



Sovereignty, Resilience and Trust

Strengthening Europe's Digital
Economy After COVID-19



About the GSMA

The GSMA represents the interests of mobile operators worldwide, uniting more than 750 operators and nearly 400 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces the industry-leading MWC events held annually in Barcelona, Los Angeles and Shanghai, as well as the Mobile 360 Series of regional conferences.

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“Business as usual is no more... we will need to build a resilient, green and digital Europe.”¹ So said European Commission President Ursula von der Leyen on 20 April 2020, when the economic consequences of the COVID-19 pandemic were becoming clear.

Even then, the crisis was showing the world that digital infrastructure is essential for social welfare and the continued functioning of the economy. Citizens were embracing new ways of engaging and interacting, businesses were pivoting to more virtual modes of operation, and sectors including healthcare, education and retail were looking to digital alternatives to meet the needs of a society in various stages of the coronavirus response. With this public health crisis, we have seen how digitalisation can facilitate swift and positive change when the circumstances demand it.

Now, as the Commission envisions a Digital Decade, implementation of Europe’s digital strategy² is more pressing than ever. Acknowledging connectivity as “the most fundamental building block of the digital transformation,” the strategy identifies a range of measures to strengthen Europe’s digital economy, generate value in alignment with European values and establish greater sovereignty in the era of Big Tech. Digital sovereignty is a central tenet; Europe must ensure that digital infrastructure and services

are not defined exclusively by overseas companies whose interests are not its own and over which it has limited authority.

The European mobile industry applauds these aspirations. We believe that Europe can emerge from the COVID-19 crisis stronger, and connectivity will play an essential role. In the short term, digital solutions will allow people to return to work more quickly by facilitating social distancing. Longer-term, we will need to consider where investment should be targeted, recognising that economic activity might not return to pre-crisis levels for years to come. Some global supply chains might never fully recover, and this will introduce inefficiency to the system.

Supply-chain disruptions may present an opportunity for Europe to regain sovereignty in some strategically important areas. On the other hand, a telecoms sector weakened by chronic overregulation could be exposed to greater foreign control.

A robust and resilient telecoms sector will also play a critical role in Europe’s ability to meet its environmental commitments. Through what we call ‘the enablement effect’, increased use of smart, connected technologies across all economic sectors will make a manifest difference in greenhouse gas emissions.

The future will require us to be more resilient and

1. www.euractiv.com/section/future-eu/interview/von-der-leyen-we-now-need-to-build-resilient-green-digital-europe/

2. ec.europa.eu/info/sites/info/files/communication-shaping-europes-digital-future-feb2020_en_4.pdf

more digital, and this calls for rapid and bold action. By increasing the pace of digitalisation, Europe can achieve new efficiencies linked to the new attitudes and behaviours we see taking hold across society.

This document highlights three areas (Figure 1) where decisive policies are needed to propel Europe towards greater digital self-determination and technological leadership – for the benefit of all.

Figure 1: Policies to achieve greater digital resilience, sovereignty and trust





Telecom Infrastructure

For digitalisation to be successful, people and businesses everywhere must be connected to best-in-class networks, and Europe is lagging behind. Part of the problem is the deep regulatory intervention that uniquely targets the telecommunications sector.

Our sector's capability to invest is constrained by persistent micromanagement and regulation based in politics rather than sound economics. In other sectors, governments shape the broad conditions for the market and are conscious not to overreach, while in our sector, governments are intervening in the market, artificially creating new sub-scale players and preventing exit. The COVID-19 crisis has demonstrated the importance of network resilience and quality. Policymakers should take this experience into account as they recalibrate regulations to support sustainable investment in networks and more balanced objectives on network quality and price.

The Facts

Challenging conditions for investment. Due to declining revenues, European telecom operators' return on capital employed fell from an average of 10 per cent in 2010 to 5 per cent in 2018, in many cases to levels even below the cost of capital, making Europe an increasingly unattractive market for investment.³ The net effect is that, over the past decade, Europe has invested 40 per cent less per capita in its telecoms networks than the US. Moreover, COVID-19 has triggered additional costs and investment requirements for operators which, combined with weaker revenues as business customers react to the financial damage of the pandemic, further expand the investment gap.

