



Mozilla's Position on Global Network Fee Proposals (aka "fair share")

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At Mozilla, we're a global community of technologists, thinkers, and builders.

Our mission is to ensure the internet is a global public resource, open and accessible to all. An internet with trust at its core, where individuals can shape their own experience and are empowered, safe, and independent.

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Executive Summary

We have followed the latest round of calls for so-called “fair share” network fee payments from major content and application providers (CAPs) to telcos. In the EU, these calls have led to an [exploratory consultation](#) on the issue by the European Commission. In Brazil, [a similar process](#) is being undertaken by the country’s telecom regulator, Anatel. In India, telecom companies have also [jumped on the bandwagon](#).

We are troubled by these proposals for a number of reasons.

- **Digital inclusion should be the focus and priority of policy-makers**, rather than the profitability of European telcos. The European Telecommunications Network Operators’ Association (ETNO) has attempted to turn the spotlight on their members with their network fee proposal. Yet any direct payments from CAPs to telcos would be no guarantee of more equitable, inclusive, affordable access for all.
- **Evidence should be transparent and verifiable**, whether for or against the network fee proposal. The underlying methodology and sources of evidence supplied by ETNO in support of the network fee proposal are not transparent in terms of either source or methodology. This is amply illustrated by the fact that some of ETNO’s claims are contradicted by the annual reports of their member operators.
- **ETNO claims that their proposal would not violate net neutrality have been rejected by regulators and are not supported by historical or economic evidence.** Such mandated payments would effectively grant network operators a termination monopoly, giving them gatekeeper control over content and reaching their customers. There is increasing evidence that the biggest telecom operators are already attempting to extract such payments for sufficient connectivity in their network.
- Finally, **many of the concerns raised by network operators are best addressed via competition tools**, not network fee payments.

We are keenly aware that affordable, high-speed internet connectivity remains out of reach for many communities, and that action is needed to address an increasing digital divide. We also recognize that, although the network fee debate is not new, increasing demand for broadband, compounded by the shift to remote work with the COVID-19 pandemic, has made the elimination of the digital divide an ever more urgent policy priority.

Telco claims about network traffic are misleading, and policymakers should base policy on evidence about network traffic and revenue that is independent and verifiable

The current network fee debate is notable for some eyebrow-raising claims about current trends in internet traffic share and growth. Eye-catching pie charts suggesting that the majority of internet traffic is taken up by a small number of CAPs make for great headlines, but many of these claims oversimplify the diverse structure of internet networks. A given piece of data traveling from a content provider to an individual might travel halfway around the world, but is much more likely to be served from local caches either at an IXP or within an operator's network.

Claims that the largest CAPs take up upwards of 56% of global internet traffic¹ are therefore disingenuous, projecting an image of the internet as a homogenous resource. Those figures also obscure the fact that public broadcasters, government services and startups, who depend on the content delivery network (CDN) infrastructure of big tech companies, would likely also be faced with higher costs as a result of network fees being passed on to them.²

Finally, traffic per se is not an appropriate metric of network burden; rather, network operator cost and profit and the user experience of network speeds are much more appropriate.

Let's focus briefly on the question of how much it costs telcos to carry increased traffic. (Ignoring for the moment that increased traffic often means increased revenue when that traffic comes from new subscribers or higher-tier subscriptions.) This metric, more than mere traffic levels, is vital to the network fee debate. There are a few assumptions that both sides of the debate agree on, for example that the most significant traffic-sensitive costs come from mobile networks.

But the debate has otherwise been a war of words and figures, with [studies](#) using proprietary and undisclosed network operator data finding that increased traffic is driving huge costs for telcos, while [studies](#) and [rebuttals](#) by CAPs have found the opposite, including one estimate by a telecommunications consultancy which found that 80 to 90 percent of network operator costs are largely independent of traffic, and the remaining

¹ ETNO, for example, cites research from Sandvine here:

https://www.sandvine.com/hubfs/Sandvine_Redesign_2019/Downloads/2022/Phenomena%20Reports/GIPR%202022/Sandvine%20GIPR%20January%202022.pdf

² This will be the case if network fee proposals are crafted on a traffic-per-CAP basis, since the same companies that provide major streaming services also provide cloud services to public broadcasters, government services, and startups.

traffic-dependent costs have been flat over time due to decreasing hardware costs and increased efficiencies.

