

Internet Society's submission to the European Commission's exploratory consultation on "The future of the electronic communications sector and its infrastructure"

Introduction

The Internet Society welcomes the opportunity to provide feedback in response to the exploratory consultation on the "The future of the electronic communications sector and its infrastructure". With this submission, the Internet Society seeks to inform the Commission's understanding of critical Internet issues and their relevance to the future of the connectivity sector. We have chosen the format of a written submission as we believe the consultation's questionnaire is insufficient, and unfortunately ill-designed, to support the Commission's understanding of relevant facts and figures. We also specifically address the suggested policy measures described in "Section 4. Fair contribution by all digital players" that we consider would be of utmost harm to the global Internet and its users. We hope this contribution proves valuable to the Commission as it considers the future of Europe's electronic communications sector.

Key points:

- Many of the consultation's questions are based on a factually-flawed premise and perpetuate a misrepresentation of Internet traffic as caused by online services. The consultation also presumes there is a problem that needs to be "*solved*" but **fails to provide any evidence of its existence**. Offering solutions to a non-existent or not well understood problem will lead to inadequate decisions.
- Introducing direct payments will **drastically change the model of how the Internet works** globally, and will lead to an inefficient infrastructure, higher costs, lower quality of service and risks a fragmentation of the Internet.
- **Traffic volume is an inadequate metric** for a network's contribution to a common infrastructure, it creates adverse incentives and leads to a more costly and less efficient interconnection infrastructure.
- Enforcement of such proposals may have long-term economic consequences and would **conflict with network neutrality**.



About the Internet Society

The Internet Society is a global non-profit organization founded in 1992 by some of the Internet’s early pioneers. Our global community is made up of thousands of energetic, enthusiastic, and committed individuals, organizations, and volunteers. We believe the Internet is a force for good and we are working towards an open, globally connected, secure and trustworthy Internet that benefits everyone. With 128 active chapters across six continents, of which 28 are in Europe, and more than 100,000 individual users supporting our activities, the Internet Society is a significant stakeholder, and a reliable, technically informed civil society interlocutor for Internet governance issues.

The Internet Society works to make the Internet bigger and stronger for people everywhere to connect, communicate, and innovate, now and in the future. Founded at the beginnings of the explosive growth of the Internet, we have seen the Internet’s incredible capacity to continuously evolve—both in terms of its infrastructure and the services it supports. Yet, even as the Internet evolves with new services and innovations, its model of voluntary networking has remained constant. The Internet is built by the voluntary interconnection of more than 75,000 independent networks. Each one of them makes use of publicly available standards to set up their connections and produce a shared platform that allows people all over the world to communicate.

Important note: in this contribution we use the term Internet Service Provider (ISP) interchangeably with the consultation’s term Electronic Communications Networks (ECN). We believe this is important since the service affected by the regulatory suggestions is the Internet access service provided by ECNs.

Flawed premise and the absence of a problem

The Internet Society is deeply concerned by the consultation’s problem-framing around Internet traffic growth, importantly in Section 4. Specifically, we are concerned about the misrepresentation of online services as “traffic generators” in the introductory text and in subsequent questions (e.g., Question 43; 49; 50; 51; 53; 54; 55). As noted in the introductory text, this framing is being presented by incumbent electronic communications operators, and constitutes the core argument for having online services make “fair contributions” to network investments.

This framing is fundamentally incorrect as **Internet traffic is a result of end-users requesting this traffic from online services, in line with the data allowance of their Internet access subscription.** While the introductory text does acknowledge that other stakeholders have presented this argument, the consultation’s text fails to acknowledge that the description of traffic as



generated by end-users request is not simply an opinion but that it is also factually correct. This point was made very clear in BEREC's preliminary assessment¹ from October 2022, in which it strongly refuted the description of online services as "causing" the traffic.

It is therefore unfortunate that the consultation does not clearly acknowledge this fact, but instead perpetuates this misrepresentation of traffic causation in subsequent questions. In this light, large parts of the consultation fail to articulate factually based questions, which greatly **undermines the consultation's validity in any subsequent policy deliberations.**

The consultation also provides no clear description or evidence-based rationale for why regulatory interventions should be considered. This is highly problematic since the Commission is asking stakeholders to consider "solutions" in absence of a clear problem statement that justifies these policy considerations. For instance, BEREC's preliminary assessment makes it clear that they see **no evidence of a market failure that would justify a regulatory intervention.**

Notably, BEREC's assessment also illustrates that an increase in traffic does not directly translate to higher network costs. The report clearly describes how **increased traffic volumes do not lead to any significant incremental costs**, and that the relevant metric instead relates to the networks' absolute capacity and to any upgrades required to accommodate significant changes to peak traffic (i.e., the highest traffic volume at any given time). In this light, **the questions on relative traffic volumes are highly misguided**, and without direct reference to their impact on peak traffic, the results are of no relevance to the consultation's overarching question about the connectivity sector's economic sustainability.

