**CCIA Submission to ANATEL**
**TOMADA DE SUBSÍDIO Nº 13**

Below please find the submission of the Computer & Communications Industry Association ("CCIA") regarding ANATEL's consultation on network investment in Brazil. CCIA is an international, not-for-profit trade association representing a broad cross section of communications and technology firms. For more than 50 years, CCIA has promoted open markets, open systems, and open networks.[1]

CCIA supports the efforts to expand the understanding of the digital ecosystem, its relationships, agents, and implications for both telecommunications networks and services and for the users of this infrastructure, whether they are Added Value Services ("AVS") providers (also described in different regions as "content application providers" or "CAPs") or not.

This submission responds to the following questions outlined in the consultation: Question 7, Question 8, Question 9, Question 11, Question 14, Question 16.

CCIA would also encourage ANATEL to review the research conducted by Analysys Mason on the state of global network investment, released in 2022 and available online at: https://www.analysysmason.com/contentassets/4f86a8abd3e749718b4f0514c5d44e64/analysys_mason_impact_tech_companies_investment_-isp_economics_br_oct2022.pdf

**Question 7 - Is there an investment gap in the telecommunication networks that requires regulatory intervention? If yes, what is the evidence?**

There is no evidence that there is a gap in investment in telecommunications networks that requires regulatory intervention, or that telecommunications providers require subsidies from other industries to further develop infrastructure.[2] Rather, telecommunications providers and AVS providers enjoy a symbiotic relationship that sustains a healthy internet ecosystem: any underinvestment in network infrastructure affects both equally, and thus market incentives for efficient investment are strong on both sides. This intertwined and mutually beneficial relationship is evident from the fact that AVS providers drive demand for telecommunications services, which leads to an increase in revenues and ability to make further investments for telecommunications suppliers. In this sense, relevant studies and financial reports confirm that telecommunications firms' increasing revenues are compatible with investments in infrastructure, so there is no potential struggle in this regard.[3] Further, the Brazilian telecommunications industry is very mature and well established, which renders additional subsidies unnecessary.

[1] For more, visit www.ccianet.org.

[2] This has been recognized by BEREC (Body of European Regulators for Electronic Communications), https://www.berec.europa.eu/system/files/2022-10/BEREC%20BoR%20%2822%29%20137%20BEREC_preliminary-assessment-payments-CAPs-to-ISPs_0.pdf ("A closer look suggests that there is no evidence of "free-riding" along the value chain. ISPs' customers buy internet connectivity and pay for sending and receiving traffic. Costs for deploying and upgrading the access networks are typically covered by payments from ISPs' customers.").

[3] Available at: https://www.telefonica.com/en/shareholders-investors/financial-reports/quarterly-reports/2023/, https://ri.telefonica.com.br/en/documentos/2877-Telefonica-Brasil-Presentation-1Q23.pdf, https://www.gruppotim.it/content/dam/gt/investitori/webcast/2023/TIM-Q1-2023-Results.pdf, https://s22.q4cdn.com/604986553/files/doc_financials/2023/q1/AMX-1Q23-FINAL.pdf, https://www.berec.europa.eu/en/document-categories/berec/opinions/berec-preliminary-assessment-of-the-underlying-assumptions-of-payments-from-large-caps-to-isps.

The global market for the carriage and peering of internet traffic boasts strong competition and declining costs. This suggests that even as the demand for traffic over broadband networks has grown, that there is no need for regulatory intervention to address any purported investment shortfall.[4] Consider the finding of the renowned telecommunications research firm, TeleGeography, in its most recent State of the Network 2023 report: "As new international networks are deployed, operational and construction costs are distributed over more fiber pairs and more active capacity, making each packet less expensive to carry."[5]

Additionally, AVS providers invest heavily in improving network capacity for the telecommunications networks through investments in network capacity, caching, and the use of content delivery networks ("CDNs"). Research shows that AVS providers have invested over USD 120 billion annually in internet infrastructure globally from 2018-2021.[6] AVS providers have an incentive to strengthen network capacity on telecommunications networks to ensure that consumers using their services are able to do so with robust connections—given the vast competition for services on the internet, quality of connection and quick loading times are essential for any AVS provider. Further, AVS investments allow for savings in transit fees that benefit telecommunications providers.