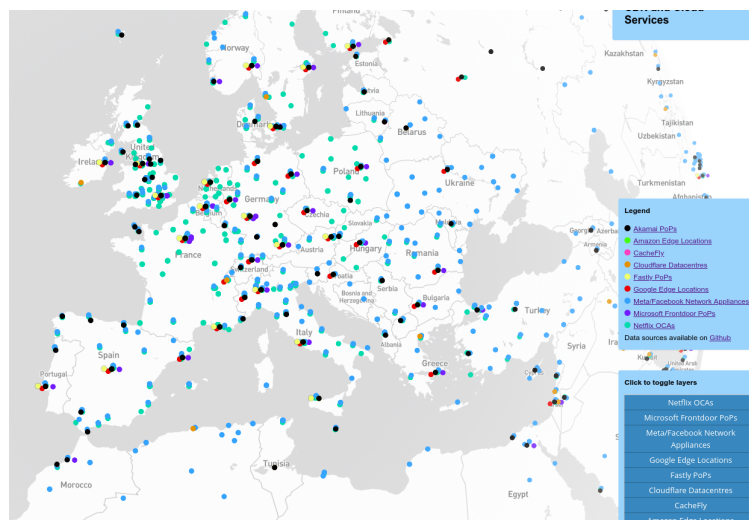
Similarly, a British Telecom [presentation](#) from 2018, for example, reveals that BT's costs per unit of traffic decreased by over 70% from 2012-2018. Modern network equipment can simply handle much more traffic than older hardware, while costs have remained stable.

For all of these reasons, broad claims correlating growth in internet traffic with network infrastructure investment costs are disingenuous, and any policymaking in this area should be based on thorough and independent analysis. Given the striking lack of publicly available data surrounding network operator claims, it would be a clear mistake to move forward without transparent and independent studies.

Next, the network operators' network fee argument is weaker now than when a similar policy was proposed a decade ago under the name of "Sending Party Pays" due to the evolution of internet caching and peering. Indeed, for more than a decade, major CAPs have supplied CDNs both at internet exchange points and, increasingly, **inside** telecom operator networks in order to improve response times and to reduce the burden of streaming on the internet. The same BT presentation cited above describes how more than 60% of BT's traffic at the time was carried by CDNs – a number that is only likely to increase.

In other words, large content providers already **do** invest in internet infrastructure.

[An aggregated map](#) of CDNs and caches reveals the extent of CAP investments in this space.



It would be a mistake to ignore the role of existing investment by content providers in large portions of the network.

A recent study has documented how big telecom companies have engaged in practices such as reducing their capacity at internet exchange points in order to force interconnection agreements at a much higher price from CAPs.³ Such behavior would amount to paid fast lanes, since the service quality is dependent on payments directly to the telecom company.

Given these complicated market dynamics, any comprehensive analysis of network fees needs to be based on data about interconnection agreements, which are often clouded in secrecy. Therefore, for any policy debate on digital equity to move forward, policymakers need to create transparency about the interconnection market and empower independent analysis of the resulting data.

Policy option:

Regulators empower one or more independent technical bodies to analyze internet traffic, network operator costs, and user experience metrics on a regular basis.

Independent research bodies such as the Center for Applied Internet Data Analysis ([CAIDA](#)) should be considered to carry out this work. In Europe such an analysis is already underway with the Body of European Regulators for Electronic Communications ([BEREC](#)) Report on IP-Interconnection practices which is scheduled to be released in 2024.

Mozilla is [currently working](#) with stakeholders including the World Bank, the International Telecommunications Union, and the Internet Society to create open data standards for the telecommunications sector. These standards could play an important foundational role in creating transparency around telecommunications infrastructure claims. The complexity of internet network infrastructure means that any credible measurement is likely to have to be clearly constrained to a particular context. Both methodology and measurements should be subject to peer review.

