advertise their own products/services and compete with the businesses they host. The significant competitive advantages they enjoy vis-á-vis smaller players can cause indirect network effects in the DSM that suppress innovation and hinder competition for SMEs, professionals, and consumer choice for citizens.[61]

This is where the European Commission's plans for a Digital Markets Act (DMA) could offer vital tools for addressing concerns of exorbitant "data power" that undermines fair competition.[62] The new rules will apply to firms that have generated at least €6,5 billion across the European Economic Area over the last three years, have a self-reported market value of at least €65 billion, and provide core platform services in at least three EU countries. With these thresholds, a firm that fails to implement the DMA rules could face fines of up to 10% of its annual turnover and could even be broken up if it repeatedly fails

to comply with rules about unfair data-merging practices, competition, and self-preferencing of services.

To boost EU digital sovereignty, it is crucial that European tech start-ups, SMEs, and larger businesses are able to compete, grow and benefit from competition in online markets.[63] The Commission has therefore rightly suggested strong *ex-ante* rules that tackle exorbitant "data power" by big tech, in order to disincentivise especially strong players from abusing their market dominance and engaging in practices that make it impossible for smaller players to compete. It is, however, concerning that the Commission backed down from initial plans to develop a 'New Competition Tool', as its powers could have allowed for better monitoring of online marketplaces and better enforcement of appropriate remedies.

To complement the DMA's focus on fostering fair competition, growth and innovation in the DSM, the DSA proposes rules to ensure that service providers act responsibly to eliminate risks to their users, protect fundamental rights online, and create a safe information ecosystem. The DSA's rules will apply to platforms with an EU user base of at least 45 million.

The DSA proposes a set of rules that all online platforms and services will be expected to meet; a notice-and-action mechanism that requires platforms to swiftly remove illegal content and informs users about the reasons behind its removal, as well as, enabling users to settle disputes on the legality of content through independent "dispute settlement

[60] Lynskey, Orla (2019), "Grappling with 'Data Power': Normative Nudges from Data Protection and Privacy" (2019) 20(1) *Theoretical Inquiries in Law* 189, 207-209.
[61] Marsden, Philip, and Rupprecht Podszun (2020), "Restoring Balance to Digital Competition – Sensible Rules, Effective

Enforcement", Konrad-Adenauer-Stiftung.
[62] Aktoudianakis, Andreas (2020), "Getting the Digital Services Act right: 3 recommendations for a thriving EU digital ecosystem", Brussels: European Policy Centre.
[63] Ibid.

bodies."[64] requirements such as 'know your business customer', which will require platforms to confirm the legitimacy of traders active on their service; requirements about transparent content moderation that oblige platforms to disclose measures taken, content removal rates, and the use of automated decision making tools (ADM) for content moderation.

There are still a few big questions surrounding the draft regulation, and the obligations it could enforce on liability. Regarding intermediary liability for online content, the DSA seems to focus both on illegal content as well as legal, but harmful content. It is unclear whether the DSA should focus on both types of content. Many stakeholders, from member state governments, to businesses, associations, and industry, are calling for a DSA that focuses only on illegal content.[65] Additionally, there are concerns that in its present form, the text could give platforms too big a role in determining the legality of user-generated content – however, a verdict on the illegality of content should be determined by independent courts. Giving platforms a strong role in determining the legality of user-generated content could lead to more automated filtering by platforms, among other things, which in turn could undermine the DSA's goal of increased transparency.

To effectively address both "data power" disparities between dominant platforms and services vis-á-vis European SMEs and other professionals, and online harms to users, the Commission should also seek to establish an open data-access framework. This framework would enforce data-sharing practices between dominant and smaller enterprises,

allowing the latter to access important data that would allow them to compete. With relation to tackling online harms, the data-access framework should allow a wider range of independent researchers to access data about how users interact online within specific platforms/services. This would allow for independent monitoring about how platforms apply their community standards, and address collective societal risks like disinformation, social polarisation, and algorithmic bias.

Any data-access regime that facilitates data-monitoring would come with strong safeguards for personal data, in line with the GDPR. The data-access framework could materialise under the "Data Altruism" principle for consenting to the access and reuse of private data that the Commission presented as part of the Data Governance Act. Moreover, enhancing the capacities of national Data Protection Authorities will be crucial if SMEs, research institutions, civil society, and other stakeholders are to safely engage in open data-access frameworks.

