



European Telecommunications Network
Operators' Association

ETNO Policy Note

The role of Digital Communications at the time of COVID-19 Building A Digitally-Enabled Recovery

May 2020

Executive Summary

This paper offers unique insights on the impact of the coronavirus crisis on Europe's top tech business: the telecom sector¹. As we collectively work to re-design Europe's vision and strategic plans for the coming years, ETNO puts forward facts, figures, analysis and ideas on how to reboot the EU socio-economic engine by leveraging telecom networks and digital services.

- 1. The coronavirus crisis and the corresponding recession are testing not only Europe's ambitions on digital networks and services, but also its policy and regulatory framework.** A fresh look should be given on maintaining and boosting Europe's investment capacity in new telecom networks and digital services.
- 2. There is no recovery without ambitious plans for deep and widespread digitalization.** Digitalization is the "missing" link that connects Europe's recovery and growth plans with the EU Green Deal. We need concerted and bold effort to increase investment in 5G and fibre networks and ensure uptake of digital technologies by all industrial sectors, administrations and across all EU countries.
- 3. The building site for Europe's digital backbone is still open: the first step is to support and boost investment in 5G and fibre networks.** We propose to develop a strategic focus on the following 4 key priorities:
 1. reduce the cost of roll-out (p.7)
 2. EU-wide good practices in spectrum allocation and use (p.8)
 3. align competition rules and digital aspirations (p.9)
 4. focus on inclusive connectivity (p.9)
- 4. Fostering the European digital ecosystem, digital uptake and demand is as important as supporting supply.** We propose to develop a strategic focus on the following 4 key areas:
 1. deeply digitalise Europe's SMEs and public administration (p.10)
 2. involve consumers and promote adequate awareness and education on technology (p.11)
 3. pave the way for the creation of European digital leaders (p.12)
 4. unleash Europe's potential in data-driven services (p.12)

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¹ Forbes Digital 100 Index, 2019: of the 17 Europe-based brands, 11 are telecom operators and telecom equipment manufacturers.

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Introduction

The crisis brought about by the outbreak by the Covid-19 has shown the vital role of digital infrastructure to social welfare (health and education) and to functioning of the economy. Digital communications and the telecommunications industry have played a crucial role during the current health pandemic by providing citizens, businesses and governments connectivity services to support the continuity of economic and social activities, despite the challenging circumstances. Limitations to social and commercial activities brought on by the social distancing measures in many European countries have further revealed the role of digital communications as an essential service and heightened the importance of performant and resilient digital networks and services.

The ongoing crisis has already had a profound impact on the European economy and society and, as Governments take steps to ease measures across Europe, economists and experts point to an extended period of economic recession and social disquiet ahead. This risks being particularly acute in the European Union, where the projected fall of GDP is expected to be harsher than in other geographies. **Europe is working on an urgent and extensive recovery plan and digital communications should be at the heart of it.**

While Europeans enjoy some of the best connectivity services in global terms, the changes in traffic volumes and patterns have tested the capacity of both our digital infrastructure and policy framework to adjust to such radical and unexpected circumstances. This paper attempts to provide a snapshot of the impact of the COVID-19 crisis on the digital networks and services in Europe and to provide some suggestions to European policymakers on how to shift gears to enable best-in-class connectivity to become a pillar for economic recovery in the aftermath of the crisis.

European telecom sector is key in the transition from lockdown to restart of the economy. **European institutions and national governments should recognise the critical role of communication infrastructure and digital services** and modernize current policy and regulatory framework accordingly while boosting appropriate funding and developing investment framework to accelerate the digital transformation of the European economy.

[1] The health crisis and the recession: Implications for the telecoms community

The European telecommunication operators' community has reacted to the crisis very swiftly, by adapting to local circumstances, as the spread of the virus has developed/develops with different characteristics and pace across European countries. The telecom sector has played an essential role by keeping people connected and businesses running, supporting public administrations and health-care systems, developing new data based services, assisting local communities and safeguarding employees.

1.1 | Impact of the crisis on telecoms operators

The health crisis, especially in its initial phases, has been a turning point in the use of communications and technology and has had significant implications on how telecommunication companies interact with customers as well as with the sector's stakeholders – including governments and local communities.