ETNO's claims that network fee proposals would not violate net neutrality have been rejected by regulators and are not supported by historical or economic evidence

BEREC, the body tasked with enforcing network neutrality in the EU, has already provided two analyses of the ETNO proposal. Both of them have found a profound negative impact

³ See section 5.2 here for a number of examples:

https://www.bundesnetzagentur.de/EN/Areas/Telecommunications/Companies/Digitisation/Peering/download.pdf?__blob=publicationFile&v=1

of this proposal on the internet ecosystem⁴ and BEREC sees the proposal as violating the EU's net neutrality rules⁵. The regulators are joined in their assessment that this would violate net neutrality by the European Consumer Protection organizations⁶ and by civil society organizations⁷. It seems clear at this point that any form of network or termination fee is in violation of network neutrality.

As Mozilla has previously argued, [most notably](#) when it was named plaintiff in a US lawsuit fighting for net neutrality rules to be upheld at the FCC, net neutrality is a vital principle in the internet age. Without net neutrality, providers can control what people see and do online – not the consumers who pay for their internet connections. We have also [highlighted](#) the need for the EU to maintain its global leadership on net neutrality. Any erosion of this principle will directly harm consumers and small businesses who will end up not having access to all of the content and possibilities the internet offers.

Indeed, the empirical results of previous network fee implementations contradict EU telecom carriers' claims of the benefits of payments from content providers and underscore the negative impacts on network neutrality. The peering and transit model of internet traffic has been hugely successful, unlike other sending party network pays proposals – notably in Korea – which have been unsuccessful.⁸ Policymakers risk upsetting time-tested economic arrangements if they introduce auxiliary payments that are not guaranteed to benefit the public interest. This is especially true as no market failure has been demonstrated and regulators such as BEREC are warning against broad intervention in the interconnection market.

Policymakers should consider the lessons learned from the calling party pays (CPP) model for telephone network interconnection. CPP in telephony is the analogue of SPNP in broadband. And the results of CPP have been clear: exorbitant roaming and international call rates, fueled by the termination monopoly that each network operator has with

⁴ BoR (22) 137

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

⁵ BoR (23) 131d

<https://www.berec.europa.eu/en/document-categories/berec/others/berec-input-to-the-ecs-exploratory-consultation-on-the-future-of-the-electronics-communications-sector-and-its-infrastructure>

⁶

https://www.beuc.eu/sites/default/files/publications/BEUC-X-2022-096_Connectivity_Infrastructure-and-the_open_internet.pdf

⁷ <https://en.epicenter.works/document/4146>

⁸

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

respect to its own subscribers. A number of studies in the early 2000s, for example, found that termination rates in Europe were more than 100 percent above cost.⁹ Implementing network fee payments would lead the internet down the route of telephone networks, where termination monopolies are the name of the game.

In Korea, the impacts of network fees on net neutrality have been significant, where some research¹⁰ suggests that it has caused increased prices and slowed speeds for high-traffic services. This selective impact on particular content constitutes a de facto violation of the principle of net neutrality. The CTIO of Orange has publicly stated that “without the telcos, without the network, there is no Netflix, there is no Google,” going on to say “we are absolutely vital, we are the entry point to the digital world.”¹¹

And in Brazil, telcos are making it very clear that network neutrality is at issue, [demanding](#) that net neutrality regulations be repealed so that they can negotiate with content providers. These statements make explicit that network fees contradict net neutrality.

The European Commission initiated the current debate about network fees.¹² Many other regions reference the EU in their debate.¹³ And on May 19, 2023, the exploratory consultation of the European Commission concluded.¹⁴

The Commission just this month allowed the public to review the consultation responses, four months after the conclusion of the consultation. Given that other countries are paying so much attention to the EU’s policy-making in this area, complete transparency is essential here, and the consultation responses reveal what we had suspected: Everyone but the telcos themselves appear to reject the idea of network fees. Among the critics of the proposal are unexpected stakeholders, including: public broadcasters¹⁵; sports-rights

⁹ See <https://www.econ.cam.ac.uk/research-files/repec/cam/pdf/cwpe0426.pdf>, Figure 1.

