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Sustainable Connectivity Future: A New Era for Infrastructure, Investment and Competition

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Digital transformation and broadband connectivity are generally accepted as the 'de facto' key for economic development and growth. The availability of broadband internet access service is today a crucial enabler for participation in the digital economy and society.

In this direction, and specifically as regards connectivity, according to the **European Declaration on Digital Rights and Principles** *"everyone, everywhere in the EU, should have access to affordable and high-speed digital connectivity."*

European Union has defined in the **Digital Decade Policy Program** two very ambitious objectives with regards to the development of connectivity infrastructure towards 2030: *"all end users at a fixed location should be covered by a gigabit network up to the network termination point, and all populated areas should be covered by next-generation wireless high-speed networks with performance at least equivalent to that of 5G, in accordance with the principle of technological neutrality;".*

According to available data European Union has still way to go to achieve connectivity objectives of 2030 and lags behind other regions in the world such as South Korea, China, USA, Japan, UAE, Singapore, Brazil as regards supply/deployment and demand/penetration of high-quality connectivity infrastructure and services (FTTH and 5G).

The deployment of digital infrastructure is capital intensive and requires huge investments. Those expected to invest also rightly expect to have reasonable returns for their investments. On the other hand, we need to keep prices competitive, especially in economic environments of high inflation, to fuel and support uptake. This is a tough exercise to solve that historically has been approached with the creation of economies of scale.

Policy and regulatory actions are required to encourage investments, to reduce infrastructure deployment costs but at the same time address the demand side to make networks financially viable in the long term and accessible to consumers (thus competitively priced).

From a Regulators point of view, in principle the most important driver in a market is competition as it creates incentives for innovation, investment in infrastructure and better services to consumers.

The **European Electronic Communications Code (EECC),** back in 2018, has included among policy objectives efficient investment & competition:

- Investment particularly targeted to infrastructure in VHCNs still complemented by regulation, where necessary and
- Infrastructure-based competition with the rationale that bottlenecks and barriers to entry remain at the infrastructure level. On that respect several new (at that point) provisions of the Code pointed at the direction of incentivizing investment in VHCNs, through lighter regulation, meaning commitments on co-investments in VHCNs.

Promoting the interests of the citizens of the Union, by ensuring connectivity and the widespread availability and take-up of VHCNs, inter alia by enabling maximum benefits in terms of choice, price and quality on the basis of effective competition is a key objective of the EECC as well.

Market and technological trends are not only changing the way we communicate by means of new services, but also adding complexity to the internet ecosystem through the entry of new players, the changing roles of traditional players, the rise of new competition bottlenecks and the removal of others. New challenges related to ensuring end-users' rights in such new context emerge and the regulatory focus is expanding to actively contribute to achieving sustainability goals. This evolution requires a holistic perspective for electronic communications' regulation, also as regards the increasing interplay with the digital legislation.

The role of electronic communication networks and services regulation is fundamental for EU digital competitiveness. Increasing the competitiveness of Europe's economy, ensuring a regulatory level playing field in the electronic communications sector and decreasing the regulatory burden for companies are key objectives in this direction.

The European Commission published the **White Paper "How to master Europe's digital infrastructure needs?"** earlier this year in February. The White Paper presents a number of ideas and acts as a platform setting the basis to discuss and address the digital infrastructure deployment challenges discussed above and to explore the interplay between investment and competition.

The White Paper is organized around three pillars:

1. Development of cutting-edge technology – i.e. innovation. Pillar I discusses the creation of an innovation ecosystem (including investments and capacity building).
2. Establishment of an appropriate Regulatory Framework (Pillar II). Emphasis is given to regulatory framework harmonization across the EU when it comes to market entry, security/resilience, access regulation in a fiber environment and spectrum management as a solution to create scale and address investment challenges for the deployment of digital infrastructure.
3. Addressing the overriding issues of (cyber)security and resilience. Pillar III focuses on secure and resilient digital infrastructures and the need to protect the value of the massive investments required to build them.

Let me share a few thoughts on some key points discussed in the White Paper:

Scope of the regulatory framework

Given the fact that new players have started providing electronic communication networks and services the evaluation of the scope of the regulatory framework in order to ensure that, given the technical and market developments remains relevant is necessary. Any changes in the regulatory framework in this direction should be carefully evaluated.