The response focused on the following three areas:

- Telecoms operators have worked to ensure continuity of their services in a reliable, stable and secure way and they strengthened network capacity as needed. The episodes of traffic increases reported by our members show up to 50% increase in voice traffic, up to 40% increase in mobile data traffic and up to 70% in fixed data traffic. In addition, operators have ensured resilience of emergency communication services;
- Telecoms operators have mobilised resources to support their customers, public administrations and local communities, including the delivery of free or unlimited services and collaborating with health authorities to support social distancing and monitoring. Also, operators have cooperated from the very beginning with public administrations to support eLearning/eSchooling activities and to improve digital skills;
- Telecoms operators worked to ensure the health and safety of their employees, as well as the integrity of the network, including – but not limited to – responding to a spike in misinformation about 5G and coronavirus.

More details on the 3 areas above is presented in Annex I.

1.2 | Recession: Expected impact on the sectoral outlook

Both the European Commission and the IMF² have recently published their forecasts for global growth, including an unprecedented fall of GDP for the European Union. European telecom companies look at the data from the viewpoint of an investment-intensive sector, facing unprecedented macroeconomic uncertainty.

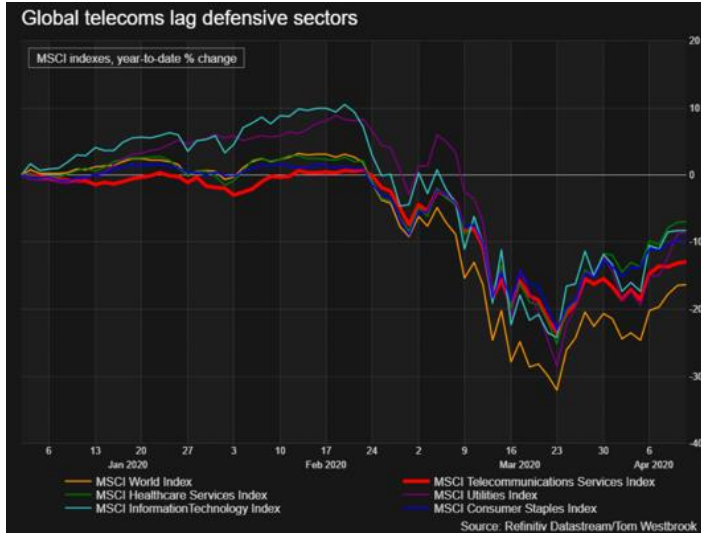
This is of particular relevance also for EU policymakers as well as National Governments. If the economic recovery and aspirations for digital leadership in Europe are expected to rely, among others, on increased connectivity and digitisation, then the financial health of the telecoms sector is directly relevant to both EU digital policies and to the European Commission's recovery plans.

In this context, we believe that the following **telecom-specific facts and trends** should be taken into consideration:

- Unlike other sectors (e.g., utilities or content platforms), the telecoms sector was unable to monetise increases in demand of connectivity (on the contrary, for many users the allowances of data capacity were increased for free, see Annex I). This is due mainly to the current price structures, which increasingly rely on bundles and/or unlimited contracts. On the revenue front, negative impact was felt due to the sharp slowdown of commercial activity (impact of closure of stores), significant reduction of handset sales across the board, decline in roaming revenues and a strong decline on the enterprise market with many SMEs requesting to delay payments or not to pay their bills.
- The expected CapEx is likely to remain high against a scenario in which the crisis is likely to put further pressure on revenues, as an important part of the customer base (e.g., SMEs) risks being put out of business and the purchasing power of the overall customer base is expected to diminish. In some countries, as they might face a public debt or liquidity crises at the local or national level, payments from the public administration also risk being delayed further;

² European Commission, May 2020, https://ec.europa.eu/commission/presscorner/detail/en/ip_20_799;
International Monetary Fund, April 2020,
https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD

- On top of the CapEx/revenue tension described above, we are likely to see a relatively higher pressure on those companies that have accumulated debt, in the context of an investment-intensive sector, where network roll-out happens ahead of demand;
- The collapse of travel has led to a collapse of wholesale roaming (and international retail roaming) revenues.



The above-mentioned issues are likely to have an impact on how the investors and analysts' community perceives the size and pace of investment in the telecoms sector in Europe – a sector already undervalued due to fierce regulation driven competition, constant decrease of revenues (minus 26% in the last decade), competition from unregulated market players, and consistent and expensive network upgrade cycles – as well as on their assessment of current market structures and fragmentation (see above graph for recent stock exchange data).

