

GSMA™

New Rules for a New Era

Connecting Europe to 2030:
A Mobile Industry Manifesto
for Europe



GSMA

The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry and society thrive. Representing mobile operators and organisations across the mobile ecosystem and adjacent industries, the GSMA delivers for its members across three broad pillars: Connectivity for Good, Industry Services and Solutions, and Outreach. This activity includes advancing policy, tackling today's biggest societal challenges, underpinning the technology and interoperability that make mobile work, and providing the world's largest platform to convene the mobile ecosystem at the MWC and M360 series of events.

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Foreword

The world has entered a new geopolitical era characterised by increased polarisation, rising trade barriers, emerging conflicts and a global tech race whereby leadership in areas, such as cloud computing, AI and digital networks, becomes the determining factor for economic growth and political power.

In this race, Europe is lagging behind other global players — countries that are driving the technologies of tomorrow and securing critical sectors through innovation and competitiveness. But Europe is not destined to follow, and the mobile industry will be key in advancing the EU political agenda and achieving the Digital Decade target of 5G for everyone and everywhere, by 2030.

Connectivity is the backbone of a competitive digital and green economy. However, the European Commission's 2023 Report on the State of the Digital Decade shows that unless urgent action is taken, the EU will not meet its connectivity targets in time. This is because the telecoms sector is facing unprecedented and systemic challenges in rolling out the infrastructure necessary to achieve this goal.

Excessive market fragmentation, spectrum costs and an outdated regulatory framework have caused the telecom sector's revenues to decrease, despite growing reliance on digital networks. European telcos have lost a staggering 80% of their market value over the past 20 years, while revenues across the broader internet ecosystem have significantly increased¹. This situation, compounded by inflation, energy and environmental crises, has further deteriorated the financial performance and investment capacity of the sector. For Europe to effectively compete in the global economy and tech race, a paradigm shift is urgently needed.

A thriving mobile sector is a key driver of the EU's digital ambitions, both through its next generation 5G and 6G networks, and the technologies and innovation ecosystems they enable. It also acts as an engine of Europe's economic competitiveness as advanced connectivity enables industry, including SMEs, to reap the value and transformative benefits of digital technologies. This opens up new opportunities for technological innovation in multiple sectors, including in strategic sectors ranging from energy to manufacturing.

Mobile operators play a fundamental role in enabling the green transition by increasing energy efficiency and supporting the adoption of clean technologies. Connectivity is vital in closing the digital divide and ensuring social cohesion, granting all citizens and businesses access to digital services such as e-government.

The sector is also key to a secure and resilient Europe that develops its own technological capabilities and creates prosperity for its own future. When Europe was hit by profound crises, such as the COVID-19 pandemic, cyberattacks and the war in Ukraine, the mobile industry responded, ensuring that Europeans citizens and businesses remained connected.

In its exploratory consultation on the future of connectivity, the European Commission recognised the industry's strategic importance and societal role. More reflection is expected with the recently published White Paper.

The time has come to act and establish a new regulatory framework that allows for long-term investment, recognises the need for economies of scale and enables the fast deployment of world-leading connectivity — allowing the EU to regain the competitiveness and technological leadership it has lost. To realise its digital future and achieve its geopolitical ambitions, Europe needs a new digital infrastructure framework fit for today's challenges.



Laszlo Toth

Head of Europe and CIS, GSMA

¹ [The Internet Value Chain](#), GSMA, 2022





The Mobile Industry and Europe — A Shared Vision

The mobile industry and Europe share a vision for the future, and the mobile sector partners with the EU in many ways to support these common goals.

Next-generation 5G (especially 5G standalone) and 6G networks will be a pillar for the technological revolution. Connectivity is the lifeblood of technologies, such as AI and big data, cloud, quantum computing and the metaverse. These technologies will transform every industrial sector, as well as the provision of public services, allowing users to benefit from advanced digital experiences.

This mobile industry manifesto offers practical examples of how the sector's technological innovations benefit Europe's society and economy in line with its broader ambitions, and presents a call to EU policymakers for urgent action.

01 Realising Europe's Digital Innovation

The mobile sector is strengthening Europe's position in the global tech race by innovating and delivering pan-European digital networks and services of the future. Next-generation 5G is a key enabler for the deployment of new technologies such as cloud or metaverse², which are vital for the digital transformation of European businesses, governments and society at large.

GSMA Open Gateway

GSMA Open Gateway is an industry-led framework of standardised APIs that opens up mobile operators' networks to developers and cloud service providers. This serves as a platform for any digital innovation to multiply its possibilities and reach. It allows business users to seamlessly connect to the nearest edge cloud and benefit from on-demand networks tailored to their latency and quality needs.