In addition to AVS providers' wholly-owned submarine cable links, AVS and telecommunications providers also have partnerships to build submarine cables and manage internet traffic. This includes significant recent investments U.S. AVS providers have made to improve connectivity between Brazil, the rest of South America, and the world.[7] These partnerships are likely to increase and expand, considering trends already visible in the telecommunications industry, such as the virtualization of networks. Based on this trend, networks are shifting from a hardware to a software-centric model, necessitating collaboration to support the uptake of cloud services. In support of this broad technological shift, the activated capacity on submarine cables illustrates the growing investment into this core segment of networks that carry 99% of global internet traffic.

AVS providers are directly feeding into a global trend of increased investment into submarine cables. The amounts involved are substantial: as the TeleGeography 2023 State of the Network report detailed, between the years 2017 and 2021, submarine cables that cost $9.2 billion combined to deploy became operational and "every major subsea route saw new cables deployed during this timeframe."[8] This is expected to continue, and the investments into this infrastructure is crucial for domestic connectivity, for

[4] https://www2.telegeography.com/download-state-of-the-network at 10-11 ("Providers' shift to predominantly 100 Gbps internet backbones continues to reduce the average cost of carrying traffic, and enables profitability at lower prices. As a result, price erosion remains the universal norm. It reflects the introduction of competition into new markets and the response of more expensive carriers to lower prices. Trends in the IP transit market generally follow regional trends in the transport market.").

[5] https://www2.telegeography.com/download-state-of-the-network at 13 ("As emerging markets grow in scale, they too will benefit from economies of scale, even if only through cheaper transport to internet hubs.").

[6] https://www.analysysmason.com/contentassets/4f86a8abd3e749718b4f0514c5d44e64/analysys_mason_impact_tech_companies_investment_-isp_economics_br_oct2022.pdf/ (comparing that time period with the earlier time period of 2014-2017, finding that CAPs increased their spend by over 50% in comparison to the earlier time period).

[7] *See* https://www.submarinecablemap.com/.

[8] https://www2.telegeography.com/download-state-of-the-network ("Investment is expected to continue across all global routes. Based on publicly announced planned cables, over $10 billion worth of new cables are expected to enter service between 2022 and 2024.").

traffic coming from abroad for Brazilian online services, and for traffic leaving Brazil to connect to services offered by foreign AVS providers.

Therefore, AVS providers undoubtedly cooperate for increasing levels of connectivity for citizens through its investments, and also foster innovation and competition in the digital ecosystem.

**Question 8 - Should AVS providers have any clearer role regarding regulatory requirements currently applied only to telecom providers?**

The AVS providers should not have a clearer role regarding regulatory requirements applied to telecommunications firms. First of all, it is questionable whether ANATEL has the statutory authority to regulate AVS providers at all. Consequently, regulatory requirements currently applied only to telecommunications providers should not be extended to AVS providers.

Further, there are fundamental technical and business differences between many AVS and traditional telecommunications services that require differential treatment. While AVS providers and telecommunications firms join the same digital market, the services are not substitutable, but rather complementary. AVS providers use telecom networks, and consumers only access AVS platforms and applications through connectivity provided by telecommunications firms.

One argument made by proponents of extending traditional telephony regulations to AVS and other over-the-top services, prevalent in international discussions, is that this will promote regulatory convergence and enhance digital governance goals. However, there is no global consensus on whether this is the most effective approach or justified. As a general matter, the monopoly origins of traditional telephony in many cases justifies economic regulation that has never been needed in the AVS sector given the low barriers to entry and continuous innovation. In some narrow instances, AVS services have been brought within the purview of telecom or broadcasting regulations through the adoption of light-touch regulations (for example, in the European Electronic Communications Code). However, there are different factors countries should consider before deciding which regulatory approach to adopt.

Therefore, ANATEL's focus here should be solely on (1) creating effective and efficient regulations to facilitate the healthy and orderly growth of the telecommunications and broadcasting sector through a responsive and effective regulatory framework, aimed at telecommunications providers; and (2) guaranteeing the protection of users and consumers in the digital ecosystem, which also comprises AVS providers. ANATEL should guarantee AVS providers' rights as users of telecom networks, which includes telecommunications firms' potential abusive misconduct in the management of telecom networks.