1.3 | A COVID-19 stress-test for EU policy and regulation

While the COVID-19 crisis has tested the resilience of our digital networks and increased economic pressure on telecoms operators, this exceptional period has also shown the need to re-evaluate the appropriateness and flexibility of our digital policy and regulatory framework.

As our engineers and experts worked on adapting to new circumstances in the crisis, they have encountered some difficulties related to regulation and policy:

- Non-homogeneous digitisation and digital readiness, especially among citizens, employees, SMEs and public sector, across Member States;
- Hesitations and diverging views, especially at the level of data protection authorities, as to privacy provisions, with special regard to the use of network data or contact tracing apps for supporting health authorities;
- Uncertainty and potentially different degrees of flexibility of national regulatory authorities as to the interpretation of Open Internet provisions for coping with changes in traffic patterns;
- Difficulties in getting relevant authorisations or permits at local level to deploy, manage and repair networks as well as issues with fibre roll-out dependant on a complex and currently weakened value chain (SMEs, subcontractors) and delays on 5G deployment linked to uncertainty around spectrum auctions and to the way forward with security and equipment manufacturers.

The above-mentioned list, while non-exhaustive, provides a snapshot of some of the difficulties encountered in the past months.

[2] Building an economic recovery plan with digital at heart

Europe is witnessing a health crisis that cuts across different parts of our economy, society and personal circumstances. While the planned recovery plan at European level will focus on spurring immediate economic growth, its impact should also be felt across the society in the long term through recovered and new jobs, improved public services, a greener economy and social cohesion/ inclusion. ETNO firmly believes that digitalisation in a secure and sustainable way should be at the centre of the European economic recovery plan. Furthermore, we believe that digitisation enables synergies between the objectives of the Recovery Plan and those of the Green Deal: digital transformation of society and economy is the bridge between innovation, productivity and sustainability.

This pandemic has been a dramatic awakening to the need of addressing and accelerating the digital transition process. In order to increase the levels of preparedness for any future crisis and to build a sustainable base for the European economic recovery, we need to focus our common efforts in strengthening the digital communications infrastructure and ecosystem in Europe. This will require **moving from 'business as usual' to an innovative policy framework and ambitious tools that promote investment in digital infrastructures and facilitate deployment of new networks**. Building on the experience and the lessons learnt from the ongoing crisis, it is essential that the EU together with national governments also **take measures to reinforce digital communications ecosystems** – not only to generate long-term demand but also to increase economic and operational resilience for the future. Digitisation is also **enabler for greening the economy** required to prevent a future climate crisis. Finally, the European recovery effort should be considered as an opportunity for Europe to continue to pursue its **ambitions for a global digital leadership and for a future-proof digital policy agenda**. This should be kept as a political priority as indicated in the EU's newly launched digital strategy.

As a significant part of the European recovery plans rely on or can be boosted by widespread roll-out of communications networks and pervasive digitisation, the ability of the telecoms sector to gather the necessary investment on global equity markets is crucial. Reinforcing investment in digital infrastructures is crucial for Europe to develop its own competitive capabilities and autonomy over key elements of the data economy, based on European values and rules, boosting trust and developing skills, supporting key sectors and assets as well as key technologies and innovation to gain global relevance and strengthening its global influence. More specifically, the ability of the telecom sector to maintain and grow both the pace and the extent of the planned investment will be critical to address some of the identified gaps in Europe's digital communications ecosystem:

- Low level of digital transformation of Europe's public administration and of national and local healthcare systems;
- The need to empower a full uptake of digital technology, especially among SMEs;
- Promoting a citizen-centric approach inclusive of the real needs of consumers;
- Digital transformation of Europe's manufacturing, as well as other key sectors such as transport, smart cities and agriculture;
- Persisting digital divide, including rural and peripheral areas;
- Importance of ensuring that new digital networks and services provide a state-of-the art platform for Europe's start-ups and scale-ups.

To this end, we would like to propose a series of consequential policy and regulatory considerations to address the issues highlighted in the above analysis. Many of the policy needs we see in the current

socio-economic context go beyond business as usual and beyond simply updating the current framework, showing that new tools or further guidance are necessary.

2.1 | Promoting investment and reducing cost of deployment

ETNO firmly believes that widespread roll-out of communications networks should be a foundational building block of Europe's recovery plan. Performant and resilient networks will support Europe's economic recovery in the midterm and also provide a basis for environmentally sustainable prosperity and well-being in the long term.