General Authorization

The White Paper proposes authorisation framework based on the Country-of-Origin principle for core networks and harmonization of authorisation conditions (and national security-related obligations) across Member States, to allow operators to integrate network functionalities in the cloud and progressively reach a pan-European scale. A large number of diverging conditions in different Member states could lead to significant administrative overheads in case of an operator present in different Member States. Detailed analysis of the expected benefits and challenges of these proposals is necessary.

Radio Spectrum

Spectrum prices affect Capex and play an important role as regards the speed of networks deployment. Forward looking investment friendly spectrum assignment procedures auctions should become our priority.

EU level planning of sufficient spectrum for future use cases and coordination of auction timing are both important because planning for future needs and providing information on the availability of spectrum adds to predictability for the market.

It is also important that authorization processes are as short as possible to avoid negative effects for the economy and the citizens of the Member States. Available data indicate that earlier spectrum awards lead (e.g. in the case of 5G) to better networks coverage.

Copper switch-off

Copper switch-off can play an important role towards both

1. the EU Digital Decade Policy Programme connectivity objectives by making sure that legacy infrastructure will not compete with FTTH/FTTP and will not jeopardize relevant investments and
2. the EU environmental targets by improving the energy efficiency of the networks.

Copper switch-off, may also benefit retail competition and improve QoS for the benefit of end-users.

We need simple and transparent procedures for copper switch off to achieve the above objectives. The White Paper proposes a copper switch-off for 80% of the subscribers in the EU by 2028 and the remaining 20% by 2030 as appropriate milestones which is in line with Gigabit Recommendation.

However, as also mentioned in the Gigabit Recommendation, an appropriate alternative product of at least comparable quality providing access to the upgraded network infrastructure should be made available to access seekers in case of copper switch off.

Access regulation and remedies

The White Paper proposes a change to access policy relating to fiber networks proposing a European wholesale access product, no recommended markets susceptible to ex ante regulation, thus, promoting and incentivizing investments and reduction of regulatory burden.

The pan-European wholesale access remedy aims at creating a level playing field at EU Level, ensuring predictability for access seekers and facilitating the provision of services at EU level. The expected benefits of this approach should be analyzed in detail.

Ex-ante regulation might be still needed at least in some parts of the Member States, depending on the national specificities to remedy the market failures that cannot be addressed by competition law alone.

Universal service and affordability

Universal service provision or specific public social policies targeted at consumers with low income or with special social needs have proved to be an important measure to avoid or bridge the digital divide and the resulting social and economic exclusion.

The White Paper also discusses the financing of the Universal Service Offers and the potential contributions from NIICS which are not excluded in that respect by the EECC.

Sustainability

The White Paper discusses environmental sustainability and the interdependencies between the climate and digital transitions. It is the twin – digital and green – transition that becomes our objective. Environmental transparency, the need to strengthen the role of NRAs in relation to sustainability, and the ambition for environmental accountability of all players of the internet ecosystem are all key issues in this direction.

When considering new regulatory proposals, we need to emphasize that any legislative intervention in the field of digital infrastructures and services of the internet ecosystem must be consistent with the **Open Internet principle.**

However, we need to remove a misconception at this point. All Internet-traffic-carrying-networks should and will be open/neutral. But not all open/neutral Internet-traffic-carrying networks will be 'Best Effort' in the future. New Qualities of Service need to become available in order to deliver the future services. New applications will need Software Defined Networks and a 'Network Slicing' kind of services. Services that can tolerate Best Effort can continue using it. But room for Quality of Services that go beyond that, has to be made.

I would like to conclude this speech by considering the word "sustainable" next to the word "future" as regards connectivity. This, I believe, holds the key that unlocks most of the problems and challenges discussed earlier so I would like to better define the word "sustainable" in this context.

By sustainable I mean:

- Environmentally sustainable - delivering lower energy consumption per bit transmitted
- Financially sustainable - especially with regards to day-to-day operations and maintenance
- But also, Socio-economically sustainable. To the benefit of the societies and the economies in equal terms to the Businesses. Sustainable by making our cities smarter and safer, together with enabling small businesses to innovate and large businesses becoming more efficient.

Telecommunications need to stop being treated as a consumption only 'game' but a potentially value and revenue generating opportunity, for the majority of its users. That will make it sustainable. That will make our digital infrastructure to be build worthy of the adjective 'Future'.