In connection to the DSA, the Commission should also push ahead with its recent announcement for the creation of a European e-ID.[66] GAFAM platforms have a growing role in facilitating easy user sign-in to online private, public, and cross-border digital services. However, this facility raises important questions about users' privacy and monitoring of data by platforms. A European e-identity would allow users of online platforms to have greater privacy, as the need for online identification is increasing. The e-ID verification could be launched as part of the broader DSA. Combined with an EU cloud storage infrastructure, the e-ID could give the

[64]European Commission (2020), "Digital Services Act", COM(2020) 825 final; European Commission (2020), "Digital Markets Act", COM(2020) 842 final, p.27.
[65] Yar, Lucia, Lukáš Hendrych, Michał Strzałkowski and Patrik Szicherle, "Visegrad Four want to distinguish between 'illegal'

and 'harmful' content in Digital Services Act", *EurActiv*, 2 November 2020.
[66] Von der Leyen, Ursula (2020), State of the Union Address by President von der Leyen at the European Parliament Plenary..

EU a stronger hand in its advocacy for data privacy and algorithmic transparency on behalf of its citizens.

In the coming months, member states and stakeholders will push to further define contested areas. These are mostly issues concerning the definition of terms such as 'legal but harmful' content, which could have a big impact on the DSA's uniform enforcement across EU27. Considering present disparities in the digitalisation of Europe's societies and economies, as well as previous lessons from the weak enforcement of the GDPR, the Commission should ensure that its ambitions to regulate match its capacities (and that of member states) to enforce compliance with the two acts.[67]

### White Paper on AI: addressing safety and ethical risks without hampering innovation

Algorithmic transparency will be crucial for creating an ethical and fair regulatory framework that will act as a catalyst for AI's smooth uptake by business and commercial rollout. On the one hand, the Commission's White Paper on Artificial Intelligence communicates the intention to avoid overly prescriptive rules for AI in order to capitalise on AI as a means of fostering the EU's competitiveness vis-á-vis other peer economies in the US and China. On the other, policymakers have spent a considerable amount of time framing this debate around the ethics that will prevent AI from going "bad" by introducing a set of guidelines for 'trustworthy AI'."[68]

The Commission's proposal for strict conformity assessments for 'trustworthy' AI puts the EU in the lead on regulatory

approaches. Nevertheless, the Commission's regulatory approach could slow down the development of the AI sector in Europe.[69] On the one hand, establishing rigorous conformity assessments could increase EU citizens' trust in AI, and enable its timely roll out and application. On the other hand, existing uncertainty over the potential risks posed by AI makes regulation complicated, as it is unclear how to define rules that foster both trust and innovation in the field. Under this light, introducing stringent conformity assessments could disincentivise European SMEs and other sectors from innovating and implementing this technology.

It is also important to stay on the lookout for policy measures that could lead to protectionism. Stringent AI conformity regulation could provide EU regulators with incentives to deny innovative and fast-growing foreign companies market access. In turn, a protectionist AI policy could incline struggling EU-based companies to consider relocating to other jurisdictions such as the US, where they can start business much faster.[70]

Moreover, there is the question about whether EU regulatory authorities have the necessary expertise to correctly evaluate AI applications, regardless of whether these are European or not. To deal with this challenge, the evaluation of these applications could be delegated to EU companies, but these might be competitors to the firm that wants to have their AI evaluated. This could hamper innovation and slow growth in the field, discouraging EU and non-EU firms to engage

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[67] European Commission (2020), "Digital Economy and Society Index (DESI) 2020", (accessed 10 December 2020); Massé, Estelle (2020), "Two years under the EU GDPR. An implementation progress report: State of play, analysis, and recommendations", Brussels: Access Now.
[68] European Commission, High-level Group on Artificial Intelligence (2019), "A definition of AI: Main Capabilities and Capacities", Brussels.

[69] European Commission (2020), White Paper on Artificial Intelligence, COM(2020) 65 final, Brussels.
[70] Brattberg, Erik, Raluca Csernatoni, and Venesa Rugova (2020), "Europe and AI: Leading, Lagging Behind, or Carving Its Own Way?", Carnegie Endowment for International Peace.

with the EU's process for the evaluation of their AI technologies.[71]

The Commission should, therefore, carefully consider the impact that talk about comprehensive "conformity assessments" can have on policy observers in start-ups and SMEs specialising in AI. Without clear regulatory guidance, ongoing debates about conformity assessments could discourage EU and non-European companies from innovating, investing, and doing business in the DSM, which, at the end of the day, could also undermine Europe's digital sovereignty. While the Commission should take steps to ensure safety and trust in AI, at the same time it should consider providing incentives for growth to this nascent sector.