**Question 9 - In what ways do AVS providers contribute to improving, expanding and maintaining the network infrastructure that supports their services? Can such contributions and investments benefit telecom providers, consumers and the digital economy? How can these benefits be quantified?**

As noted above, AVS providers invest heavily in improving network capacity for the telecommunications networks to improve efficiencies and the overall quality of the consumer experience. There is a mutual interest in ensuring that the content their users are requesting reaches the users efficiently and without a degradation in quality. These investments also enable end users and businesses to develop and invest in high-demand online activities that improve daily lives of users, either through flexible working opportunities, access to educational material, or immersive technologies. In fact, research has shown that investments made by AVS providers in Latin America result in more savings per connection than in any other region—savings that accrue directly to internet service providers.[9] This demonstrates that the money spent by AVS operators in efficient connectivity contributes to the overall ecosystem in a manner beneficial not only to themselves and consumers, but also internet service providers. Therefore, AVS providers and telecommunications providers have different complementary business models and services, but this symbiotic relationship enables the digital ecosystem.

AVS providers contribute to the network infrastructure through:

- **Caching and use of content delivery networks ("CDNs").** Caches refers to the practice of storing a copy of data closer to local ISPs that enables future requests for that data to be delivered faster than if the request was sent to access the data's primary storage location.[10] CDNs deploy networks of caching servers to bring content closer to the end user.[11]
- **Partnerships on submarine cables.** AVS and telecommunications providers also have partnerships to build submarine cables as well as to manage internet traffic, including significant recent investments from U.S. AVS providers to improve connectivity between Brazil, the rest of South America, and the world.[12] These partnerships will continue to increase, also considering trends already visible in the telecommunications industry, such as the virtualization of networks. Networks are shifting from a hardware to a software base, such as through the cloud, with an evident necessity for collaboration between the two industries and the need to support the uptake of cloud services.
- **Tailoring services based on network capacity and device type.** The vast majority of AVS providers—particularly the largest operators—deliver their audiovisual content to the consumer based on the bandwidth available. Streaming providers do not send the same volume of traffic for the same content to each user that demands it—for consumers attempting to access the content

[9] https://www.analysysmason.com/contentassets/4f86a8abd3e749718b4f0514c5d44e64/analysys_mason_impact_tech_companies_investment_-isp_economics_br_oct2022.pdf/ at 42.

[10] https://www.internetsociety.org/blog/2022/09/sender-pays-what-lessons-european-policy-makers-should-take-from-south-korea/.

[11] *See* Expanding Cloudflare to 25+ Cities in Brazil, https://blog.cloudflare.com/expanding-to-25-plus-cities-in-brazil/; https://cloud.google.com/blog/products/networking/introducing-media-cdn.

[12] https://engineering.fb.com/2021/11/11/connectivity/malbec-subsea-cable/ and https://cloud.google.com/blog/products/infrastructure/announcing-the-firmina-subsea-cable ("According to NERA Economic Consulting, the cable will increase internet penetration in Argentina by 6 percent and in Brazil by 3 percent").

with a slower broadband connection, AVS providers generally lower the burden on the broadband network to ensure that the content *does* reach the end user. Similarly, for consumers accessing content on a mobile device, resolution and bandwidth requirements differ from that of fixed networks and suppliers adjust the stream accordingly. Investments in efficient delivery of services by AVS providers based not only on network placement or infrastructure but the actual traffic being sent play a key role in the internet ecosystem and relieving any purported strain on telecom providers' networks.

As previously stated, data show that these investments have a direct effect in assisting telecom providers—this spending saves telecommunications providers over USD 5 billion per year globally, and investments that facilitate peering at domestic peering locations save telecom providers further IP interconnection costs.[13] This is particularly true for Latin America countries as connectivity and IP transit costs are comparatively higher compared to other regions of the world.

**Question 11 - What would be the pros and cons of establishing different network remuneration models, either access fees or termination fees, for telecom providers vis-à-vis AVS providers?**

Establishing a network remuneration model for telecommunications providers that was funded by AVS providers raises numerous concerns and would harm the internet ecosystem.[14]

**First**, a mandatory payment requirement is likely to lead to reduced investment in network architecture, a decrease in innovation, increased prices and worse online experiences for end users,[15] and would not ensure stable, long-term financing for infrastructure.

A fee remuneration model by AVS providers could essentially result in double charging for the same infrastructure. In general, the creation of the fees would ultimately harm consumers: network fees may require AVS providers to reduce investment in their services and/or raise prices; also, network fees would create incentives to telecom companies to reduce network investment and not focus on innovation. Finally, there is no guarantee that the fees will be invested to the benefit of consumers.