Absorbing the cost of 5G. Meanwhile, 5G will cost much more to deploy than previous mobile technologies, given its greater complexity and

the potential need for denser coverage of base stations in the medium to long term. The European Commission has estimated it will cost 500 billion to meet its 2025 connectivity targets, including 5G coverage in all urban areas. To put this figure into context, total investment by European operators over the past five years was around 127 billion.⁴

Lagging 5G adoption. While Europe currently compares well with other regions in terms of the number of 5G trials and commercial launches, GSMA Intelligence forecasts that Europe will have around 220 million 5G connections by 2025, equivalent to only a third of the region's total connections. This will leave Europe trailing the leading 5G markets such as the US, Japan and South Korea, which will see adoption levels between 50 and 60 per cent.

3. Mobilise: Telecommunications, is it a declining business model?

4. GSMA Intelligence

Policy Action

Europe needs a market environment that encourages critical infrastructure investment, even more so post-COVID-19. Because the regulatory environment has proven to be an impediment to capital investment, policymakers need to shift to measures that foster financial sustainability of the sector, ensuring the European mobile industry is globally competitive.

I Asset Utilisation

Prohibit economic devaluation. Avoid devaluation of network investments made and avoid undermining incentives to invest in new infrastructures. This would require inter alia to establish favourable economic conditions to the deployment of network infrastructure and avoid any intrusive interventions into the calculation of costs and return on investment requirements that do not reflect commercial or financial realities.

Update merger assessment tools. Improve merger reviews conducted by competition authorities through a greater focus on long-term investment and a more balanced consideration of remedies, taking into account the challenging competitive landscape.

Ensure non-discrimination in spectrum assignments. Advise Member States against providing preferential treatment for new entrants in

spectrum auctions. Encourage voluntary sharing of spectrum, while avoiding the reservation of national spectrum for private networks and interventions in the area of national roaming.

Encourage network sharing. Develop guidance to allow the industry to achieve more efficient network coverage through collaborative approaches, without eroding the benefits of competition.

Overcome micromanagement of the market. Align regulation in the consumer space with the horizontal regulation applicable to all digital services and only apply regulatory intervention in relation to network access, where there is a clear and demonstrated market failure. Any such network access intervention should be limited to the minimum intervention necessary to remedy the identified market failure and give preference to commercial agreements.

I Cost Reduction

Eliminate spectrum price inflation. Ensure Member States do not push up the cost of spectrum by creating artificial scarcity or setting excessive reserve prices, renewal prices and other fees, and avoid sector-specific taxation, all of which reduce and delay network investment.

Foster supply-chain diversity and competition to improve network security and resilience through disaggregation and greater interoperability.

Take an internationally coordinated approach to standardise open interfaces for 5G radio access network components (so-called OpenRAN) with a progressive schedule that supports the formation of a European Open RAN ecosystem. Provide government support through public funding and industrial policy that stimulates and helps to create market scale for mobile operators and vendors.

This includes, for example, support for early deployments and light-house projects, funding of chipset development and R&D (including test and integration labs) to develop more advanced and competitive choices and commercial-grade equipment in Open RAN.

Facilitate network deployment. Conduct an ambitious review of the Broadband Cost Reduction Directive, which introduces a harmonised light licensing regime for antenna sites to reduce deployment costs and the response time for permits. Encourage full Member State alignment to global EMF standards. Make public real estate, including street furniture, available for free. Provide financial support for uneconomic network deployment to allow operators to extend their digital infrastructure to rural or underserved areas.



Digital Economy

In the near future, billions of interconnected devices and smart objects will generate vast amounts of data. Combined with unprecedented network speed, processing power and storage capacity, this will enable the automation of wide areas of our economies such as automotive, manufacturing, health and agriculture. However, the associated economic value can only be captured for Europe if it implements end-to-end data journeys within its borders, across industries, from telecom infrastructure to cloud and edge devices to artificial intelligence algorithms to new solutions that leverage ubiquitous connectivity, secure and efficient communication and computing services.

Europe's current lack of control of its own cloud infrastructure is a threat to its future sovereignty. An essential component of European digital sovereignty will be the development of new services leveraging a largely available and distributed cloud and edge infrastructure based on European rules governing data privacy, storage and processing.

Digital infrastructure and services rely on a large set of integrated hardware equipment and software components, which are provided by an array of international actors. To improve European sovereignty in digital service architecture, Europe should continue its active support, governance and promotion of open source communities, playing a neutral and stable role within the context of geopolitical uncertainty.

5G networks, through a combination of AI and new technologies such as network slicing and multi-access edge computing, will create new opportunities. European telecom operators should be encouraged to explore these more freely, both individually and collectively.