As analysed above, European operators' revenues are under pressure due to the COVID-19 crisis and forward-looking measures to avoid negative regulatory impacts on the sector revenues, promote investment and reduce cost of deployment are urgently needed to stay on track with the EU's ambitious connectivity targets. More generally, a favourable economic and financial framework for investments should be promoted, allowing operators to obtain a fair return on capital employed, both for next generation and legacy assets.

While the European Electronic Communications Code (EECC) provides new provisions with an aim to incentivise investment into digital networks for the foreseeable future, telecoms operators continue to face significant and real challenges in their efforts to invest in and roll out new infrastructure. Below we outline suggested measures to promote investment in digital networks and to bring down the cost of deployment of new networks in the immediate aftermath and beyond the ongoing crisis. These proposed measures should be considered complementary to and in some cases dependent on harmonised and investment-friendly implementation of the EECC.

Bringing down cost of deployment

Facilitating and reducing cost of deployment of new networks is equally important to investment-inducing policy framework and practices. While the provisions of the Broadband Cost Reduction Directive (BCRD) partially address this issue and progress has been made across the EU, further measures are urgently needed in a context of an increasing operational complexity of new network infrastructures. Moreover, cost and speed of deployment still vary greatly between different Member States partially due to heterogeneous implementation and enforcement of the BCRD.

ETNO calls upon the European Commission to further harmonise the BCRD implementation and streamline the BCRD provisions regarding permit granting, both in terms of price and length of procedures, as part of the planned review of the BCRD. The provisions related to fibre-readiness of buildings need to be reinforced in order to facilitate roll-out of fibre-based connectivity solutions. In the light of the technical and operational specificities of 5G, the scope of the definition of the concerned infrastructures for new sites and related owners should be extended, and a new regime introduced to exempt some pre-defined components of the network from the permit process. Rights of way and antenna sites on public ground should ideally become free of charge.

In addition to the opportunities to reduce deployment costs under the BCRD review, it is necessary to review and alleviate the disproportionate pressure on the telecom sector by different taxes and fees, which drain investment resources with a multiplier effect. This type of sector-specific taxes and fees vary from country to country, but can include urban planning fees and taxes to fund public broadcaster and other charges such as universal service fund contributions, costs for legal interception and emergency calls. Reduction of these costs would free financial resources to be dedicated to the

promotion of private investment in the sector and contribute towards timely roll-out of network infrastructure.

Besides the measures outlined above, ETNO encourages the EC to also promote policies adhering to the principle of technology neutrality and supporting technologies that can significantly reduce costs and time to market of 5G as part of its policy and regulatory initiatives, as appropriate. For instance, the vendor-neutral hardware and software-defined Open Radio Access Networks (OpenRAN) technology is poised to help operators drastically cut the costs of building and running mobile networks, while improving competitiveness and security of the 5G supply chain by reducing vendor lock-in. We support a holistic approach to network investment that combine cost reduction with other strategic objectives, such as security.

EU-wide spectrum good practices

Following announcements by several EU governments, the ongoing 5G spectrum auctions will be delayed in some Member States, while others have already started a commercial deployment of 5G. The exceptional circumstances we are facing may necessitate special measures to provide flexibility to the auction timelines and conditions to mitigate the impact of the crisis both on the auction designers and bidders. However, the crisis should not divert attention from the efforts to harmonise spectrum assignment conditions a EU-level and to encourage EU Member States to adopt spectrum assignment conditions that incentivise timely network infrastructure roll-out at a reasonable cost and following a legally robust procedure. The Commission has identified a likely €155 billion investment gap under current investment trends to realize the connectivity targets of the Gigabit Society vision. This figure is equivalent to the expenditures on spectrum through upfront fees (mainly auctions). Annual licence fees paid by telecoms operators in the EU, Norway and Switzerland from 2000 to 2017, exceed €150 billion.

ETNO believes that a public European Commission position, based on spectrum licensing best practices, would support and guide Member States in designing awards that incentivise investment. While RSPG peer review process enables regulators' experts to exchange experiences on awards, it would be necessary to consider views and experiences also from operators' experts. Sharing and developing best practises on licensing approaches that support operators to meet the demands for connectivity and digitalization would facilitate both operators and societies through the crisis.