It is helpful to look at other countries' approaches to regulating interconnection fees among AVS and telecommunication providers. In 2016, South Korea introduced a mechanism similar to the network fees once again proposed (and previously rejected), by large European telecom providers, and has been

[13] https://www.analysysmason.com/contentassets/4f86a8abd3e749718b4f0514c5d44e64/analysys_mason_impact_tech_companies_investment_-isp_economics_br_oct2022.pdf/ at 6 (estimating savings to be between USD 5 billion and USD 6.4 billion).

[14] https://www.internetsociety.org/blog/2022/05/old-rules-in-new-regulations-why-sender-pays-is-a-direct-threat-to-the-internet/ ("The consequence is a form of Internet fragmentation where end-users can only access online services that have contracted with their ISP or telecom provider. And at the quality and conditions stipulated by these arrangements. In addition, and depending on implementation, these proposals are close to charging 'valuable' services more than others. The expectation that all packets are the same and therefore treated neutrally, is then broken."); https://www.techdirt.com/2022/11/22/the-global-trend-that-could-kill-the-internet-sender-party-network-pays/.

[15] https://blog.cloudflare.com/eu-network-usage-fees/ ("The Internet works best – fastest and most reliably – when networks connect freely and frequently, bringing content and service as close to consumers as possible. Network usage fees artificially disincentivize efforts to bring content close to users, making the Internet experience worse for consumers."); https://itif.org/publications/2022/11/07/consumers-are-the-ones-who-end-up-paying-for-sending-party-pays-mandates/.

revising its regulation ever since.[16] Studies show that the "sending party network pays" regime has the opposite effect to the intended objectives. In Korea, it has reduced investment (fewer CDNs, not more; little use of Internet Exchange Points; reluctance to land new cables), led to lower quality of service (the result of fewer CDNs) and has increased the prices for the end user.[17]

Further, as a direct result of being pressured to pay high network fees to telecom providers, numerous South Korean and foreign content providers degraded their services,[18] moved abroad, or simply exited the market.[19] This led to higher latency rates, with South Korean internet users now having the worst latency experience of all OECD countries.[20] For the same reason, smaller Korean AVS providers and startups increasingly encounter difficulties entering the market or expanding their market share. This has greatly reduced competition for internet access services in South Korea and led to sharp decreases in the level of services and content available to consumers. Surprisingly perhaps, the roll-out of 5G networks in South Korea is also slowing down, even though the country is often perceived as a mobile tech champion by many abroad.[21]

**Second**, a new remuneration model that follows a sending party network pays approach undermines net neutrality principles. Brazil has incorporated network neutrality within Brazilian law through a May 2016 decree regulating the Marco Civil which established rules that prohibit the discrimination or degradation of traffic for commercial purposes (while permitting it for public emergencies).[22] Network usage payments are inherently about arbitrary mechanisms for treating certain data traffic differently and strengthening their control over users' access to the internet. The introduction of network fees will *de facto* lead to the creation of a two-tiered internet. Companies who can pay telecommunications providers to reach their customers will be treated preferentially, for example with better services, cementing their advantageous position. By contrast, AVS providers that cannot – or refuse to – pay, will be discriminated against, with lower quality service.

**Third**, a new remuneration model could prove to be anticompetitive and disproportionately benefit telecommunications providers that provide both internet access and online content services, serving as both a telecommunications provider and an AVS provider.

Two of the three largest fixed broadband providers, Claro and Oi—which hold 22.8% and 11.9% of the market share, respectively[23]—also have online streaming platforms that are prominent in the over-the-top

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

[17] https://researchictsolutions.com/home/wp-content/uploads/2022/11/RIS-Europe-FINAL.pdf

[18] https://carnegieendowment.org/files/202108-KoreanWayWithData_final5.pdf.

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

[20] https://www.oecd-ilibrary.org/docserver/755e2d0c-en.pdf?expires=1662914824&id=id&accname=guest&checksum=6120E5C2732B20A83010C828A73EA916.

[21] https://www.reuters.com/business/media-telecom/skoreas-high-speed-5g-mobile-revolution-gives-way-evolution-2022-05-13/.