¹ <https://www.berec.europa.eu/en/document-categories/berec/opinions/berec-preliminary-assessment-of-the-underlying-assumptions-of-payments-from-large-caps-to-isps> , BEREC, October 2022



The proposed solutions (Q54 and Q60) would be detrimental to an open and globally connected Internet

The Internet Society is deeply concerned by the policy interventions suggested in the consultation, specifically the suggestions made in Question 54 and Question 60. We believe that the interventions are **incompatible with the open and global Internet** that the European Commission publicly supports, and that they would cause significant harm to users, including the risk of Internet fragmentation. We outline our concerns in reference to each of the proposed interventions below:

Question 54. “The European Declaration on Digital Rights and Principles states that all digital players benefiting from the digital transformation should contribute in a fair and proportionate manner to the costs of public goods, services and infrastructures to the benefit of all people living in the EU. Some stakeholders have suggested a mandatory mechanism of direct payments from CAPs/LTGs to contribute to finance network deployment. Do you support such suggestion and if so, why? If no, why not?”

The Internet Society strongly opposes this suggestion. A mandatory mechanism of direct payments from online services to finance network deployments is in direct conflict with the very essence of the Internet’s networking model. This model, which was foundational for the growth and success of the Internet, and which remains vital for its future, is based on the premise that in order to become part of the global Internet a network only needs to connect to one other network that is already connected to the Internet. No additional arrangements with other networks apart from the network’s direct neighbours are necessary. The proposed mechanism would result in online service providers having to make arrangements with all ISPs, including those with whom they do not have a direct interconnection. **This drastically changes the fundamental premise of the Internet’s networking model.**

Moreover, such mandatory payment mechanism based on traffic volumes corresponds to a “sender pays” settlement regime, which has been rejected by organizations such as BEREC, as well as the broader Internet community, in the past. The Internet Society has assessed the impact of South Korea’s decision to introduce a version of such a settlement model. We concluded that in South Korea the rules have had a negative impact on the country’s digital ecosystem². Our analysis finds that the existing rules create unnecessary costs and bottlenecks in South Korea’s Internet infrastructure. Instead of attracting necessary investments in further development of this infrastructure, they in fact remove incentives for other stakeholders to invest in the connectivity ecosystem. They also risk increasing market concentration and dominance by a few large service providers. The case of South Korea provides a valuable lesson

² <https://www.internetsociety.org/resources/doc/2022/internet-impact-brief-south-koreas-interconnection-rules/>, Internet Society, May 2022.



since it is a live experiment demonstrating how interference in voluntary negotiation amongst networks can have adverse effects on both network economics and performance.

The South Korean experience also shows that services that previously peered locally at marginal cost have moved their interconnections to Japan, causing increased costs through a greater reliance on International transit. **Should the EU introduce a ‘sender pays’ regime we predict a similar dynamic by which many services will move to more favourable economic zones,** for instance the UK or the Middle East.

The proposed mechanism creates a risk of global Internet fragmentation: A basic premise in the Internet is that once you connect to the Internet you are part of the Internet, meaning that all end-points on the network can be reachable by all other end-points in any other network. This feature has been key to the Internet’s success as a global source of innovation and development, providing European users and businesses with a truly global market.

The introduction of a mandatory mechanism of direct payments breaks this fundamental premise since the reachability of online services would be conditioned on prior contracting with specific access networks that are not direct peers. As a result, **European users would no longer have access to an open Internet,** but to a subset of networked services that have contracted with their network provider based on business decisions. European users might, for example, not have access to the latest artificial intelligence (AI) or productivity tools, because those services would need to negotiate payments before being available to European users. This would leave Europe behind while the rest of the world uses these new services.

The proposed mechanism is incompatible with net neutrality: Net neutrality ensures that users have access to an open Internet, and without discrimination to all end-points thereof. It is a straightforward principle that ISPs, in their position as gatekeepers for users' access to the Internet, treat all online services equally, and do not block, throttle or in other ways discriminate between services. This principle is embodied in the EU’s Open Internet Regulation (Regulation (EU) 2015/2120), which obligates ISPs to “[..]treat all traffic equally, without discrimination, restriction or interference, independently of its sender or receiver[.]”.