ETNO proposes the European Commission position to depict best practices on all areas related to spectrum licensing, for example:

- Award design supporting fair market conditions and facilitating efficient spectrum use at reasonable cost.
- Auction payments – possibilities to divide payments in several installments, which do not start before the license is available for use.
- Spectrum usage fees – minimise costs of spectrum use fees for operators to provide financial leeway for 5G investments.
- Coverage and access obligations, including possibilities to support meeting the obligations, e.g. deployments permits, access to electricity, as well as financial support for obligations beyond commercial demands may be tied to auction cost and payments.
- Spectrum bands – accelerate the defragmentation of spectrum bands to support capacity and efficiency.
- Verticals – consider possibilities to meet demands of various verticals efficiently and without fragmenting spectrum resources (e.g. private networks offered by operators, well-functioning secondary market for spectrum).

Competition rules aligned with digital aspirations

Infrastructure sharing is of fundamental importance to ensure a fast roll-out and wide-spread coverage of future networks to create efficiencies for innovation, and to promote more environmentally friendly solutions. A speedy and broad coverage roll-out of investment heavy 5G technology can only be assured if there is more support given to such approach as well as certainty regarding horizontal cooperation on infrastructure projects. Following the example of the EECC, that encourages infrastructure sharing agreements, the EC within the horizontal cooperation framework should fully recognise the pro-competitive aspects of network sharing including cost-savings, reduction of environmental impact, co-investments as well as benefits for consumers – increase in coverage, innovation and high quality and faster networks. The EC should also create more clarity in a new block exemption regulation for joint agreements regarding investment in digital infrastructure, such as telecommunication networks or cloud structures.

Along with the creation of a new block exemption regulation, companies need additional legal certainty when evaluating complex and cost-intensive forms of cooperation, including co-investment. A new quicker way (voluntary and limited in information provided) to ask the EC for further guidance is needed in cases where the self-assessment of the parties does not provide sufficient legal security as to the compliance of the cooperation with Art. 101 conditions and where the cooperation is of a certain magnitude and complexity. These cases would require a rapid response from the EC as any lengthy ex post review may have major consequences. New process empowering the EC to deliver quick guidance could be set up.

Connectivity in market failure areas

Another important aspect that has emerged in the discussions on the impact of the COVID-19 crisis of our economy and society is territorial inclusion. While a majority of Europeans have access to fast or even ultrafast broadband³, some European businesses and citizens reside in either unserved or underserved areas. These areas are often remote, rural and sparsely populated and hence lack a commercial business case for private investment. Public funding or state aid mechanisms are necessary in order to extend fast or ultrafast broadband connectivity to the communities in such market failure areas.

ETNO believes that public aid should be used exclusively where a clear market failure can be demonstrated (primarily in white NGA areas) by taking into account the dynamics of technological innovation, the evolution of private investments and consumers' needs and willingness to pay. Public aid measures should remain complementary to private investments, avoiding investment substitution of private market players and other market distortions. Also, the implementation of new universal service rules for broadband access under the EECC should not crowd-out private network investment.

Given the renewed urgency to make connectivity services available to everyone and the critical stage of the MFF negotiations, we would like to highlight the need to prioritise funding for digitalisation under the Digital Europe Programme and for infrastructure under the Connecting Europe Facility 2 programme (CEF-2) beyond the €3 billion proposed by the EC. CEF-2 has great potential to help expand and reinforce the European connectivity infrastructure especially by prioritising investments in 5G cross-border networks for transportation, terabit connectivity/cloud and submarine cables. The use of cohesion funds to allow for network expansion into rural areas should also be further promoted.

³ EC DESI 2019: Fast broadband (>30 Mbps) covers 83% of homes while ultrafast broadband (>100 Mbps) reaches 60% of homes.

In addition to public funding, different state aid measures such as voucher programmes in support of demand for very high capacity technologies and the review of the EC Broadband State Aid Guidelines (2013) have been raised in the ongoing discussions as an option to mitigate the economic impact of the current crisis.

2.2 | Reinforcing digital communications ecosystem

While a Europe-wide digital communications infrastructure and available connectivity services are a prerequisite to accelerate Europe's digital transformation, readiness of users and of the wider digital ecosystem to consume these services is equally important to create economic and societal value through connectivity. Demand for available connectivity services is a particularly pertinent consideration in Europe, where users benefit from relatively low prices for their broadband connection in global comparison, and operators have limited opportunities to scale due to historically fragmented market structures.