Private Campus Network for University Research

Deutsche Telekom has built a campus network for the Brandenburg University of Applied Sciences (THB) in cooperation with the state of Brandenburg. THB's new 5G standalone campus network is powerful, consumes less energy and offers more technical options and safety. It operates separately from the public mobile network, which means that external customers cannot use the transmitters of the network behind them. The entire THB infrastructure, from the antennas to active system technology, gateways and the network server, is located on the premises and under the control of THB. This means that all data traffic remains in the local campus network and the data can be processed even more quickly and securely. This project will help make the economy and administration in the state - especially SMEs and public administration - more innovative, efficient and resilient.

² [Staff Working Document accompanying the Strategy on Virtual Worlds](#), European Commission, 2023

02 Advancing Europe's Competitiveness

The mobile sector acts as the engine of European industrial transformation, economic growth and innovation by providing the resilient, high-capacity networks necessary for the uptake of next-generation technologies. This will ensure that European business, including SMEs, and strategic sectors, from energy to manufacturing, maintain the edge needed to drive growth in an increasingly competitive world.

Smart Factories

Telefónica, Gestamp and Mobile World Capital have implemented a 5G-connected factory use case in one of their plants in Barcelona to test advanced technologies behind Industry 4.0. Industrial machinery is connected with new 5G technology to process data generated in real time thanks to edge computing. With this data, the factory is virtualized, so it can perform massive simulations that allow optimal operational decision-making in an intelligent, connected, flexible and wireless factory. The ability to achieve this digital transformation with 5G, edge cloud and digital-twin technologies will be a building block of Europe's future industrial competitiveness.

Digitalisation of SMEs

While larger businesses have the resources and scale to invest in bespoke IT solutions, SMEs must rely on more affordable 'plug and play' products. To help meet these needs, Vodafone

is developing Digital Toolkits to meet the needs of its SME customers. Digital Toolkits comprise a broad range of solutions, including digital marketing, e-commerce, cyber security, digital business solutions and smart-working solutions to appeal to SMEs in different stages of their digitalisation journey.

Smart Farming

In the Netherlands, KPN is using 5G farming techniques to innovate, optimise costs and reduce carbon emissions. The use of irrigation sensors optimises water management, reducing associated energy consumption. In addition, 5G technology precision farming is becoming more accessible to agricultural firms, enabling them to respond almost immediately to developments on farming land. As a result, farmers can make savings in areas such as crop protection, which also benefits the environment. At the same time, yield can be expected to rise, because it is possible to react straight away to the condition of the crop.

03 Enabling Europe's Green Transition

The mobile sector is reducing its own emissions as well as enabling European businesses to pursue a green transition. Efficient data traffic management is pivotal to decarbonization and reducing energy consumption across the entire ICT sector. As the fundamental pillar of technological deployment, connectivity is also vital for the uptake of clean technologies, from electric vehicles to renewable energy systems. The sector's contributions are therefore essential for Europe to achieve its net-zero targets.

Smart Cities

Smart Lighting from Deutsche Telekom enables cities to manage resources efficiently by controlling their street lighting infrastructure. The basis for this is a central, cloud-based lighting management application and the associated intelligent hardware either inside or in the immediate vicinity of the lighting fixtures. Determining the start and stop times of lighting cycles, defining area-based brightness controls and situation-based event lighting are key functions for dynamic street lighting, and make significant contributions to reducing energy costs and CO2 emissions.

Smart Grid

Telefónica and Redeia are working on a Dynamic Line Rating (DLR) device which can contribute to a more efficient operation of the grid. DLR is a solution that aims to optimise the use of the electricity transmission grid by calculating the transmission capacity of the lines in real time. Using IoT sensors, local weather stations, a cloud platform and an algorithm, real time energy transmission capacity of each line is available to the Transmission System Operator (TSO, Redeia), so the system can be dynamically operated using the transmission network's capacity without compromising its safety. The DLR system is simpler and can be implemented quicker than other grid upgrading projects, facilitating renewable integration and therefore allowing a sooner reduction of CO2 emissions associated with electricity supply. This solution is being analysed by the European Green Digital Coalition, with the aim of quantifying the benefits in terms of carbon impact.



Smart Streaming

In France, network operators, such as Bouygues Telecom, are involved in creative projects and standardisation efforts to limit the environmental impact of video streaming. On the one hand, Open Content Delivery Network solutions are exposing operator's streaming capacities to all content providers to unveil the full potential in economic growth and environmental impact reduction from optimised video content delivery.

On the other hand, network operators, content providers and administrative authorities in France are collaborating around standards governing the eco-design of digital services³. Together, optimised video traffic and network architecture will help achieve net-zero targets by acting both on upstream and downstream network capacity needs and bringing efficiently-designed content closer to the end-user.

³ Network and content providers are collaborating with ARCEP to develop a General Framework for the Ecodesign of Digital Services to support more sustainable digital solutions.

