ITI Promoting Innovation Worldwide

ITI Response to the BEREC Draft Report on Cloud and Edge Computing Services

On behalf of the global information technology sector, the Information Technology Industry Council ("**ITI**"), thanks the Body of European Regulators for Electronic Communications (BEREC) for the opportunity to provide our comments and inputs on the draft report on Cloud and Edge Computing Services.

The Information Technology Industry Council (ITI) is the premier global advocate and thought leader for the information and communications technology industry. ITI's membership comprises leading technology and innovation companies from all corners of the tech sector, including software, digital services, and internet companies. They are headquartered across Asia, the United States, and Europe, and many are significant investors and employers in the European Union.

ITI membership welcomes the collaboration with BEREC and aims for a continued evidence-based work, for this reason ITI appreciates BEREC's willingness to accept comments to the report on Cloud and Edge computing services.

Software-Defined Networking (SDN) and Network Functions Virtualization (NFV) are distinct from telecommunication services as they operate on different layers

The report states (*Chapter 7, page 49*) that the network cloudification could have an impact on the update of the regulatory framework as Software-Defined Networking (SDN) and Network Functions Virtualization (NFV) are more mature than when BEREC had the last regulatory framework review, there is more clarity on the interactions among the players of the value chain and the telecommunication sector is going to experience a technology shift towards cloud-based models. BEREC correctly identifies the benefits of virtualization and cloud-native architectures and the opportunities it brings for telecom operators to lower costs and increase flexibility. However, we believe that "convergence" is a misleading justification for regulating cloud services and edge computing similarly to the very different telecom networks.

While it may be true that telecommunications service providers (TSPs) are gradually making use of cloud-based services including SDN and virtualization, there has not been a convergence of the relevant **underlying technologies**, which remain distinct and should be regulated distinctly. Cloud computing services are fundamentally horizontal in nature, providing generic, reusable building blocks that can be accessed through Application Programing Interfaces (API). These cloud-based capabilities generally are not tailored specifically for any one industry vertical, but rather serve as flexible, cross-cutting resources that organizations in diverse sectors can leverage and combine to meet their unique needs. In that regard, the adoption of cloud services by TSPs is no different from cloud adoption in any other economic sector.

However, even if some cloud or edge-based computing services are engineered to provide some functions traditionally provided by telecommunications providers, the fact remains that such services are not and should not be viewed as 1:1 "replacement options" for the underlying core telecommunications network infrastructure, particularly the last-mile, that will always be necessary for complementary innovations such as cloud or edge-based computing services to function.

The shift towards network virtualization has enable the separation of hardware and software components, yielding significant benefits for TSPs. This includes releasing capital and human resources, allowing for greater investment in access networks and enhancing service for users. Moreover, it has also resulted in a more diverse, secure, and resilient supply chain. This is because the barrier to entry for new vendors is lower in a software-driven environment, compared to a tightly integrated hardware-software ecosystem. The disaggregation of these components allows for greater flexibility, competition, and innovation across the technology supply chain. Consequently, investments in network innovation and coverage should be viewed as complementary endeavors rather than alternatives. In other words, the existing regulatory regime should remain intact for the purposes of regulating the core telecommunications services which are its focus and should not be extended to regulating distinct underlying technologies just because they help extend network functionality or services.

While we also appreciate the focus on technology neutrality (*page 51*), cloud and edge computing cannot and should not be considered as substitutes for TSPs as they lack the same infrastructure rights and benefits, and are, therefore, subject to different regulatory considerations. For example, compared to telecommunications, these services raise vastly different competition and consumer protection concerns. The Draft Report operates on the assumption that digital services such as SDN and Virtualization are largely similar to and indistinct from telecom services (and therefore should be regulated similarly with telecom services). In fact, these services are in addition to, and not in derogation or substitution of, traditional telecommunications services. While adoption of SDN and Virtualization is increasing, it is still in an early phase and does by no means imply product market substitution, and certainly not complete substitution for traditional networks. The requirement for traditional fixed and mobile infrastructure services remains distinct.

