



Public consultation on the draft BEREC Report on Cloud and Edge Computing Services

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General information

During the 58th BEREC plenary meeting (7 March 2024), the Board of Regulators has approved for public consultation the draft BEREC Report on Cloud and Edge Computing Services.

Cloud computing underpins most of the developments taking place in the digital sector. Its importance is meant to grow even more in the coming years. Electronic Communication Network and Services are particularly impacted, both from the technical and market dynamics perspectives, and evolving thanks to cloudification. This draft report aims at shedding further light in the impact of these developments with a particular focus on the electronic communication sector, including the regulatory implications of the trends identified.

Your details

* First Name and Surname

[REDACTED]

* Email

[REDACTED]@theshiftproject.org

* Company/organization (in case you are replying on behalf of your organization)

The Shift Project

* Country of origin

France

Practical details of the public consultation

All interested parties are kindly requested to submit their contributions here **by 24 April 2024 COB**. We strongly encourage all stakeholders to submit their contributions as early as possible. After submitting the contribution, an acknowledgment email will be sent to you.

Contributions should preferably be sent in English.

In accordance with the BEREC policy on public consultations, BEREC will publish all contributions and a summary of the contributions, respecting confidentiality requests. Any such requests should clearly indicate which information is considered confidential and be accompanied by a non-confidential version.

Any comments, suggestions, clarifications or further information related to the subject matter are welcomed.

Nonetheless, without limiting the scope of the public consultation contributions, BEREC is particularly interested in the stakeholders' views and collaboration regarding a number of specific questions.

Therefore, the public consultation is structured in two parts.

In the first part BEREC invites the stakeholder to comment and provide their views on the different parts of the draft report as follows:

Executive Summary

Chapter 1. Introduction: Recent evolution of cloud and electronic communications services and scope and objectives of the Report

Chapter 2. Cloud and edge services: definitions and taxonomies

Chapter 3. Cloud and edge services in the EU: Challenges and EU Policies and regulations.

Chapter 4. Cloud Market characteristics

Chapter 5.1 Interoperability and standards

Chapter 5.2 Switching

Chapter 6 Cloud and electronic communications interplay: general comments

Chapter 6.1 Cloud and electronic communications interplay: Connectivity to cloud and edge

Chapter 6.2 Cloud and electronic communications interplay: migration to the cloud

Chapter 6.3 Cloud and electronic communications interplay: Provision of cloud-based network services

Chapter 6.4 Cloud and electronic communications interplay: Bundled and integrated ECS and IT services with cloud

Chapter 7.1 Network cloudification in the EU Regulatory framework

Chapter 7.2 Potential Regulatory Implications: general comments

Chapter 7.2. Potential Regulatory Implications: i. Scope of sectoral regulation

Chapter 7.2. Potential Regulatory Implications: ii. Competition implications on the ECN/S markets

Chapter 7.2. Potential Regulatory Implications: iii. Chapter 7.2. Potential Regulatory Implications: ii. Competition implications on cloud markets

Chapter 7.2. Potential Regulatory Implications: iv. Competition implications of partnerships between ECN/S and cloud providers

Chapter 7.2. Potential Regulatory Implications: v. Other competition issues related to ecosystem effects.

Chapter 7.2. Potential Regulatory Implications: vi. APIs openness and API exposure

Chapter 7.2. Potential Regulatory Implications: vii. Fostering investment in cloud-based networks

Chapter 7.2. Potential Regulatory Implications: viii. Fostering connectivity investment to enable edge computing.