### Financial Resources: increasing public and private investment to foster innovation

An essential element of tech sovereignty is the ability to develop a European capacity in emerging technologies. In the years to come, the EU will fund infrastructure and research and innovation projects out of its general budget as laid out in the 2021-2027 Multiannual Financial Framework (MFF). Among other financial instruments, three funding programmes will be crucial in driving digitalisation, research, innovation, and growth during the COVID-19 recovery.[72]

- **Horizon Europe**, the EU's biggest research and Innovation funding framework, has increased in comparison to the previous MFF 2014-2020. The fund's budget was set to receive €94.4 billion under the initial proposal by the European Commission for 2021-2027. Following

negotiations, it has now been agreed that the framework will receive €81.4 billion (of which €5 billion is allocated under the Next Generation EU recovery instrument).[73]

- The **Connecting Europe** facility is the Union's fund for projects aiming to ensure "the proper functioning of the EU internal market and territorial cohesion among Member States in the transport, energy and digital sectors."[74] The MFF allocation for digital has more than doubled from €991 million in 2014-2020, to €1.832 billion in the next period.

- Starting in 2021, **Digital Europe** is part of the Commission's plan to increase investment in key digital tech and emerging technologies such as AI, super-computing, blockchain, and quantum technologies.[75] While the programme was set to receive €8.19 billion under the Commission's initial MFF proposal, the figure has now been reduced to €6.761 billion.

Additionally, following the EU Summit in early October, EU leaders agreed that at least 20% of the funds – roughly 150 billion euros – under the Recovery and Resilience Facility would be made available for the digital transition, including for SMEs.[76]

Despite these crucial facilities for investment, the EU risks a gradual loss of global competitiveness due to low levels of public and private investment in research and development in tech.[77] There are still important investment gaps that make the EU lag behind other economies such as China, the

[71] Bauer, Matthias and Fredrik Erixon (2020), Op. cit.
[72] Stolton, Samuel, "Digital Brief: EU Digital cuts", *EurActiv*, 24 July 2020.
[73] Council of the European Union (2020), "Multiannual Financial for 2021-2027 adopted," Press Release 969/20.
[74] European Commission (2018), "Connecting Europe Facility and repealing Regulations (EU) No 1316/2013 and (EU) No 283/2014", COM(2018) 438 final, Brussels

[75] European Commission, "Europe investing in digital: the Digital Europe Programme", (accessed 11 December 2020).
[76] European Council (2020), Special meeting of the European Council (1 and 2 October 2020) – Conclusions, EUCO 13/20.
[77] European Investment Bank (2019), "EIB Investment Report 2019/2020: accelerating Europe's transformation," p.110,

US, Japan, and South Korea. These investment gaps are detrimental to scaling-up technology start-ups, which are traditionally more innovative than other firms.

Currently, the US still stands out as the economy that invests the most in R&D, followed by China and the EU. The rapid rise of China between 2000 and 2016 has lowered the relative weights of the US and the EU in global R&D expenditure: the US share fell from 38% in 2000 to 26% in 2016. Similarly, the EU represented 22% of global R&D expenditure in 2000 but only 18% in 2016. In the same timeframe, China's share increased from 5% to 23%.[78]

The same trend appears when comparing the share of total R&D investment by the business sector in the EU.[79] Business investment has been the main driver behind the rapid increase in R&D expenditures in China and South Korea. However, in 2017, the EU's share of total R&D investments by the business sector stood at 66%, compared to 72% and 80% by the US and China, respectively.

The low investment in R&D as a share of its GDP and the low share of investment from the business sector have negative implications for EU innovation and long-term growth. This comparison may seem incongruent, considering that in countries such as China, the government actively supports business R&D. Nevertheless, the key issue here is that increased government support gives unfair competitive advantages to business because it distorts fair competition. This consideration suggests that the EU will have to do a lot to catch up with its peer economies by creating better framework conditions and providing the right incentives for supporting more R&D activities of the business sector. In this spirit, the EU should seriously consider whether the

present external level-playing field rules are beneficial to boosting growth and innovation in key areas for emerging tech such as AI.