To further clarify, cloud and edge computing, even if assisting with SDN or Virtualization, remain distinct from traditional telecommunication services as they operate on the **application layer, as opposed to the network layer**. The technical, functional, and market-based distinctions between TSPs and Application Layer Services must be recognized. Traditional telecommunication services provide crucial telecommunication infrastructure while application layer service providers offer applications over telecommunications infrastructure. This distinction has long been acknowledged by BEREC and should be maintained. While there is some overlap in services, application layer services, like cloud and edge computing, perform functions not related to telecom in other market sectors and it is not appropriate to regulate these technologies as such.

Furthermore, without access to telecommunications infrastructure, application layer services cannot reach end-users. Cloud computing providers depend on TSPs to reach customers and for those customers to engage with their end-users, due to TSPs' control over the last-mile connectivity. This

asymmetric dependency, and the regulatory response to such a market structure, has led to the properly functioning telecommunications regulatory regime of today.

Telecom law should regulate the hard infrastructure or 'carriage' layer, and not the software layers above. Trying to regulate cloud via sectoral policies like telecommunications obviously carries a risk of regulatory overlaps and inconsistencies. Cloud services are, however, used by a great variety of sectors beyond electronic communications and should therefore be regulated horizontally, not vertically via sectoral legislation. We note that this applies to all application layer services such as OTT communication and video services, cloud computing, edge computing, machine-to-machine communication, artificial intelligence systems, IoT, and AR/VR communication and applications. To safeguard the future of data innovation, telecoms and application layer services, like cloud and edge computing, must be addressed from their respective starting points. As the basis of enabling innovation, international competition and deeper penetration and adoption of the internet in the EU, it is paramount that the **time-tested distinction between infrastructure services such as broadband and spectrum controlling entities and application layer companies be maintained in practice and in law.** Additionally, the operation of private communications infrastructure by businesses for their own purposes is not new and common among businesses in all sectors and request that BEREC clarify that further consideration of such private infrastructure is not required.

The regulatory approaches to "converged" technologies should not evolve based on the service or use-case being offered by the service provider. To reiterate, though we agree with the principle of technology neutrality in regulations as emphasized by BEREC - *One of the overarching principles of the EU Regulatory Framework is technology neutrality. This principle entails that regulation shall be agnostic of the underlying technology used to provide the services so that providers can be free to select the use of the technology that they deem most appropriate and this regulation can remain sufficiently stable despite of the technical and technological changes that may take place in the highly dynamic digital markets* – in this case, for the reasons described above, it is crucial to take into account technological distinctions between different classes of technologies while framing regulations and keep regulatory approaches focused on the underlying technologies being employed/implemented. In other words, just because BEREC can and should continue to take a technology neutral approach to regulating telecommunications networks and infrastructure (a principle we support) does not mean it should apply that same principle with respect to different underlying technologies (such as cloud-based or edge-based computing services) that happen to extend network functionality. Rather, each of these classes of technologies should be regulated in a technologically neutral manner. Taking this approach is important in order to avoid a situation wherein entities offering such technologies are subject to excessive, broad-brush regulations. And result in hampering innovation-led commercial growth and consumers' ability to access such services across diverse platforms.

Same service, same rules as a misleading assumption

From our perspective, although the IT and cloud and edge computing services are growing around the globe and some network functions could be shifted from specialized hardware to server

hardware, not all functions suit this shift, therefore it is not appropriate to talk about cloudification of networks as the funding basis of or the assumption of convergence between the cloud sector and the telecommunication sector, which remain still two separated dimensions as we have described. We should rather recognize a vast process of digitalization that is affecting several industries and of which companies are taking advantage to reach certain goals.

Therefore, the 'same service, same rules' narrative is misleading as these services' infrastructure and delivery methods are fundamentally different. Many innovators operate in the application layer and could be burdened with unnecessary regulations if this process of digitalization of networks is approached from a 'same service, same rules' perspective. Excessive regulation on the application layer would not facilitate reaching the Digital Decade's targets, it would rather stifle technological innovation and be counterproductive. Therefore, the digitalization of networks should be seen as complementarity not increased substitutability.