Chapter 7.2. Potential Regulatory Implications: ix. Interplay amongst the different EU legislations impacting cloud and ECN/S

Chapter 7.2. Potential Regulatory Implications: x. Digital regulatory enforcement

Chapter 7.2. Potential Regulatory Implications: xi. European digital sovereignty

Chapter 7.2. Potential Regulatory Implications: xii. Sustainability

Chapter 7.2. Potential Regulatory Implications: xiii. Digital divide

Chapter 8 Future Trends

In the second part, BEREC seeks more concrete information regarding the following issues:

- Chapter 2 develops on electronic communication networks migration to the cloud. One of the preliminary considerations pointed out in this section regards to the scalability constraints that face ECN that might hinder taking fully advantage of network cloudification benefits. It is also argued that mobile networks may face less limitations than fixed networks. Do you agree with these preliminary findings? Please, explain your answer. Are there other scalability constraints to be considered?
- Is there a risk that investments in cloud-based networks crowd out private investments in network coverage and network capillarity? Are investments in network innovation and network coverage substitutes or complements?
- What are your expectations on the evolution of competition in the electronic communication markets given network cloudification? Can market failures in the cloud market affect competition and investment in the provision of electronic communication networks and services? To which extent?
- Are all operators and service providers equally equipped to take advantage of network 'cloudification'? What would be needed to ensure that the transition to cloud networks does not create an uneven playing field in electronic communication markets?
- Chapter 7 develops on regulatory considerations related to the different trends described along the report (e.g. the characteristics of the cloud markets, cloud and ECN/S convergence, synergies and dependencies among players and technologies, etc.). Do you agree that those are potential relevant regulatory matters in the coming years? Is there any other potential risk (or opportunities) that regulators should consider?
- What is your opinion on the different hypothetical situations mentioned in Chapter 2.2, point vi. "APIs openness and APIs exposure" in which potential issues related to API exposure may arise? Are these hypothetical situations relevant and if so, in what timeframe?
- Technical developments allow for increased connectivity specialization tailored to specific services. From a forward-looking perspective, is there a risk that network capabilities enabled by cloudification, in the context of the observed digital market trends (ecosystems, concentration, network effects, potential for leveraging market power into adjacent markets, etc), could lead to a reconfiguration of the Internet towards separated, proprietary and non-interoperable, environments?

It is not necessary to react to all sections and questions proposed to submit the contributions.

A document can be also uploaded as a part of the contribution. **In order to facilitate processing of the responses and the introduction of possible changes in the report, the comments provided should clearly refer to certain sections/subsections/paragraphs of the document.**

Public consultation - Part I Comments on the Report

Executive summary: General comments on the report

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The evolution of cloud and edge computing must be considered within the framework of a currently unsustainable digital transition.

For many stakeholders in the digital world such as BEREC, the transition to cloud and edge computing promises a major sectoral transformation, particularly in the realm of ECN/S. While we commend BEREC's attention to sustainability in the challenges it identifies, we advocate for a more central consideration of environmental aspects.

As the sustainability of our current practices in producing and utilizing digital technologies is questionable, it's crucial to examine the viability of such dynamics. In 2019, around 3.5% of global carbon emissions were caused by the production and use of digital and digital system, exceeding the usual 2% attributed to civil aviation. With a projected annual increase now standing at 6%, this figure could more than double by 2030 to reach 8% of the total global carbon emissions (The Shift Project, 2021).

Yet, while cloud and edge computing are often perceived in the collective imagination as detached from their material footprint, this dynamic is concretely manifested by a proliferation of "outsourced" data centers, often spanning hundreds or thousands of square meters, housing rows of servers that store, manage, and make information available via the Internet. This also entails a dissemination of computing power into connected objects, with an inflationary effect that is difficult to quantify and control given the diffuse nature of the phenomenon.

It is therefore crucial to bring this trend under control, especially when it contributes to increasing the market power of actors whose business models are primarily responsible for the escalating energy footprint of the digital realm.

Regulation and the development of a societal hierarchy of usage on the consumer side are essential to harness cloud and edge computing for transition rather than allowing them to become vectors of deleterious evolution.

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Public consultation - Part 2 Specific Questions

Chapter 6.2 develops on electronic communication networks migration to the cloud. One of the preliminary considerations pointed out in this section regards to the scalability constraints that face ECN that might hinder taking fully advantage of network cloudification benefits. It is also argued that mobile networks may face less limitations than fixed networks. Do you agree with these preliminary findings? Please, explain your answer. Are there other scalability constraints to be considered?

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Please upload your file(s) (max file size is 1MB)

Please specify which part of your response should be treated as confidential, if any:

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THANK YOU FOR YOUR CONTRIBUTION

Contact

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