The abundant state aid that private companies receive in China and other countries has previously raised concerns about whether the EU and its members should continue to refrain from providing support to European companies.[80] Previous debates about the internal/external level-playing field has become more relevant in the aftermath of the Covid-19 pandemic, as boosting innovation for European companies will be crucial in order for them to withstand global competition. While the relaxation of competition and level-playing field rules could offer more room for growth, it will have to be coordinated at EU level, applied consistently, and be challenged in courts when necessary – this would be vital in engaging market interventions while avoiding protectionism.

If policy measures are not taken to boost growth in high-capacity network and data infrastructure, as well as AI and other emerging tech, then highly innovative EU firms could lose their comparative advantage to other non-EU companies and could also find it hard to catch up and adopt technologies that are developed elsewhere.

## Engage

### Leveraging EU regulatory power to shape global tech standards

Engaging internationally means leveraging the EU's regulatory power to boost partnerships and cooperation for the global governance of data, digital markets, emerging technologies, and international data flows. Growth and innovation in digital tech and data networks are highly dependent on open and fair

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[78] Ibid.
[79] Ibid, p.112

[80] Zuleeg, Fabian (2020), "The end of the level playing field?", Brussels: European Policy Centre.

competition, data-access, and collaboration between international experts. The EU should endeavour to strengthen existing diplomatic bodies and multilateral organisations in line with its democratic values and tradition.

## Digital Tax: Pursuing the OECD track to foster global alliances and EU 'digital conditionality'

Differences between the US and Europe on the regulation of the digital economy have come to the fore in 2019 in light of the debate on a digital services tax. Strongly advocated by France, this measure has been fiercely opposed by the US, whose tech giants would be affected by a European digital tax regime. At time of writing, there are still important challenges in bridging differences in the OECD and an agreement looks elusive for the 137 countries involved in the ongoing negotiations, given that they could lose or gain depending on the design of the proposed rules. Additionally, there are also differing positions on the issue among observers and other stakeholders in the EU27.[81]

The two-pillar approach proposed by the OECD aims to bring clarity in the global governance of tax revenues from multinational big tech companies. Pillar one would aim to proportionally reallocate some of the multinationals' profits back to OECD countries. Pillar two would seek to establish a global minimum digital tax rate.[82]

The main challenge until now has been the US's opposition to any solution that would disproportionally affect the GAFAM. To reduce this risk, the US has put forward counterproposals to extend the global tax regime beyond digital businesses and threatened to introduce unilateral tariffs.

Additionally, the threat of a years-long litigation between GAFAM multinationals and national tax authorities is especially urgent for developing countries, because their resources and litigation experience are insufficient. They could lose out in the event of unending legal disputes with the GAFAM.[83]

Time is of the essence, considering that in the absence of a solution before the end of 2020, some countries seem inclined to introduce digital taxes at the national level. While there are many countries participating in the OECD digital tax talks, in the bigger scheme of things, an agreement between Europe and the US will be crucial to achieve a multilateral solution.

The incoming Biden administration could provide new opportunities for re-engaging with the US in the OECD talks on digital services taxation. The EU should aim to capitalise on this opportunity, and engage with the US on other important areas where perspectives differ across the Atlantic, but where there is arguably a shared interest to define mutually acceptable solutions. An example is the security of data flows between the two partners. Cooperation with the US could bring opportunities for innovation in tech policy, as Executive Vice President Commissioner for Trade Dombrovskis announced during his hearing at the European Parliament.[84] The EU has already made clear its willingness to re-engage with the US on the issue of fair taxation in the digital economy, as well as other important digital priorities that were outlined in the European Commission's proposal for 'a new EU-US agenda for global change' and the EU Council's conclusions on EU – US relations.[85] As things stand, EU heads

[81] Köster, Thomas (2019), "Digital tax - a chimera", Berlin: Konrad-Adenauer-Stiftung.
[82] Gottlieb, Isabel, "Both Pillars of Digital Tax Plan Needed for Agreement, OECD Says", Bloomberg Law, 29 September 2020.
[83] FACTI (2020), "FACTI PANEL INTERIM REPORT", (accessed 11 December 2020).

