ETNO and GSMA input for the Call for Evidence on virtual worlds (metaverses): a head start towards the next technological transition

ETNO and GSMA welcome the opportunity to provide input to the European Commission's Call for Evidence on virtual worlds and the technologies driving the transformation towards the next technological transition. As the boundaries between physical and virtual realities are increasingly to become blurry, enabling more intuitive and immersive experiences, it will be necessary to come up with a clear and concrete regulatory framework, which encourages openness and competition and gives market players important investment securities. This is particularly true since this change is expected to impact citizens, industries and governments alike in many different ways , ranging from connectivity infrastructure to virtual-worlds enabling technologies to cross-cutting issues such as sustainability, privacy, people's rights and global competitiveness.

We agree with the Commission's decision to opt for a non-legislative instrument (EC Recommendation). In our view, it is too early in the technology development cycle to set [or 'define'] binding rules for virtual worlds. Much is still unknown about the way this technology will function, how the market will develop, and what risks may or may not emerge in this context. Member States are also some way off introducing national regulatory frameworks for virtual worlds, so the risk of fragmentation to the single market is not yet evident.

Regarding **electronic communication networks (ECNs)**, virtual worlds will certainly require additional technical capabilities in order to meet the high service quality requirements of continuity, latency, ubiquity and predictability that immersive realities promise and need to provide. Moreover, it will also be necessary for operatorsto immensely increase their networks' capacity to cope with the huge amount of data traffic associated with virtual and mixed realities. In fact, a recent study by A.D. Little[1] indicated that virtual worlds will require 10 times higher throughputs than available today (i.e., speeds of at least a few 100 Mbps), as well as low latency, to deliver a good user experience. Another study prepared by Credit Suisse goes even further, stating that "based on modest metaverse assumptions, data usage could easily expand more than 20x during this decade."[2]. It will therefore be crucial for policymakers to create the right market conditions for competitive and sustainable deployment of the entire ecosystem.

The flexibility required for this will mean that networks generally need to become more interoperable and evolve to platforms and market places for Digital Network services allowing them to sell Network-as-a-Service through common network Application Programming Interfaces (APIs) such as the GSMA Open Gateway. In doing so, developers, solution providers and enterprise customers will be able to access ECNs in an industry-wide standardized way. The standardisation unleashed by Open Gateway

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[1] A.D. Little report: Evolution of data growth in Europe, Evaluating the underlying trends that are continuing to fuel high growth in mobile and fixed data consumption in European markets, 2023
[2] https://www.credit-suisse.com/media/assets/corporate/docs/about-us/media/media-release/2022/03/metaverse-14032022.pdf

will also foster cooperation among telecom operators to the benefit of European consumers and enable them to fully exploit innovative potentials. This will allow telcos to develop new telecom services with improved performance parameters giving way to a new generation of services in a virtuous circle,, including metaverse-like applications and the transformation of business processes.

In order to achieve this evolution of networks, telecom operators will need to increase their **investment efforts** in a number of crucial areas. Based on a study by BCG and ETNO in 2021, the most significant investment will be required to achieve the comprehensive and EU-wide roll-out of fixed and mobile connectivity infrastructures capable of gigabit speeds. Network operators will need to spend €300 billion to reach this goal alone in the years to come[3]. Adding to this, there will be a further need to invest in breakthrough technologies, such as, Open RAN, edge computing, network virtualisation and automation, and cybersecurity in order to facilitate the virtual worlds supported by the European Commission. In light of growing market pressures resulting from mounting competition, all the while decreasing retail prices and revenues, European telcos will be faced with immense financial difficulties to meet the technological foundation necessary for the virtual world ecosystem.

That said, investments in networks for the virtual-worlds must also be sustainable. The development of new capabilities will be based on a trial-and-error basis as no one knows which of the innovations will succeed. Therefore, the regulatory environment should be supportive and allow new business models for infrastructure use to be tested and developed. Only by doing so, will we be able to harness the opportunities stemming from these technological advances, i.e. the development of new business models in collaboration with developers to facilitate access to network capabilities via APIs and the enhancement of connectivity performance through Open Gateway thus enabling high demanding services like metaverses.

From a **consumer perspective**, it remains uncertain at this stage what impact the virtual worlds will have as it is still largely undefined and heavily influenced by the entertainment industry. However, early use cases that are expected to evolve into the virtual worlds include video calling, online multiplayer video games, online media streaming, online commerce, learning and telemedicine and augmented reality (AR) overlays. It is expected that capabilities such as being able to move seamlessly between virtual works with friends and digital assets in real time will be sought after. In order for competition to emerge, portability of digital experiences and assets between virtual worlds and interoperability will be key requirements. Consumer protection elements such as clear rules on data privacy and data protection, end-user facing rules on AI/ML, rules around financial transactions and general end-user information will remain to be important requirements for providers to meet towards consumers. Also, children's participation in virtual worlds may present specific challenges in order to ensure safe spaces for children and teens.

The EU already has a strong **regulatory framework** to address potential impacts that virtual worlds may have on aspects such as competition, cybersecurity, artistic creation and privacy. In bringing forward future policy interventions in this area, we request the Commission to be mindful of the need

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[3] BCG/ETNO report: Connectivity & beyond: how telcos can accelerate a digital future for all, March 2021

for consistency with existing EU legislative instruments such as GDPR, Digital Services Act and Digital Markets Act.

Additionally, to enable the virtual worlds of tomorrow, a healthy telecom market is a prerequisite for the needed investments to meet the ambitious Digital Decade targets. This is especially true, as current evidence suggests that European fixed Gigabit coverage is expected to reach 90% in 2030,and will therefore risk falling short of the EU Digital target on 'gigabit for everyone'. An assumption based on continuously high investments from network operators and on protecting crucial deployment incentives. Policy and regulatory initiatives from the European Commission aiming at fostering Gigabit connectivity, such as The Gigabit infrastructure Act, are crucial and should be promoted and considered in this context.

Finally, we note that the Commission is planning to complement this initiative on virtual worlds with parallel work on a performant and resilient infrastructure for connectivity. While we strongly welcome that the Commission is looking at the topic from a holistic perspective, complementing this initiative through a wider consultation on the future of connectivity, we do believe that the role of connectivity must also feature prominently in the initiative on virtual worlds itself as well as potential implementing measures. ETNO and GSMA stand ready to contribute to this joint-objective and provide its views on the ongoing initiative.

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