04 Empowering Europe's Citizens

Connectivity is an essential element in closing the digital divide and fostering digital inclusion, which are also part of the Digital Decade 2030 targets. The mobile sector offers value for consumers, enabling all Europeans to participate fully in society and economy. Mobile operators play an important role in empowering citizens to access online services, from health to education, and promote digital literacy and trust online, such as through e-identity and e-government solutions.

eHealth

Surgical procedures are becoming increasingly specialised. Orange, in partnership with Barco and KU Leuven, has launched a 5G project in Belgium making it possible for remote surgical experts to communicate in real time with an operating room team. The project aims to create a next-generation solution for remote collaboration with teams in the operating room and potentially allowing for control of surgical robots remotely over 5G. This would then allow for an external expert to remotely operate a surgical robot in a controlled manner for a limited, but critical portion of the operation.

Digital Upskilling

Women Plus is a project launched by TIM, with the aim of promoting the personal and professional employability of women and accelerate the achievement of gender equality in Italy. With Women Plus, women will have an app-enabled platform that supports

women's employment and empowerment through training, inspirational talks, mentorship, and job advertisements to find the opportunities that best suit their career paths and skills. This initiative is part of a comprehensive approach in line with the EU's gender equality strategy, and actions on women's equality and leadership, to promote the education of women in STEM subjects.

Bridging the Rural Divide

A joint venture in Ireland between Vodafone and ESB led to the rollout of FTTP in the remote town of Skibbereen, enabling the creation of the Ludgate hub which has attracted several businesses to the area, created 319 jobs and contributed €4m to the local economy. Further, a study estimated that similar digital hubs in every Irish county could generate over 1,000 new businesses and contribute €300 million to the economy.

Securing Europe's Open Strategic Autonomy

As the world has become increasingly fragmented and unstable, Europe must bolster its response by ensuring that its critical sectors, including connectivity, are resilient and remain secure when faced with external shocks. The mobile sector's importance as a strategic asset for Europe's resilience should be recognised and its value enhanced. This includes incentivising that European telcos maintain their presence in, and control of, significant parts of the ecosystem while also working with like-minded international partners to strengthen collective resilience.

Open Radio Access Networks (RAN)

Open RAN is a new approach to building the 5G networks that are needed to connect smartphones and devices to the internet and other users. Open RAN is key to a more cost-effective, secure, energy efficient and customer-focused network of the future. Unlike traditional RAN solutions, Open RAN disaggregates network components, enabling mobile operators to increase the resilience of their supply chain by working with a more diverse pool of suppliers. While South Korea, Japan, the U.S. and the U.K. have been betting on Open RAN, Europe must invest in order to maintain its edge on the technology.

Secure Cryptoprocessors

TIM has developed the first cryptographic microprocessor designed entirely in Italy by Telsy, the TIM Group company operating in the field of crypto and cybersecurity. The Secure Microchip guarantees the logical and physical security of the cryptographic operations underlying the security architectures of any IT system that processes sensitive information. It increases the level of security in various technological domains, from mobile devices to smart cities, cloud infrastructure to IoT applications and defence systems. In a smart factory context, the secure microchip can protect interactions between devices, integrating a sophisticated cryptographic system with the most advanced cybersecurity features. It can also be integrated into servers, if the services and IT infrastructure are located in a private cloud environment.



A New Digital Infrastructure Framework — Connecting Europe to 2030

A new approach to regulation is needed for this new era. A new digital infrastructure framework should radically reshape the governance of the sector to foster investment and innovation, unleash a true Single Market for telecoms, and achieve Europe's vision for 2030.

This requires innovative policy action and a broad reset of the policy framework governing the digital ecosystem. In this context, the following policy areas and recommendations are key:

01 Build Scale to Compete Globally

The European telecoms market is fragmented across 27 Member States. With over 100 operators present in the EU, European telcos have an average customer base of approximately 5 million subscribers each. By comparison, in China and the U.S., operators have 450 million and 110 million subscribers per company, respectively.

The mobile industry requires a predictable regulatory framework that allows for long-term investment, in-market consolidation and economies of scale, and addresses barriers in the Single Market. This would enable the sector to make the massive investments needed in digital infrastructure, keep up with global competitors, and ensure the EU achieves its connectivity targets and strategic ambitions.

This is also recognised by the European Parliament⁴ which stressed that consolidation in the EU telecom sector is a necessary stepping stone to enabling European operators to compete effectively in a global scenario.

Recommendations

- Ensure that long-term effects of investment on businesses and consumers are always taken into account as part of a merger review assessment, with a broader, more dynamic and forward-looking market assessment reflecting the changes in market realities.