[84] European Commission (2020), "European Parliament: EVP Dombrovskis speech at the hearing for the Commissioner-Designate for Trade".
[85] European Commission (2020), "A new EU-US agenda for global change," JOIN(2020) 22 final; Council of the European Union (2020), "Council Conclusions on European Union – United States relations," Press Release 884/20.

of state and government will revisit the digital tax issue in March, to decide what should be the EU's course of action – suggesting that the time between now and then should be used by the Biden administration to clarify its position.[86]

Alongside prospects for renewed EU-US cooperation, the EU should also preserve close collaboration with its other OECD partners regarding the (forthcoming) EU legislation on data governance, AI, and digital services. By assembling a coalition of states within the framework of the OECD, the EU could foster its regulatory power and foster its "digital conditionality" to shape international cooperation and rules at a global level.

### International data flows: balancing the principles of data protection and data access

To ensure the safe transmission and privacy of data transferred between the EU and third countries, the European Commission grants third countries a 'decision on adequacy'." Reaching a decision depends largely on whether a third country's national security and intelligence gathering activities present vulnerabilities in relation to the handling of EU citizens' data.[87]

In this context, there are two types of adequacy: partial and full adequacy. Full data adequacy depends on 'essentially equivalent' regulations to the EU's GDPR, where data flows between different national/regional data jurisdictions are unrestricted. Partial adequacy applies to countries/regions with lower privacy standards legislation – in this case, data flows are unrestricted only for certified organisations/sectors, and contingent on the adoption of joint framework mechanisms, such as the Privacy Shield, which was the basis of the EU's data access relationship with the US.

Adequacy decisions do not result from conventional negotiations like in the realm of trade, because the EU considers data adequacy under the EU's Charter of Fundamental Rights – which has the status of an EU treaty and is non-negotiable. Additionally, the ECJ can decide on adequacy relating to data protection, "even where the Commission has adopted a decision finding that a third country affords an adequate level of protection of personal data."[88]

The EU-US Privacy Shield agreement was adopted in 2016 to guarantee the secure transmission of EU data to the United States. Since then, the framework has permitted unrestricted transfers of data from the EU to over 5,300 US-based companies. However, its invalidation on 16 July 2020 by the ECJ could provoke major disruption to transatlantic data flows.[89] The 2018 US Cloud Act was one of the main reasons behind the ruling. This piece of legislation allows US intelligence agencies to access data hosted by US firms, regardless of the jurisdiction in which the server is physically located.[90] Considering the EU's current dependency on US cloud and storage services, this issue is of major importance.

There are also doubts about the future of EU-

[86] Euractiv, "Biden should clarify US position on digital tax within two months, France says," 1 December 2020; Financial Times, "France demands digital tax payments from US tech groups," (25 November 2020).

[87] Aktoudianakis, Andreas , "Data adequacy post-Brexit: Avoiding disruptions in crossborder data flows", in Aktoudianakis, Andreas, Jannike Wachowiak and Fabian Zuleeg (2020), *Towards an ambitious, broad, deep and flexible EU-UK partnership?*, Brussels: European Policy Centre.

[88] Court of Justice of the European Union, Judgment in Case C-362/14, *Maximillian Schrems v Data Protection Commissioner,* The Court of Justice declares that the Commission's US Safe

Harbour Decision is invalid, No117/15, 06 October 2015, Luxembourg, p.1.

[89] Lea, Nathan and Patel, Oliver (2020), "EU-U.S. Privacy Shield, Brexit and the Future of Transatlantic Data Flows", London: UCL European Institute; Court of Justice of the European Union, Judgment in Case C-311/18, Data Protection Commissioner v Facebook Ireland and Maximillian Schrems, The Court of Justice invalidates Decision 2016/1250 on the adequacy of the protection provided by the EU-US Data Protection Shield, No91/20, 16 July 2020, Luxembourg, p.1.

[90] Senate of the United States (2018), "CLOUD Act", (accessed 10 December 2020).

UK data flows, following the end of the Brexit transition period on December 31, 2020. Post-Brexit, the UK government has suggested it intends to deviate from data protection levels that are "essentially equivalent" to those of the EU.[91] The European Parliament has already expressed concern that the UK's current data regime provides a "broad exemption from the data protection principles and data subjects' rights for the processing of personal data."[92] The cost of disruption would be significant for both the EU and the UK.[93] About 75% of UK data flows are with EU countries, exporting digital services amounting to £28 billion in 2018.[94] Reaching an adequacy decision with the US, and the UK, could be difficult. For all the challenges that are part of ongoing negotiations with key partners, adequacy decisions illustrate the significance of the EU's regulatory power, which can condition other economies to adopt equivalent or similar data protection standards that can foster the free flow of data for citizens, industry, and business. The EU should preserve this role. At the same time, the EU should also strive to adopt a better balance between the principles of data protection and data access more generally to address concerns from EU SMEs whose business model may depend on the continuity of data flows with other economies.