[22] Decreto Nº 8.771, de 11 de maio de 2016 [Decree No. 8,771, of May 11, 2016]," CGI.br, May 11, 2016, https://www.cgi.br/pagina/decreto-n-8-771-de-11-de-maio-de-2016/294/.

[23] https://www.bnamericas.com/en/features/spotlight-the-state-of-play-in-brazils-telecoms-market.

market.[24] If AVS providers were required to pay telecom providers for traffic, certain telecom providers would stand to directly benefit at the expense of AVS providers as they bring in revenue from competitors while simultaneously offering a rival product to consumers that also brings in revenue. The content services owned by telecom providers would hold a competitive advantage over content services owned by AVS providers, since they would not incur the charges imposed on competing AVS providers. This concern links to those raised in the net neutrality context, as a remuneration framework would create paid-for fast and slow lanes of the internet—first benefitting paying AVS providers over non-paying providers; but also creating the additional benefit for content offered by telecommunications providers, whose own fast lane would essentially be subsidized by competing AVS providers.

**Fourth**, a new remuneration model that requires payment obligations by a subsect of AVS providers (as alluded to elsewhere in this consultation on inquiries regarding "large traffic generators") could invoke trade conflicts.

Brazil would likely risk breaching its WTO GATS Commitments, under Article V of Annex on Telecommunications.[25] Based on these obligations, Brazil committed to ensure that service suppliers from other WTO countries would be accorded non-discriminatory access to Brazilian networks. Any measure that results in the differential treatment of specific AVS providers from other WTO countries, based on arbitrary distinctions such as traffic volumes, would likely be inconsistent with such non-discrimination obligations.

Lastly, there is no guarantee that a potential remuneration for telecommunications firms will be directly invested in telecom networks or will impact and reduce retail prices. In this regard, there are concerns that subsidies may be diverted to shareholder profits or invested outside of Brazil.

**Question 14 - What is the relationship between network infrastructure holders, such as telecom service providers, and Content Delivery Networks (CDN) holders? Is there a need for regulation on any aspect of this relationship?**

Currently, the exchange of traffic on the internet occurs through voluntary negotiated peering agreements, which contribute to the internet's success and growth and are compatible with the principles of openness, decentralization and flexibility underpinning the digital ecosystem. For decades, this interconnection model has enabled collaboration between AVS providers and telecommunications providers without need for any regulation.

As noted elsewhere in these comments, caching and use of content delivery networks ("CDNs") can reduce demands on the network by bringing the content closer to the end user. Caches refers to the practice of storing a copy of data that enables future requests for that data to be delivered faster than if the request was sent to access the data's primary storage location.[26] CDNs deploy networks of caching

[24] https://www.spglobal.com/marketintelligence/en/news-insights/blog/brasil-streaming-22-pay-tv-operators-go-ott-seek-partners-to-expand-footprint; https://www.thefastmode.com/technology-solutions/28357-brazils-oi-selects-velocix-s-cdn-to-transform-its-streaming-platform-architecture.

[25] https://www.wto.org/english/tratop_e/serv_e/12-tel_e.htm.

[26] https://www.internetsociety.org/blog/2022/09/sender-pays-what-lessons-european-policy-makers-should-take-from-south-korea/.

servers to bring content closer to the end user.[27] Many AVS providers use their own caching servers to ensure quality delivery of the content to the end users.[28] AVS providers of all sizes use CDNs to more effectively reach a wider user base and serve end users.[29]

This is particularly relevant in Brazil. Telecommunications service providers connect with CDNs at internet exchange points ("IXPs"). Established IXPs in Brazil are expanding.[30] For instance, IX.br is a system of over 30 metropolitan interconnection points in Brazil.[31] The Brazilian Internet Steering Committee reported that as of March 2020, 2,500 entities—including telecom providers, AVS providers, CDNs, and other experts from academia, business, and the government—were connected to IXPs run by the agency. According to the ITU, Brazil has well-developed IXP ecosystems and boasts some of the largest IXPs in the world.[32]

**Question 16 - The massive use of telecommunications network resources has provoked discussions about the obligations of large users of the networks. What aspects should be addressed to seek a rational use of the resources?**

There is a lack of evidence of an irrational use of telecommunications networks by AVS providers, considering current and future traffic levels, or current and future needs for infrastructure investments.