- Give proper consideration to real and future competition, investments, innovation, sustainability, service output, and efficiencies — in alignment with overarching EU priorities and agreed policies — rather than focusing on theoretical modelling around alleged short-term pricing effects.
- Ensure commitments by merging parties to invest in digital infrastructure are considered as part of merger reviews.
- Revise the current framework, notably the Merger Regulation, to promote a more flexible approach to competition policy that considers these factors in its approach to mergers in the sector.

⁴ [Competition Policy Annual Report 2023](#), European Parliament, 2024

A Spectrum Policy for the Digital Decade

A more pro-investment approach to EU spectrum policy can be an important driver of Europe's connectivity goals. Effective spectrum policy can support strong and sustainable economic growth and ensure 5G for all European citizens and businesses by the end of the decade.

The very high auction costs for mobile spectrum in Europe are consistently taking away funds from the sector that could be used for investment. Mobile operators have paid a total of €66 billion in license fees between 2000 and 2019 in Germany alone. European Commissioner for Internal Market Thierry Breton has rightfully referred to spectrum as a 'cash cow' for Member States.

The review of EU spectrum policy is an opportunity to deliver wider adoption of best practices. Rules based on these principles will help achieve a more harmonised approach to licensing, encourage more ambitious investment outcomes across the Union and deliver the far-reaching goals of the Digital Decade to the ultimate benefit of EU citizens and businesses.

Recommendations

- Establish a clear roadmap for increased spectrum across low, mid and high bands so the mobile sector can deliver widespread coverage.
- Ensure long-term business certainty and alignment with investor timeframes through extended licensing periods as well as early renewals across the EU to promote long term investment in mobile networks.
- Ensure that all suitable spectrum is actually available (i.e., without artificial set-asides) and market-shaping measures are justified through socio-economic analyses, as well as that national allocation plans can be reviewed at the EU level.
- Avoid inflating spectrum prices by ensuring that they reflect opportunity cost and there is increased transparency through the collection of information from national regulatory authorities on spectrum fees.

03 Rebalancing the Digital Ecosystem

The digital ecosystem consists of several types of companies, and many of the largest tech players now operate their own connectivity infrastructure including subsea cables, backhaul and terrestrial networks. However, they are not subject to the same regulatory framework as connectivity providers, such as net neutrality rules. This creates a regulatory imbalance that needs to be addressed, as these players increasingly control users' internet experience, for example, by making independent choices in terms of prioritising traffic.

The EU Digital Declaration⁵ calls for “adequate frameworks so that all market actors benefiting from the digital transformation assume their social responsibilities and make a fair and proportionate contribution to the costs of public goods, services and infrastructures, for the benefit of all Europeans”. While the status quo for digital connectivity does not align with this principle, Europe has estimated an investment gap of minimum €200 billion to modernise its digital infrastructure and meet the 2030 Digital Decade targets.

With Europe's mobile data traffic expected to almost triple over the next 5 years⁶, large traffic generators need to resume responsibility and contribute to infrastructure costs, thereby also incentivising optimised network usage that ensures better energy savings and prevents consumers from being exposed to unnecessary and unwanted data.

Recommendations

- Close the regulatory gap to ensure equivalent rules for all service providers and level the playing field across the digital value chain, including on net neutrality, IoT products and cloud services provision.
- Introduce a new financing mechanism for the faster rollout of next generation network infrastructure, which would also provide an economic incentive for large traffic generators to manage traffic more efficiently.
- Ensure proper implementation and enforcement of the Digital Markets Act, Digital Services Act and Data Act.

⁵ [European Declaration on Digital Rights and Principles for the Digital Decade, 2022](#)

⁶ [The Mobile Economy Europe Report, GSMA, 2023](#)



04 Update Rules to Reflect the Current Reality

This new regulatory approach should encompass a re-evaluation of the existing rules to ensure they fit with the market reality and challenges of today. There is an urgent need to adapt policy principles, that were initially established 20-30 years ago, to the new technological, social, economic and competition context.

A holistic and harmonised approach is needed to address barriers to a true Single Market for telecoms. Fragmented implementation of the European Electronic Communications Code at national level, combined with a number of additional sectoral and horizontal rules, present obvious barriers for operators and result in investments being stranded or impaired.

Recommendations

- Revise the current institutional set-up to ensure coherent enforcement and implementation of sector-specific rules at national level.
- Reduce the regulatory burden on operators, reflecting the competitive dynamics in the market.
- Harmonise regulation in the fields of security and data retention, ensuring proportionality and affordability for the sector.



Conclusion

As we look to the future, our industry must keep pace with profound changes in geopolitics, the economy and society. We can, and must, help Europe to confront these changes.

In these challenging times, we have played our part in Europe to ensure citizens and businesses feel digitally empowered and protected at the same time.

The European Union and the mobile industry share the same goal – to realise a connected, competitive, digital and green future for European society in which the region stays in control of its destiny.

Let's act now, together, to make today's vision a reality for tomorrow.