The early lessons from the COVID-19 crisis show that not all users – business, governmental or individual – are fully prepared to operate in a virtual world due to lack of organisational digitization and insufficient skills. This has led, in some cases, to disruptions in continuity of commercial, organisational and personal activities. On the other hand, some countries have witnessed an increase in consumer demand for connectivity services as a result of offline services being unavailable during the crisis, which is a positive signal.

Public health responses to COVID-19 have also highlighted the value of anonymised and aggregated mobile data to follow and predict the spread of the epidemic. Big data is not only a key tool to help authorities protect public interests in times of crisis; data analytics services also assist public and private users in taking informed decisions, optimise costs and resources, and achieve efficient outcomes on a regular basis. Nonetheless, regulatory obstacles and limited incentives have held back operators from fully tapping into these markets.

Below we propose some policy measures to reinforce the digital communications ecosystem, primarily addressing ways to ensure and build sustainable demand for connectivity services in Europe to mitigate the immediate impact of the COVID-19 crisis but also to support the ongoing deployment of new networks and the development of data-driven services that can sustain public and private economic efficiency.

This approach should primarily take into account the needs of business, government and individual customers. The entire ecosystem of infrastructures and applications has a role to play in meeting customer experience demands.

Digitisation of SMEs and public administrations

Drawing some lessons learnt from the ongoing crisis, it is essential that the EU and national governments promote policies that support digitisation of public sector organisations, traditional industries, and small and medium sized businesses (SMEs). This will not only help generate demand for digital communications services in the face of the expected economic slowdown, but also increase economic and operational resilience of these constituencies for the future.

As per EC's recently launched industrial strategy, SMEs account for over 99% of all European firms and represent a significant customer segment to telecoms operators. The COVID-19 crisis has already had a significant economic impact on this sector and financial support schemes are urgently required to

save jobs and to mitigate the impact on other sectors such as telecommunications. In the longer term, an ambitious EU budget and targeted funding programmes for digital technologies across the digital value chain (e.g. SMES, public administrations) will be of utmost importance to achieve the EC's Gigabit Society goals.

Similarly, public sector organisations play a key role as an anchor for demand, as all citizens use public services at national and local level. While the ongoing crisis puts a lot of pressure on public finances, governments should not lose sight of the goal of digital transformation and the economic benefits it will bring in the longer term.

Demand stimulation is rarely considered as a part of national broadband strategies, but the EC's DESI numbers indicate that in many countries the ultimate hindrance to digital transformation is take-up and not coverage⁴. As in previous crisis, promoting demand of new services will help the recovery and also will be needed to avoid digital divide. In order to promote deployment of widespread and performant new networks, the EU's ambitious Gigabit Society targets need to be matched by bold aspirational targets on the demand-side, for public institutions, industrial sectors and SMEs, to accelerate the uptake of services based on the new digital networks.

Consumer focused approach

In some countries, the COVID-19 crisis has been a natural push for digitisation for those individuals who were previously relying on offline services. This is a positive side-effect of a challenging situation and should be turned into an opportunity to further improve digital literacy and media education.

Besides the increased consumer interest in digital services, the COVID-19 crisis has also unfortunately contributed to an increase in misinformation around digital communications and more specifically 5G. The increasing concerns voiced by the civil society, not grounded on any scientific evidence, has brought local authorities in some member states to prohibit the deployment of 5G networks in some member states. While we must not ignore that there are concerns as to the possible health implications of Electromagnetic Fields (EMF) with the ongoing roll-out across EU regions, we need public authorities to enforce an effective response to the completely unfounded information about the relation between 5G and spreading of the COVID-19 virus. If we want a true EU market for 5G, further efforts towards an effective harmonization of EMF limits at Member States level should be ensured and supported by EU institutions.

ETNO unequivocally supports the planned launch of a comprehensive Digital Education Action Plan as announced in the EC's Communication on Shaping Europe's Digital Future. It is important that such a digital education plan includes both digital skills and media literacy aspects given the concerning situation regarding misinformation on 5G. While we acknowledge and appreciate the recent efforts by the EC to tackle the increasing public anxiety around EMF and 5G misinformation related to COVID-19, we would like to suggest a clear statement to all Member States emphasizing that the EU has a prudent policy in place on EMF safeguards and that 5G is a strategic EU priority. As long as the international EMF norms are respected by operators, ungrounded EMF concerns cannot be a reason to delay 5G rollout in any Member State.