The introduction of a **mandatory payment mechanism would be directly inconsistent and incompatible with these obligations,** with direct harm to consumers as a result. For instance, enforcement of the new obligation would give ISPs the *right* to treat traffic differently, e.g., by allowing them to block, or in other ways penalize, services that do not wish to pay the ISP. In consequence, users would no longer have access to an open Internet, but would be limited to the services that have concluded an agreement to pay their ISP.

The proposed mechanism would distort market driven collaborative development and deployment of efficient infrastructure: The Internet is a network of independent networks that



voluntarily interconnect for mutual benefit. This model has proven its value time and time again over the last decades, and most recently during the COVID-19 pandemic. It allows network operators to optimize their connectivity with others to meet their customers' needs. The result has been an efficient and resilient network of networks that is able to evolve to meet new demands (like in the case of a sudden surge of remote working), host new applications (like voice calls or gaming), and to deploy innovative services at a global scale.

This means that the global Internet infrastructure is built collectively, by all participating networks, each contributing to the development and optimisation of the interconnection infrastructure. For example, ISPs (also named ECNs in the questionnaire), develop and deploy access infrastructure by investing in Fiber to the Home (FTTH), mobile and other types of physical networks. Internet Exchange Points (IXPs), develop and deploy geographically distributed powerful platforms enabling networks of all types and sizes to peer and exchange traffic among each other. Content providers develop high-speed dedicated networks interconnecting their caches, bringing content closer to consumers, or even deploying so-called on-net caches inside the ISP. This is why the Internet is often described as a "ecosystem": different stakeholders contributing their different parts ensures that the system is optimized and works as a whole. Simply stated, on the Internet, content providers develop and distribute content and supporting infrastructure, such as caches and global backbone networks connecting them, around the world—with no contribution by ISPs to support the development of content—while ISPs execute their customers' requests for the content of their choosing, with no contribution by the competing content providers who are vying for the attention of the end users.

This contribution is fair, based on collaboration among the networks and driven by market forces, including user/consumer demand. It has proven to be an effective way to deliver unprecedented levels of user experience, innovation in the ISPs and other networks, content availability and quality of service. In comparison, the proposed mechanism creates adverse incentives for the ISPs to maintain inefficient infrastructure and avoid optimisation of traffic, as such inefficiencies will turn into a revenue stream, paid by content providers.

What happens when this collaborative ecosystem is distorted by careless regulation can be seen in South Korea. Content providers are backing away, their incentive to invest in the country's infrastructure is diminishing, leading to sub-optimal traffic flows (e.g., traffic exchange happening outside the country) with lower quality and higher costs for service delivery. These externalities not only reduce the experience of Korean Internet users, but also harms Korean industries such as the gaming sector that rely on low latency to deliver their products to



consumers. Moreover, as our analysis shows, a misguided regulatory intervention has been hard to rectify and led to a subsequent policy patchwork, worsening the situation further³.

The proposed mechanism would distort competition and prevent new players, including

European CAPs and ISPs, to enter the market: As described by BEREC in its report, there is no evidence of a market failure that would warrant a policy intervention. Instead, the most likely outcome of an intervention would be to distort existing markets in favour of larger ISPs that are best positioned to exploit a termination monopoly.

For example, larger ISPs would have a significant negotiating power vis-a-vis the online service providers due to a large customer base. Small ISPs with a smaller customer base, would not have the same bargaining power in negotiating similar payments, or negotiate a payment at all, placing them at a competitive disadvantage. This disparity between ISPs' ability to conclude contracts could also be leveraged by the larger ISP in their negotiations with smaller ISPs. In today's Internet, smaller ISPs are often able to establish settlement-free interconnection agreements with large content providers through public peering. However, a mandated payment mechanism would disincentivize content providers to offer such arrangements and instead focus on paid peering arrangements with large ISPs. As a result, it would increase smaller ISPs dependence on interconnections to the large ISP for access to the content, placing the large ISP at a competitive advantage in negotiating paid peering arrangements with smaller operators. These outcomes would harm Small and Medium European enterprises, cement the dominance of large providers, both large ISPs and major content and application providers, undermine the ability of new competitors, including new European competitors, to enter the market, and potentially derail ambitions for the Digital Decade.

There are no benefits to consumers from the proposed mechanism: Online services are likely to pass on the increased traffic costs to consumers through higher prices (e.g., raising the costs of streaming subscriptions). As far as the ISPs are concerned, according to a report from ECIPE⁴ "EU's largest telcos have consistently issued dividends that are well above the market average", instead of re-investing in the infrastructure or lowering prices for consumers. There is no indication that this trend will change.