Europe is still hindered by a competition law framework that lags behind the technological reality.

Current tools used to define markets do not take into account technological innovations, resulting in markets that are too narrow in terms of product and geographic dimensions, which therefore fails to recognise competitive constraints from adjacent markets.

Small and medium-size enterprises constitute more than 90% of the companies across the European economies and creates two out of three private-sector jobs and more than half of the total value generated by businesses. The economic recovery will depend on their capacity to reactivate their business and to accelerate the digitalisation of their processes and service offerings.

Meanwhile, as Europe's economy pivots to digitalisation and automation, we must accelerate responsive changes in our workforce. A number of traditional jobs will become obsolete as technology becomes more efficient, accurate and cost-effective at making decisions and completing tasks. On the other hand, there is a global shortage of engineers, data scientists and systems developers. Europe should invest more to retrain workers with digital skills and to ensure a new wave of talent is readied for professions in the digital sector.

The Facts

Data as an engine of growth. Over the next 10 years, the data economy is expected to add 1.1 percentage points annually to the EU's economic growth and to boost GDP by more than 14 per cent by 2030, amounting to an extra €2 trillion.⁵ The value of the EU data economy – considering the direct, indirect and induced impacts of the exploitation of data – will double by 2025, reaching between 4.2 per cent and 6.3 per cent of Europe's GDP by 2025.⁶

The rise of industrial data. The quantity of global data processed is expected to increase from around 50 zettabytes to 175 zettabytes by 2025,⁷ implying a compound annual growth rate (CAGR) of 27 per cent. In 2025, 60 per cent of data will come from industrial sources.

Sticky storage. Ninety-two per cent of the Western world's data is stored by US companies⁸. As the volume of data grows, companies and citizens could

become increasingly locked in, as it becomes harder to move their data to other platforms.

Opportunity at the edge. Today, 80 per cent of data is stored in centralised cloud data centres⁹. However, in five years this is expected to shift to 80 per cent of distributed storage at the edge of the network (including smart devices).

A dearth of digital talent. Europe suffers from a growing cyber-skills shortage due to a misalignment between formal education and private-sector requirements. In contrast, China and India have produced fast-growing numbers of STEM (science, technology, engineering and mathematics) graduates. The two countries could account for more than 60 per cent of the STEM graduates in major economies by 2030, compared with only 8 per cent for Europe and 4 per cent for the US¹⁰.

Policy Action

Policymakers should encourage the paradigm shift that 5G architecture, with its transition to the edge, will create. By adjusting the regulatory framework, they can enable the data economy to thrive in Europe.

Cloud Infrastructure

Foster a distributed cloud and edge infrastructure for Europe. Support an open, federated data infrastructure and associated computational services, based on secure and efficient international communication networks and connectivity.

Ensure an interoperable mobile edge cloud.

Promote platforms that allow straightforward switching between cloud services. Encourage secure access to commoditised components and solutions by open source communities, as security must be implemented in all layers of digital service architecture.

5. European Commission Digital Strategy

6. IDC. Includes the generation, collection, storage, processing, distribution, analysis elaboration, delivery, and exploitation of data enabled by digital technologies

7. IDC "Data Age 2025" whitepaper

8. Atlantic Council's Future Europe Initiative

9. Gartner, July 2019

10. BBC: China opens a new university every week

I Regulation Fit for the Digital Age

Promote a level playing field through horizontal frameworks. Ensure that different layers of the value chain are regulated in broadly equivalent ways, removing the risk of arbitrary distortion of investment and value attribution between layers caused by different regulatory approaches (e.g., taxes, privacy, security, access, consumer protection).

Review the approach to defining relevant markets. Develop guidance for competition law authorities

that enables them to look across all relevant digital services and providers in assessing market participants' gatekeeper position and the likely anti-competitive effects.

Create a more harmonised regulatory environment for IoT. Ensure IoT products are not captured by different legacy regulations. Adopt a harmonised, technology-neutral approach that includes measures to promote the voluntary sharing of non-personal IoT data.

I Digital Development

Foster the use of network data for innovation. Permit a more flexible use of network traffic meta-data (i.e., signalling data), in line with the risk-based approach of the GDPR. There is no justification for treating network data subject to the ePrivacy Directive (and its pending review) different from data subject to GDPR.