⁴ EC DESI 2019: 41% of homes have a subscription to fast broadband (>30 Mbps) and only 20% of homes subscribe to ultrafast broadband. This is clearly below the levels of available broadband services.

Paving the way for digital leaders across European industry

While encouraging the general uptake of digital communications services is a key element of a sustainable digital communications ecosystem, rolling out VHC and 5G networks will also require substantial increase in digital readiness and demand from different European industrial sectors. The crisis has raised some concerns about the potential delays in the roll-out of new fixed and mobile networks in Europe. ETNO member remain committed to continued progress with the deployment of new networks as strong digital foundations will support the economic recovery.

The industrial demand will largely be driven by the adoption of new technologies such as industrial Internet of Things (IoT) and artificial intelligence (AI), which are instrumental in creating next generation connectivity solutions and use cases and for enabling a green economy. Different industrial actors should be involved in 5G projects from an early stage in order to develop the right business models for relevant use cases, allowing the uptake of 5G and development of relevant ecosystems. To this end, ETNO members are carrying out numerous trials of 5G use cases with different industry verticals across Europe to trial technological solutions and business models.

The update of the EC 5G Action Plan should be considered as an opportunity to address the full digital ecosystem around the new virtualised connectivity platform relying on world-class mobile and fixed communications infrastructure. As mentioned above, the EU needs to move beyond ambitious supply-side targets and to consider policy actions to support the full connectivity ecosystem. However, the choice of business models, technologies and commercial arrangements should be left to the markets to decide. The digital communications ecosystem will only increase in economic importance in the coming years, and the EC should also consider how to support the evolution of the European telecommunications industry in the framework of its new industrial strategy with an aim to boost Europe's competitiveness.

Finally, a successful digital communications ecosystem and related policy framework rest on resilience and security. As 5G brings more openness and participation to the connectivity infrastructure, network security should also increasingly become a shared responsibility of all actors involved. In addition to supporting the already-mentioned OpenRAN technology via future initiatives that promote open standards and interfaces in 5G, the EC should swiftly implement tailored EU certification schemes and review the NIS Directive to enhance responsibilities and accountability for network security across the ecosystem, including for software and hardware providers.

Innovation in data-driven services

The COVID-19 crisis has brought to light the importance of big data in guiding public policy decisions. In normal circumstances other than tackling serious emergency challenges, the use of anonymised and aggregated mobility data can produce useful insights for instance for city transport and mobility planners. Data exchange solutions are also a great boost to businesses and are particularly significant for SMEs to scale while containing costs.

Both business-to-government and business-to-business data sharing are generally based on contractual agreements that make the exchange mutually beneficial. Since operators normally collect and process location data as a by-product and its sharing comes with considerable additional investments (e.g., anonymisation, aggregation, and secure transmission in compliance with EU privacy and data protection law), economic incentives are crucial to encourage such investment.

In its Data Strategy, the EC committed to addressing the incentives for commercial B2G and B2B sharing solutions to flourish. While data exchange should remain based on voluntary agreements, we

consider that both would benefit from better standardisation of contractual provisions (e.g. contract model clauses) and standardisation or interoperability of given data formats, which would give more certainty to all the parties in data-sharing markets. With regards to B2G sharing, fair compensation frameworks for the exchange of data in the public interest would promote the emergence of sustainable market-based tools that can also be promptly used to face emergency situations, and avoid scrambling to resort to *ad hoc* solutions. Crating regulatory sandboxes and increasing the availability of government open data would also nurture European digital solutions.

Operators' data analytics and data exchange offerings all comply with strict data protection requirements set out both by the GDPR and the ePrivacy Directive. This sector-specific framework limits the emergence of cost-efficient, scalable metadata analytics solutions. The ongoing review of the ePrivacy Directive would perpetuate the discrepancies between the rules that govern the processing of metadata and the GDPR general framework. ETNO recommends that the EC revise its proposed regulation to achieve a closer alignment with the GDPR's risk-based approach, while still ensuring a strong protection of the confidentiality principle⁵. Together with clear conditions for data sharing, strong, yet enabling privacy safeguards would enable innovative telecom analytics services for private and public partners.

3 | Conclusions

The European recovery effort should be considered as an opportunity to build on the lessons learnt during the COVID-19 crisis and for Europe to continue to pursue its ambitions for a global digital leadership. The ongoing crisis and the predicted economic slowdown will have an impact on market confidence and the investor community, and the role of the public sector will be key to frame a future-proof digital policy agenda which will create the needed economic stimulus in support of recovery.