¹⁰ See <https://researchictsolutions.com/home/wp-content/uploads/2022/11/RIS-Europe-FINAL.pdf> pp. 21-22

¹¹ [Netflix’s ‘net neutrality’ lawsuit with South Korean Internet service provider enters appeals - THE ELEC, Korea Electronics Industry Media](#)

¹²

<https://www.reuters.com/business/media-telecom/eus-vestager-assessing-if-tech-giants-should-share-telecoms-network-costs-2022-05-02/>

¹³

<https://apps.anatel.gov.br/ParticipaAnatel/VisualizarTextoConsulta.aspx?TelaDeOrigem=2&ConsultaId=10120&xtrsl=auto&xtrtl=en&xtrhl=en-US&xtrpto=wapp>

¹⁴

<https://digital-strategy.ec.europa.eu/en/consultations/future-electronic-communications-sector-and-its-infrastructure>

¹⁵

https://www.ebu.ch/files/live/sites/ebu/files/News/Position_Papers/open/2023/EBU_position_future_of_electronic_communications_ECConsultation.pdf

associations and other copyright holders¹⁶; internet exchanges¹⁷; and even the majority of governments in the EU¹⁸.

Policy option:

The issue of digital inclusion only grows in urgency as more and more of the world's social and economic activity goes online. However, network fees are clearly not the answer. If governments decide that CAPs bear an obligation to invest in bridging the digital divide, public taxes would be a simpler and safer investment model.

Taxes, levied and spent by the government, could spur investment without distorting the highly successful peering and transit model of internet networking that has evolved over decades.

According to the Commission's own summary report, the majority of respondents, while opposed to a EU or national digital contribution or fund model, were generally in favor of "fair taxation harmonized across the EU instead."¹⁹ The ongoing work at OECD level as well as any potential future discussions on an EU Digital Services Tax should be taken into consideration when contemplating such a tax based proposal.

The debate about network fees affects many communities and stakeholder groups. Decisions about the future business model of the internet need to be taken after an inclusive consultation period with proper impact assessments that fulfills proper due diligence standards. The consequence of any new regulation also has to take into account how network topology would have to potentially adopt away from efficiency towards cost and profit optimization.

Regulators should prioritize digital equity in broadband policy, not network fees

Large CAPs and large telcos have something in common in that they are both the beneficiaries of network effects, suggesting that large CAPs **and** telcos already enjoy significant advantages over smaller operators and new market entrants. A proposal for

¹⁶ <https://en.epicenter.works/document/4660>

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https://www.euro-ix.net/media/filer_public/91/7a/917a92e8-77b0-4d29-bdfc-dd68bce9a523/spnp_impact_on_ixps_-_final.pdf

¹⁸

<https://www.reuters.com/business/media-telecom/majority-eu-countries-against-network-fee-levy-big-tech-sources-say-2023-06-02/>

¹⁹ <https://ec.europa.eu/newsroom/dae/redirection/document/99182>

direct payments between the two is unlikely to either increase competition or to promote digital inclusion. As the Kenyan proverb goes, “When elephants fight, it is the grass that suffers”. We believe that **any** tax, levy, or price regulation aimed at internet infrastructure should have digital inclusion as its first priority. Let payments be directed to ensuring that the most marginalized populations have affordable access to internet services.

Network fee payments, untethered from goals of digital inclusion, would also represent a profit-subsidy to telcos that have repeatedly failed to meet benchmarks of access for rural and underserved populations.²⁰ In the rural EU, for example, the [World Economic forum found](#) that in 2021 only 37% of households had access to high-speed internet. Broadly scoped payments to large telcos would further risk exacerbating the digital divide in the EU and globally by failing to guarantee that network investments are made to serve less lucrative remote and low-income regions as well as more wealthy urban environments.