While these two goals seem contradictory, reconciliation might lie with the next review of the GDPR in 2024.[95] To preserve high data privacy standards and the free flow of data with its peer economies, the EU should seek

to adapt its GDPR in a way that enables data transfers for crucial tech sectors by formulating a clearer distinction between personal/non-personal data.

## 5G: banning global competitors could undermine growth and innovation for EU 6G

Apart from overreliance and security concerns, the issue of 5G supply is also a matter of competition and global market capitalisation. The geopolitics involved in the race to 5G, together with the previous considerations developed in the section on *Brace*, require a long-term approach. Rather than placing outright bans on non-EU technologies, the Union should seek to engage in efforts aiming to minimise risks and address overdependence, weak growth, and innovation in this field of the Single Market.

The EU needs to rise to the challenge in the long term by aiding its so-called European champions to increase their levels of growth and innovation.  For example, state-backed Huawei invests considerably more in research and development: in 2018, Huawei's R&D expenditure was around $14.8bn, while Nokia's was around $5bn and Ericsson's around $4bn.[96]

Despite short-term benefits, a ban on Huawei could undermine competition and growth for the entire market in the long term. It could stifle room for potential global tech synergies, and ease pressure on EU companies to remain competitive and grow internationally. A ban could also indirectly relegate European 5G in the backseat and discourage the timely

[91] Council Agreement on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community (2019), 2019/C 384 I/01, Art.71(1, 3).
[92] European Parliament (2020), Motion for a resolution to wind up the debate on the statements by the Council and the Commission pursuant to Rule 132(2) of the Rules of Procedure on the proposed mandate for negotiations for a new partnership with the United Kingdom of Great Britain and Northern Ireland (2020/2557(RSP)), B9-0098/2020, para.32.
[93] Aktoudianakis, Andreas (2020), "Data adequacy post-Brexit: Avoiding disruptions in crossborder data flows", in

Aktoudianakis, Andreas, Jannike Wachowiak and Fabian Zuleeg (2020), *Towards an ambitious, broad, deep and flexible EU-UK partnership?*, Brussels: European Policy Centre.
[94] UK Department for Digital, Culture, Media & Sport (2020), "DCMS Sectors Economic Estimates 2018: Trade in Services", London.
[95] European Commission (2020), "Two years of the GDPR: Questions and answers", (accessed 11 December 2020).
[96] OMDIA (2019), "it's not just the size of your randd its what you do with it ericsson huawei and nokia explore new areas", (12 October 2020).

research and development of 6G.[97] Banning Huawei could, at the end of the day, lead to a more systemic fragmentation in the DSM, if EU data networks would not be cutting-edge, making it more difficult for EU start-ups and other companies dependent on data networks to grow and compete internationally.

On global standards, some 5G manufacturers now suggest pushing for open radio access network specifications (OpenRAN). OpenRAN is an alternative to RAN that supports interoperability between different suppliers of 5G equipment. By developing 5G with OpenRAN, there would be an increase in interoperability and decrease in cost among different suppliers. There are some obvious benefits, such as the potential of OpenRAN to allow European SMEs to innovate on the stunning range of emerging technologies that will be dependent on, and interwoven with, the 5G platform.

Nevertheless, the EU should consider these calls from business with caution. An OpenRAN model could cause fragmentation in global and regional standards on 5G. This could see the EU member states adopting different security (and other) guidelines post-5G.[98] Additionally, an OpenRAN model could offer competitive advantages to US companies that may not have a strong 5G sector on hardware, but have considerable advantages in producing the software that makes OpenRAN devices work.

If the EU decides to adopt OpenRAN, and in light of the renewed expectations for EU-US cooperation on digital issues, the two partners should consider partnering on a joint initiative, to start a platform for transatlantic cooperation on 5G and other emerging technologies that will be dependent on the 5G platform and future connectivity technologies. The partnership could be framed in similar lines as the European Gaia-X project, insofar as it concerns an agreed set of rules that will enable different partners/providers to work synergistically on solutions that boost interoperability, and technical implementation, between the EU and US. This partnership could bring the important know-how that Europe has in the field of building telecommunications networks, together with the US's thriving software ecosystem manufacturers for managing these networks.