In addition to specific programmes aimed at the recovery efforts, the EU together with the national governments must continue to press on with the EU's digital strategy and Green Deal as laid out by the EC earlier this year. Innovation on how make the digital communications infrastructure more secure and environmentally sustainable opens new business opportunities for European industries within the Digital Single Market. While the current crisis risks challenging appetite for short-term private investment in innovation and new technologies, we should not lose sight of the long-term perspective.

⁵ See ETNO-GSMA-Cable Europe joint industry note on the draft ePrivacy Regulation (January 2020).

§ | Annex 1

Here below, we elaborate on the three areas in which the telecoms community had to adapt to changed circumstances.

First, telcos have mobilized resources to support local communities, in at least 6 main areas:

- Provide extended, unlimited or free data, call and/or entertainment packages to their customers. These measures are meant to facilitate remote communications between individuals as well as provide moral support for people in lockdown (e.g., unlimited IPTV, premium content, ...). Measures in this field must be benchmarked against existing tariff plans, which may vary from market to market;
- Support businesses (small and big) in their use of remote working tools including cloud, teleconference and videoconference – this includes, for example, free trials for home working solutions, upgrading capacity and increasing VPN connectivity;
- Explore the use of network data for use by public authorities in tracking the movement of people during outbreaks in compliance with EU data protection and privacy rules;
- Support distance learning and e-learning by leveraging existing telecom initiatives and/or by activating dedicated helpdesks for schools and activate tools to contribute to the increase of digital skills putting in place targeted cooperation with education authorities;
- Activate instant phone and online fundraising campaigns for hospitals;
- In countries in which it is still allowed to do so, and with the relevant hygiene measures, provide physical services continuity through reduced opening times in the operators' shops;
- Closely collaborate with public authorities to secure emergency and critical communications.

Second, telcos are ensuring the continuity of their services, despite the impact of the COVID situation, which can be summarized as follows.

As regards **networks**, telcos focussed on keeping fixed and mobile networks running smoothly, including by taking the necessary and compliant traffic management measures and taking swift action to protect and repair networks whenever necessary. The following must be noted:

- Across countries, we observed a change in data and voice traffic patterns; where necessary, swift interventions by operators avoided any major disruptions to regular network operations;
- In countries where a lockdown has been implemented, we observed changes of behaviour in terms of data and voice traffic, related to work-from-home, distance-learning practices and online entertainment. Such change might lead to a different distribution of traffic peaks, in terms of both time of the day and/or geographical areas, which required traffic management;
- Traffic management remains a crucial tool to ensure smooth network operations, especially at times of crisis;
- Public services (especially healthcare, army, public forces and similar) have been prioritised in some countries in terms of support, maintenance and service;
- A spike in misinformation related to 5G and COVID-19 is allegedly linked to over 80 arson attacks against telecom masts, across 8 EU countries (ETNO-GSMA, April 2020). This required urgent interventions from the maintenance and crisis teams.

Third, telcos took action to safeguard telecom employees, as their health and safety is a top priority, which goes hand in hand with ensuring business continuity. The following must be noted:

- Most employees have been granted with the work-from-home capacity from the beginning of the emergence. On-field technicians have been granted with specific safeguards to avoid any risk when working



- ETNO companies took swift measures in order to reduce the risk for employees including: travel bans; online migration of physical meetings; work-from-home (especially for employees returning from travel); additional hygiene measures in headquarters/offices/shops/call centres and for maintenance personnel; protocols to deal with suspected COVID cases; temporary isolation rooms, etc;
- Operators continued to ensure maintenance/repairation of the current network, in line with business continuity practices, but they might have suspended all unnecessary installations and interventions. The focus is on keeping the network working;
- The above-mentioned spike in misinformation on 5G and COVID-19 has also been linked to both verbal and physical attacks against telecom employees and telecom engineers in some European countries (ETNO-GSMA, April 2020).

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About ETNO

ETNO is the European Telecommunications Network Operators' Association. We proudly represent Europe's main telecom operators, who innovate and invest in the continent's digital backbone. Our companies are the providers of Europe's most advanced digital networks and services. ETNO's mission is to develop a positive policy and regulatory environment empowering the delivery of world-class services for European citizens and businesses.

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