Accelerate digitalisation of companies and public administrations. Create a massive public funding program and financial incentives to support the digitalisation of SMEs, and implement digital transformation strategies for public administrations.

Build a digitally skilled workforce. Create a leading cybersecurity campus featuring R&D hubs that blend cyber capabilities with AI applications to attract, educate and retain talent.

Invest in R&D. Through Horizon Europe, generously fund research and development in communication technologies associated with 5G, in areas such as chipset design and manufacturing, network architectures and control, radio technology and signal processing, edge computing and metadata, and network and service security. Prioritize the European Partnership on Smart Networks and Services and the European Partnership on AI, Data and Robotics, which will benefit sectors across the economy.



A New Social Contract

Even as we glimpse with excitement a future characterised by boundless connectivity, ubiquitous automation and all manner of digital products and services, the inevitable risks and disruptions must be considered. This next digital revolution will result in computers and automated systems that integrate the physical, digital and biological worlds. Computers will have far greater capability to communicate with each other and, ultimately, they will be able to make decisions with little or no human intervention. The benefits for society will be immense, as will the challenges.

A social contract for Europe's digital society, shared by both governments and the private sector, is needed to define the key protections and principles consumers can depend on when they engage with the digital environment. We are committed to digitalisation that is anchored in human values and that creates fair, inclusive and sustainable economies and societies. Based on more responsible and accountable behaviour, this explicit commitment will embody European values and strengthen trust by all who benefit from the digital transformation.

Unreliable and misleading information lowers public

trust and threatens the quality of democracy. More recently, disinformation has shown its ability to produce far-reaching consequences, cause public damage and even endanger the health and safety of EU citizens. This is the case with persistent disinformation about the health effects of mobile signals, despite the updated international guidelines¹¹ on electromagnetic field (EMF) transmissions, which confirm that there are no adverse health effects on humans below the safeguard limits. Governments have a responsibility to address unsubstantiated fears as they consider greater harmonisation of national EMF limits across Europe.

11. International Commission for Non-Ionizing Radiation Protection (ICNIRP) RF EMF Guidelines 2020 www.icnirp.org/en/activities/news/news-article/rf-guidelines-2020-published.html

The Facts

The price of protection. To provide a safe data ecosystem, by GSMA Intelligence estimates, Europe needs about €100 billion over the next five years. The US government budget for cybersecurity in 2020 alone is close to €20 billion.¹² China spent €7 billion on cybersecurity in 2019, and this is expected to grow at about 25 per cent a year.¹³ For perspective, €100 billion is equivalent to about a tenth of EU

Member States' combined defence budgets.

From conspiracy theories to criminal acts. Since mid-March, misinformation linking 5G to COVID-19 has led to more than 180 attacks on telecoms masts in 11 European countries, as well as the harassment of hundreds of employees on the job.¹⁴

Policy Action

Reduce the digital divide. Ensure all citizens have equal access to essential digital services to communicate, to perform business and administrative tasks, and to access education and information. Take steps to raise the level of digital engagement by young people, senior citizens and economically fragile families.

Address cybersecurity threats. Proactively leverage the EU Cybersecurity Act to create and implement the necessary cybersecurity certification schemes, and establish the GSMA's Network Equipment Security Assurance Scheme (NESAS) as an EU-

approved approach. Consider launching a European 'cyber-proof' label to raise awareness and promote European cybersecurity leadership.

Promote transparency and combat disinformation. Address negative aspects of the digital economy (e.g., fake news, algorithmic bias) by supporting technical solutions, promoting good practice and educating IT practitioners. Respond to disinformation about mobile networks and health at the European and national levels with public information programmes.

12. The White House: Cybersecurity funding

13. Xihuanet: China to lead global cybersecurity market growth in next 5 years

14. GSMA



Conclusion

The recovery process from COVID-19 will unquestionably be long. In Europe, we can be thankful that the digital infrastructure has supported the heavy increase in network usage from citizens, businesses and response organisations throughout this unforeseen crisis. The experience has shown the importance of having a robust and resilient digital infrastructure as well as European data architecture that is less dependent on foreign companies. We urge the Commission to prioritise the actions identified here to reclaim digital sovereignty and economic leadership while ensuring European values are upheld by all players across the digital economy.



GSMA EUROPE

Regent Park, 1st Floor,
Boulevard du Régent 35,
1000 Brussels, Belgium
Tel: +32 2 891 8700

www.gsma.com/gsmaeurope

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