Furthermore, to foster its digital sovereignty, the EU must develop the right framework conditions to encourage its tech sector to increase investment in R&D and infrastructure, not least with a view to be prepared for the introduction of 6G. The recent declaration by 18 member states to launch "*A European Initiative on Processors and semiconductor technologies*" could boost Europe's share of the global semiconductor market which currently stands at 10% - that is rather low considering the EU's economic standing.[99] This is important for the entire EU tech sector value chain, and the case of 5G serves as a good example, as data infrastructure and mobile phone devices, among others, are heavily reliant on these technologies.

## AI: continue pursuing a multilateral approach

Shaping a broad international alliance for responsible AI development will be critical for the potential long-term success of the EU's AI strategy. However, current differences in the

[97] Hobbs, Carla (2020), "Europe's digital sovereignty: From rulemaker to superpower in the age of US-China rivalry", Brussels: European Council on Foreign Relations
[98] Hosuk, Lee-Makiyama and Florian Forsthuber (2020), "Open RAN: The Technology, its Politics and Europe's Response," Brussels: ECIPE

[99] European Commission (2020), "Member States join forces for a European initiative on processors and semiconductor technologies," (accessed 11 December 2020).

legal frameworks for data protection and privacy at the global level, as well as geopolitical tensions between the US and China, make it hard to predict what alliances the EU could foster in this field. In any case, without a broad international alliance for responsible AI, EU efforts to foster growth in this sector through good regulation could be dwarfed by the gargantuan investment on AI in the US and China. Thus, along with good regulation, the EU should also foster greater investment.

At the multilateral level, the OECD's Principles on Artificial Intelligence and the G20 have largely converged with the EU's White Paper on Artificial Intelligence.[100] Nevertheless, translating those principles into actual regulations that can shape the development of this technology faces several obstacles. Firstly, as these are non-binding legal tools, they do not have any real "teeth" that can foster effective enforcement. Secondly, the ongoing geopolitical rivalry between the US and China can hamper the development of these non-binding recommendations into actual regulations and, more generally, the global dialogue on internet regulation.

It is currently hard to see how a global coalition would serve the interests of leading economies in AI, due to the different regulatory models and present capacities that the US, China, and the EU have developed in this field. The US had initially chosen to abstain from multilateral fora on emerging technologies such as AI out of fears that it could slow down American tech companies.[101] The fact that the US has recently joined the Global Partnership on AI was an encouraging sign for international AI cooperation.[102] However, a truly global partnership on AI

could not work without China. Paradoxically, Beijing's endorsement of the OECD and G20 processes has made international cooperation on AI harder, as the US has been trying until now to exclude China by striking deals with like-minded countries.[103] That said, a future Biden administration is likely to engage more meaningfully with this field, if it is going to honour its campaign promise to "ensure the technologies of the future like AI are bound by laws and ethics and promote greater shared prosperity and democracy."[104]

Geopolitical tensions suggest that there is little room for international cooperation on AI. While the EU aims to foster AI coalitions through global fora, current frictions are undermining these efforts. The erosion of multilateralism on global AI cooperation, and internet more generally, would have detrimental consequences that are hard to predict. Despite all obstacles, the EU should continue pursuing a multilateral approach that can foster development in the future, when the prospect for global cooperation and/or alliances has greater potential. While developments in the US are taking place, the EU should maintain a stable approach and foster greater AI regulatory alignment among its member states to encourage AI growth in its Single Market. That can promote development at home until the time is ripe to engage internationally with like-minded partners.

In this spirit, the EU should consider appointing an envoy on matters of tech governance to global diplomatic dialogues. This could galvanise debates in different EU member states about the future of global AI regulation and foster integration across the EU on this emerging technology. As the dual

[100] OECD (2019), "Recommendation of the Council on Artificial Intelligence", (accessed 11 December 2020).
[101] Schmidt, Eric, and Bob Work (2019), "The US is in danger of losing its global leadership in AI", The Hill.
[102] Hodan, Omaar (2020), "U.S. Global Leadership on AI a Welcome Development", Center for Data Innovation.