An analysis of the market dynamics of network operators also underscores the need for regulators to focus on digital equity. Large telcos, who are the principal proponents of the ETNO proposal, face vastly more favorable market dynamics than smaller, rural providers. For example, nearly ninety percent of respondents in a [2022 survey](#) by NCTA: The Rural Broadband Association said that cost was a significant barrier to fiber deployment. Despite this cost, [one study](#) found that broadband deployment in rural areas can have a net benefit-to-cost ratio of up to 4. These data points highlight the importance of digital inclusion, particularly for rural areas. Global telecommunications regulators should therefore focus on the real underdogs – rural and marginalized communities.

If, indeed, CAPs are making disproportionate profits, as network fee proponents seem to imply²¹, it would make more sense to apply policies that more explicitly connect any tax with more direct benefits to consumers. Policy-makers might consider windfall taxes similar to those recently [implemented by the UK](#) in the oil and gas sector.

Policymakers might also consider directing resources to networks that are designed to serve the public good, including municipal broadband, cooperatives, and community-owned network infrastructure in general.

²⁰ See p. 48 et. seq. here for examples of how effective broadband monopolies in certain areas in the US have led to underdeployment – or no deployment – of critical broadband networks in impoverished areas.

²¹ Why TELCOs’ Fair Share Proposal Makes Economic Sense
<https://www.telefonica.com/en/wp-content/uploads/sites/5/2023/05/The-Fair-Share-Proposal-in-Telco.pdf>

For competition issues, use competition tools

Finally, a number of the pieces of evidence raised by the telecom companies are less about the network fee debate than the state of competition in the relevant content provider markets. Specifically, telcos argue that the power of content providers prohibits them from negotiating favorable terms for interconnection, even when such negotiation is not prohibited by net neutrality principles. (We note that similar complaints have been raised by small CAPs that are only allowed interconnection agreements with large telecom companies at an above market rate.) However, harms from the market power of large tech companies are best remedied through competition law and ex ante competition regulation, not third-rail network fee policies. Where the market power of large CAPs is harming internet infrastructure, the most obvious policy answer is strong enforcement of existing competition laws and new competition regulation, such as the Digital Markets Act in the EU.

More competitive tech markets will also ensure that any funding mechanisms imposed upon content providers are not passed on to consumers or advertisers. Indeed, where consumers or advertisers have few choices in a market, dominant players can more easily pass on government fees or taxes, without fear that customers can choose a more affordable option. Rather than network fee payments, vigorous competition enforcement amongst both telecom carriers and content providers will be key to moving the digital equity debate forward productively.

It is also important to note that selective fees on CAPs could distort competition if levied incorrectly. Any regulator assessing network fees would be forced to weigh difficult competition considerations in streaming and social media markets. For example, should Meta's Threads (if it ever launches in Europe) be charged network fees due to Meta's size, but not X (Twitter), Threads' direct competitor?

Last but not least, there is the problem of distorting competition among network operators. MVNO Europe, which represents mobile virtual network operators, [has expressed serious concerns](#) that network fee proposals would harm competition in the telecom sector by favoring the largest telcos and upending time-tested peering systems. Rather than network fees being a cure for competition issues, then, it would exacerbate them.

We note here that to the extent network fee proposals are motivated by a desire for [European Digital Sovereignty](#) or [Open Strategic Autonomy](#), network fee proposals do not fit the bill, given that they are opposed by domestic European firms such as MVNO and [EuroIX](#). They are also opposed by a large number of member states, including Austria,

Belgium, Czech Republic, Denmark, Finland, Germany, Ireland, Lithuania, Malta and the Netherlands.²²

Conclusion

Mozilla strongly encourages the European Commission, Anatel, and Indian regulators to abandon their current frameworks for network fee contributions, and instead to focus on eliminating the digital divide. In its current framing, the outcome of these processes will benefit either large content providers or large telcos, depending on who wins the clash of titans. Policymakers have an opportunity here to benefit the public instead – particularly rural and poorer communities.

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<https://www.reuters.com/business/media-telecom/majority-eu-countries-against-network-fee-levy-big-tech-sources-say-2023-06-02/>