³ <https://www.internetsociety.org/blog/2022/09/sender-pays-what-lessons-european-policy-makers-should-take-from-south-korea/>, Internet Society, September 2022

⁴ <https://ecipe.org/blog/rethinking-incentives-infrastructure-investments/> ECIPE, September 2022



Question 60. *“The European Declaration on Digital Rights and Principles states that all digital players benefiting from the digital transformation should contribute in a fair and proportionate manner to the costs of public goods, services and infrastructures to the benefit of all people living in the EU. To achieve this, some stakeholders have suggested to introduce a mechanism consisting of a EU/national digital contribution or fund. Do you support such suggestion and if so, why? If not, why not?”*

The Internet Society does not support this suggestion, and strongly opposes any policy intervention that would regulate payments from online services on the basis of traffic volumes. A mechanism of contributions to a fund based on the principle that online services must pay for the traffic requested by users is, in effect, a version of a “sender pays” regime. This policy suggestion comes with most of the drawbacks presented in response to question 54, which are further elaborated below.

Traffic volumes are an inappropriate and unfair metric for contributions: While the proposal is aimed at supporting a “fair contribution”, in reality such approach disincentivises the collaborative development of infrastructure that we mentioned before. Current technologies for content distribution are based on the deployment of a hierarchy of caching servers as close to customer populations as possible. The on-net caches inside the ISP are examples of such approach. This architecture not only dramatically improves the quality of service, including latency, jitter and throughput, it also optimises traffic flows, eliminating unnecessary duplication of transmitted data.

If such caches are not deployed, every request from an ISP’s user will result in a separate dedicated traffic flow between the user and the content resource (such as a website or a streaming service), increasing traffic volume exchanged between the content provider and the ISP by orders of magnitude. And if, like in South Korea, the impediments introduced by regulatory intervention are high enough to prevent direct interconnection between the ISP and a content provider, the volumes of traffic will likely result in a significant increase in transit costs. As a result, the proposal will make the overall infrastructure more expensive, both for ISPs and content providers, prevent its optimisation, and at the same time require unfair contributions from the players.

Mandating contributions will lead to poorer and more expensive service for European users. As demonstrated above, the proposed mechanisms, either through direct contributions or through a fund, will lead to inefficient infrastructure with higher costs and suboptimal quality, resulting in a poorer service for European users.

Mandating contributions will impede access for European users to future waves of Internet - based service: New services, platforms and applications, that often go viral resulting in a very rapid increase of consumer interest and, consequently, of traffic volumes, will face a higher threshold in the EU. To mitigate the risk of being subjected to this new regulation they will likely



develop such services outside the EU and will focus on more attractive markets with lower barrier for entry. As a result, European users will get access to such services with a delay, if at all.

Access to the fund may distort competition amongst ISPs: There is no clarity about what metric will be used to manage access to such fund. As we pointed out above, using traffic volumes creates a condition where incentives are misplaced and contribution as well as distribution of the funds is unfair.

Cross-subsidising through a fund is not justified by a societal benefit: Furthermore, and in response to suggestions made in questions 26 and 30, we see no legitimate rationale for why online services should be obliged to contribute to universal service funds. The purpose of these funds is to cross-subsidize investments amongst access service providers in order to incentivize investments in less profitable markets. Since online services are not active in the provisioning of such access services, we see no legitimate reason to mandate their contributions.



Conclusion

In this submission, we have tried to describe the shortcomings in the premise of the current consultation, notably Section 4 and its misrepresentation of traffic causation, as well as its misguided focus on relative traffic volumes. We believe that these issues severely undermine the consultation's relevance for informing the Commission about the connectivity sector's economic sustainability. Furthermore, and in line with BEREC's preliminary assessment, we do not see **any evidence of a market failure** that would justify the regulatory interventions suggested in Question 54 and Question 60. Instead, the proposed interventions **risk a fragmentation of the global Internet**, distort market competition and create adverse incentives that lead to a more expensive and inefficient infrastructure with poorer quality of service and higher costs.

We believe it is critical that Europe uses its global leadership in defence of an Internet that is open, globally connected, secure and trustworthy.

To this end, we recommend that the European Commission:

- Rejects proposals to mandate direct payments from online services
- Rejects proposals that would mandate contributions from online services to a common fund based on traffic volumes

If the European Commission proceeds down this path, the proposed regulations will in fact harm European users, stifle the development of new products and services in Europe, restrict access by European users to new services, and negatively impact the EU economy.