Further, the argument that the use of telecommunications networks is not beneficial for telecommunications firms is incorrect since the increasing adoption and usage of the internet adds economic value for telecommunication providers' business models and telecom networks. It must be emphasized that users are the generators for increasing traffic levels, not the AVS providers. Users pay telecommunications providers to have access to telecommunications networks so they can access AVS applications and platforms.

Moreover, a new remuneration model that requires payment obligations by only "large users of the network" could invoke trade conflicts. Longstanding trade obligations articulated in WTO's General Agreement on Trade in Services ("the GATS"), specifically the Annex on Telecommunications, requires member countries to ensure non-discriminatory access to their telecommunications networks for the supply of services by suppliers for other WTO member countries. There is considerable difficulty in envisioning a payment obligation by "large users of the network" which would not be in violation of the WTO commitments.

[27] https://blog.cloudflare.com/expanding-to-25-plus-cities-in-brazil/.
[28] https://openconnect.netflix.com/en/.
[29] https://medium.com/@p.vijaykumar/how-important-is-cdn-for-small-and-medium-businesses-ac6515dd072a; https://www.ignitingbusiness.com/blog/faq-what-is-a-cdn-how-does-a-cdn-benefit-my-small-business-website.
[30] https://medium.com/@p.vijaykumar/how-important-is-cdn-for-small-and-medium-businesses-ac6515dd072a; https://www.ignitingbusiness.com/blog/faq-what-is-a-cdn-how-does-a-cdn-benefit-my-small-business-website.
[31] https://www.cgi.br/noticia/releases/ix-br-reaches-mark-of-10-tb-s-of-peak-internet-traffic/; https://www.researchgate.net/publication/309457954_An_Analysis_of_the_Largest_National_Ecosystem_of_Public_Internet_eXchange_Points_The_Case_of_Brazil.
[32] https://www.itu.int/dms_pub/itu-d/opb/ind/d-ind-global.01-2022-pdf-e.pdf at 70; https://www.cgi.br/noticia/releases/ix-br-reaches-mark-of-10-tb-s-of-peak-internet-traffic/ ("The São Paulo IXP is the largest in the world in terms of the number of interconnected networks and the third largest considering data traffic.").

One of the few non-discriminatory ways to charge for the delivery of internet traffic would be to replicate the monopoly-era settlement regime for telephony: just as every minute of traffic was assessed a uniform charge, so too could every bit be assessed an analogous charge, also uniformly applied, irrespective of source. Regulators have spent the last 20 years trying to unwind this type of extensive regulation, however. Moreover, such a regime would upend decades of organic development of the internet, the world's most efficient information distribution mechanism, and would be challenging to accurately administer.

The alternative to such a complicated and disruptive change would be to target a limited number of companies and assess charges only on a subset of internet content and application suppliers. This approach would result in discrimination based on size: despite the fact that every participant contributes proportionately to network traffic, those above a certain threshold would be required to pay, while those below it would not. And, apart from the violation of net neutrality principles, it is those AVS providers carrying higher volumes of traffic who are already, themselves, investing significantly in capacity, making an additional requirement to pay doubly unfair.

Finally, as a general observation, differential treatment of "large" traffic providers will not address the policy objective of ensuring long-term investment in the networks. If, rather than six providers transmitting most of the traffic there were sixty, or even six hundred, traffic would still be growing and the policy issue would remain exactly the same—illustrating that the policy issue should focus on the key source of demand, consumers, and how that demand can best be served in an efficient and sustainable manner. There is no evidence that market-based retail pricing of internet access does not provide the efficient market signals to guide sustainable investment in network capacity—signals that would be distorted if costs were transferred to select AVS providers. The fact that there are larger drivers of internet traffic does not suggest that those actors should be uniquely responsible for payment. Additionally, as highlighted earlier, targeting larger actors would still have the perverse outcome of creating fast and slow lanes based on an arbitrary definition untethered to the genuine demands of networks.[33]

[33] https://blog.cloudflare.com/eu-network-usage-fees/ ("If the biggest CAPs pay for interconnection, consumer traffic to other networks will be relegated to a slow and/or congested lane. Networks that aren't paying would still use transit providers to reach the large incumbent telcos, but those transit links would be second class citizens to the paid traffic. Existing transit links will become (more) slow and congested. By targeting only the largest CAPs, a proposal based on network fees would perversely, and contrary to intent, cement those CAPs' position at the top by improving the consumer experience for those networks at the expense of all others.").