[103] Hobbs, Carla (2020), "Europe's digital sovereignty: From rulemaker to superpower in the age of US-China rivalry", European Council on Foreign Relations.
[104] Biden Harrris, "The Power of America's Example: The Biden Plan for Leading the Democratic World to Meet the Challenges of the 21st Century", (accessed 11 December 2020).

use of AI technology makes it hard to distinguish between civilian and military applications, the EU should also consider expanding the focus of its regulatory power to the field of military AI applications—something that the White Paper on AI explicitly does not address. However fragmented EU member states will be on this, it is a crucial consideration if the EU wants to grow as a geopolitical actor and not get trapped in a G2 world between the US and China.

## Conclusion

As Jean Monnet wrote in 1954, "our countries have become too small for today's world, faced with America and Russia of today and the China and India of tomorrow." [105] This was at a time when Europe represented 37% of global GDP and 13% of the world's population. Today, the figures are at 22% and 7%.[106]

Concerns about Europe's diminishing global economic clout and geopolitical influence are strongly reflected in the debate on digital sovereignty and the broader debate on EU strategic autonomy. But efforts aiming to enhance Europe's digital sovereignty should by no means lead to protectionism and isolationism.

Pursuing protectionist and isolationist policies might seem appealing in the short term, given that they can lead to competitive advantages and fast revenues to businesses in specific sectors. However, after short-term benefits recede and returns on investment start diminishing, the EU would likely find its global

economic clout and competitiveness further decreased. Therefore, digital sovereignty should not be understood as long-term independence. Independence in the digital or tech sector is no sustainable solution for attaining digital sovereignty, or strategic autonomy more broadly.[107]

While remaining open, the EU should engage pragmatically with these challenges, and ensure that it uses all tools at its disposal to address them effectively. Crucially, rules about fair competition and level playing field can only work when they are followed by everyone. As this is not the case, and as developments in the tech sector are rapid and apt to cause decisive changes in the global balance of power, the EU should openly consider whether its rules about external level playing field still foster growth for its Single Market.

In the words of President von der Leyen: "we all know that the more data we have, the smarter our algorithms. This is a very simple equation. And therefore, it is so important to have access to the data that are out there."[108] Growth and innovation in new technologies are largely dependent on the availability of abundant and accessible data, as well as regulatory clarity, specialised labour, funding, and international engagement in order to shape global governance.

Rather than reacting to global developments in digital policy and new tech, the EU should proactively deliver on its digital agenda. To attain that end, the EU must seek to decrease its overdependence on foreign technologies and digital services; eliminate barriers to unleash the potential of data in its Digital

[105] European Central Bank (2017), "The Monnet method: its relevance for Europe then and now", (accessed 11 December 2020).
[106] European Union (2019), "How big is the EU economy?", (accessed 11 December 2020); Eurostat (2020), "The EU in the world – population", (accessed 11 December 2020); PWC Global, "The World in 2050", (accessed 4 Dec 2020).

[107] Barker, Tyson "Europe Can't Win the Tech War It Just Started", *Foreign Policy*, 16 January 2020.
[108] European Commission, "Press remarks by President von der Leyen on the Commission's new strategy: Shaping Europe's Digital Future", 19 February 2020.

Single Market, invest in innovation and talent; and engage internationally to shape the global governance of data, digital markets, and emerging technologies, in line with its democratic values and traditions. As a result, Europe would foster its digital sovereignty in an increasingly competitive global environment.

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This paper is part of the joint EPC-KAS project on "Fostering Europe's strategic autonomy: priorities for action" that runs throughout 2020 and aims to outline a concrete agenda to strengthen Europe's role in the world and its sovereignty.

In an increasingly competitive and volatile international environment, Europe needs a stronger power base to uphold its values and interests, confront challenges, engage with partners, and support rules-based cooperation. To attain these goals, the European Union needs to become a more strategic and autonomous actor on the global stage.

Pursuing strategic autonomy is ultimately about empowering Europeans to take and implement decisions to advance their priorities in cooperation with others, where possible, and on their own, if needed. This is essential to reinforce European sovereignty – Europe's ability to shape its future.

Progress towards strategic autonomy requires concerted action across various domains, including Europe's economic power base, technology and innovation and security and defence. This project encompasses activities targeting each of these areas, with a view to defining priorities for action for Europe in a challenging global context.

*The views and opinions expressed in this paper are those of the author and do not necessarily reflect those of the organizations they are associated with*