Indeed, the telecom sector is also considering digitalization as a necessary step for providing modern and competitive communication services. BEREC correctly recognises that the "the complementary nature between cloud and connectivity is generally fostering the cooperation between ECN/S and cloud providers, driven by the mutual supply of services and commercial partnerships". As it should be recognized that there exists a '*symbiotic relationship*' between telecom and technology companies. Connectivity between cloud providers and users relies on an ECN/s provider, operating either via the Open Internet or through private network connections. In this context, cloud providers and ECN/S operators collaborate to ensure a high-quality experience for their shared customers, often through interconnection agreements, including Internet peering or private interconnect arrangements. Connections between data centers of cloud providers often entail the involvement of an ECN/S provider, even when cloud providers ostensibly handle connectivity internally. This can include partnerships with ECN/S operators for laying submarine cables, joint terrestrial fiber deployments, or cloud providers procuring capacity directly from ECN/S providers.

Legislative pressure on the application layer

We believe that the concept of convergence and its application can create several adverse unintended consequences, such as different layers of legislative complexity, impact on competitiveness, and fragmentation. Therefore, we do not agree with describing any application layer service as "converged" with an infrastructure service, especially from a regulatory lens. This is all the truer as the software layers are very diverse in nature[1] and are already regulated by other instruments, as is confirmed by BEREC itself. Adding another layer of legislation that overlaps with telecommunications could cause a trickle-down effect that will generate an overregulated business ecosystem, make the cost of application layer services rise and ultimately impact consumers. As it specifically relates to cloud providers, such an approach would have the negative effect of slowing

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[1] This diversity is very well illustrated here: Interoperability, switchability and portability: Implications for the Cloud: WIK - Wissenschaftliches Institut für Infrastruktur und Kommunikationsdienste GmbH.

cloud adoption by European businesses, to the detriment of their productivity, competitiveness, and opportunities for cost savings.

Application layer platforms are already subject to a variety of legislative initiatives. Including various provisions which have been applied recently or are going to be applied soon, thus creating the need to understand how these regulations will interact and function in practice. Namely, we refer to a set of legislations that regulate cloud service providers from different perspectives, for instance (i) regarding their obligations towards data subjects and towards controllers when they are acting in a B2B capacity (GDPR), (ii) the Unfair Commercial Practice Directive or the Product Liability Directive, (iii) regarding interoperability and switching provisions through the Data Act, (iv) regarding security through NIS2, EUCS and the Cyber Resilience Act ,(v) the AI Act when they deploy AI systems or (vi) regarding their obligations towards the consumers through to the Digital Services Act. Furthermore, the Digital Markets Act and Data Act are very new pieces of legislation; therefore, it may be wise to assess how these apply to the cloud services market prior to further regulatory intervention. We recommend that the list of legal instruments compiled in section 3.2 of the report should include all regulatory mechanisms listed here, and especially the NIS2 Directive.

Sectoral regulators will likely have to find effective means and methods (within existing regulatory frameworks or through amendments, wherever necessary) to deal with the challenge of regulating new and emerging technologies. BEREC appropriately acknowledges the intricacies involved in the interaction among various new EU regulations, emphasizing the need for meticulous consideration to ensure their effective implementation and legal clarity, while also preventing the imposition of unnecessary bureaucracy on users and providers. In this respect, we believe that instead of bringing in a completely new structure by way of an overarching converged legislation, the primary focus should be on ensuring that such regulators have the relevant tools to regulate these new and emerging technologies independently on a case-to-case basis.

Moreover, as stated in the report, ECN operators own the last mile network infrastructure and hold a gatekeeping position in controlling or managing the delivery of network services to end users. Therefore, it would be inaccurate to affirm that cloud providers hold a dominant position, as the ultimate ability to intervene and influence the quality and the prices of telecommunications services for customers lies with ECNs (*page 52-53*).

Conclusion

While we appreciate BEREC's acknowledgement that the regulatory framework should be kept updated to changing times and the digital transition, we believe that this should not be linked to the expansion of the telecommunication regulation to digital solutions providers such as cloud and edge computing service providers. Indeed, as mentioned in the report itself (page 61) from BEREC's perspective it is important to review the process of digitalization of ECNs and make sure that obstacles and risks are removed, facilitating convergent conditions for investments in the future electronic communications networks without creating market distortions or fragmentation. This

assumption does not imply a convergent regulatory framework which could have a negative impact on telecom-cloud collaboration and on end-users, it does imply further standardization efforts to enable efficient solutions at the global level through interoperability as well as harmonization of regulation among Member States.