

Comments on BEREC Draft Report on the IP Interconnection Ecosystem

We appreciate the opportunity to provide feedback on BEREC's draft report regarding the IP interconnection ecosystem ("Draft Report")¹. We agree with the Draft Report's conclusion that the IP-IC interconnection market is generally working well. **We share the Draft Report's concern with the IP-IC interconnection practices of some large, incumbent ISPs, particularly in their home markets. We believe these practices pose significant challenges to the principles of net neutrality, fair competition, and end-user rights.** Numerous examples of end-user impacts, from gaming latency issues to video streaming problems, demonstrate the real-world consequences of these practices for consumers and application providers alike.

We therefore support targeted investigations into the interconnection practices of large, incumbent ISPs that consistently lead to congested transit connections. However, the interconnection problems caused by the large ISPs are isolated examples that can be addressed by the Open Internet Regulation. Thus, we do not believe regulation of the IP-IC interconnection market is necessary in general, and we don't need new regulation to address the problems with large ISPs' interconnection practices. **We urge BEREC to use its authority under the Open Internet Regulation to address these practices and ensure a fair, open, and innovative internet ecosystem for all stakeholders.**

Finally, we strongly support BEREC's continued monitoring of the IP-IC market, particularly given the deteriorating situation in recent years, and believe measures to increase the transparency of IP-IC agreements would be beneficial.

On Chapter 5. Market Developments in IP-IC

We agree that transit can serve as a substitute for direct interconnection, but only in a well-functioning market. As BEREC has recognized in the past, in this case competition in the transit market limits internet access providers' ability to exploit their termination monopoly.

However, IP-IC interconnection practices such as the ones described in Chapter 6 make it impossible for transit providers to fulfil this critical role.

That's because when the transit connections towards certain big ISPs are congested, these connections no longer allow companies to reach the ISPs' internet access customers at sufficient quality. As a result, transit is no longer an alternative to direct interconnection.

This forces companies that need to reach the customers of the large ISPs through uncongested connections to pay the large ISPs termination fees.

¹ <https://www.berec.europa.eu/en/document-categories/berec/reports/draft-berec-report-on-the-ip-interconnection-ecosystem>

Thus, when large ISPs let the settlement-free transit connections into their networks congest, they create a situation where the transit market is unable to limit their ability to exploit their termination monopoly. The fact that some large ISPs can charge fees for direct interconnection that are a multiple of the market price shows that this strategy is successful.

This connection between large ISPs' own interconnection practices and the ability of transit to serve as a substitute for peering should be highlighted more explicitly in this chapter, as well as in Chapter 6.

On Chapter 6. Generic Structure of IP-IC Issues

Analysis of vertically integrated ISPs with Tier 1 transit networks

Our observations align with BEREC's findings regarding the practices of large ISPs that are vertically integrated with a Tier 1 transit provider.

The problems described in Chapter 6 generally seem to be limited to certain, large, incumbent ISPs, and, in particular, their home market (e.g. Deutsche Telekom in Germany).²

These large ISPs use interconnection practices that lead to congestion between these ISPs and transit providers that peer with them settlement-free.

Ultimately, these practices force companies that need uncongested connections to the ISPs' internet access customers to pay them recurring termination fees for direct interconnection.

As BEREC recognizes correctly, some large ISPs force companies requiring uncongested interconnection to buy transit from them, which allows the ISPs to hide the termination fees in the transit fees.

In essence, these large ISPs are abusing their customers as bargaining leverage to extract IP-ICs fees that are far above market average. These practices are infringing on the rights of internet access customers and CAPs.

While these practices have long been an open secret for anyone involved in the IP-IC market, increasingly consumers have experienced these problems in their daily lives.

Yet, the secrecy of the IP-IC market and the common NDAs of such agreements prevent any transparent debate in light of all the facts.

We have heard about these problems from many CAPs. They come to us with these problems because they are afraid of repercussions should they speak out publicly. This dynamic is very worrying and contrary to the open ecosystem that underpins the European net neutrality framework.

Again, we want to stress that the problems described in this chapter are generally limited to only a hand full of very large ISPs. The majority of ISPs do not engage in these practices.

² We understand that France seems to be the exception from the rule.

Geographical Considerations

We urge BEREC to consider the geographical dimension of the IP-IC issues described in Chapter 6, particularly how they may disproportionately affect users and CAPs from different regions:

Customers that want to use internet services from another world region or even another EU country likely suffer disproportionately from the congested transit connection and the IP-IC practices outlined above.

That's because many smaller and medium size CAPs from global south countries or even other EU countries will often be unaware of interconnection problems in another country or of the option to pay for a dedicated IP-IC connection to that ISP.

It is important to stress that the European net neutrality framework provides particular protections against the deterioration of end-user rights based on geographical dimensions.

On Chapter Chapter 7. Bargaining Situation

Large ISPs vs. CAPs

We have observed a significant imbalance in bargaining power between ISPs and content providers, particularly affecting smaller Content and Application Providers (CAPs).

Smaller CAPs, CDNs, or hosting providers in particular are often faced with an undue burden if they want to provide a competitive service on equal terms with Big Tech players. Due to large ISPs' IP-IC interconnection practices, these smaller players are no longer able to simply use one or two transit providers to reach all internet access customers in Europe.

As transit connections towards certain big ISPs are congested on a regular basis, CAPs, CDNs, and hosting providers need to enter into paid interconnection agreements with large ISPs whose customers they want to reach or pay another provider that pays these ISPs.

Smaller players (CDNs, hosting providers, or CAPs) that cannot afford to pay the fees suffer degraded performance on these ISPs' networks. Smaller players that pay generally have to pay higher fees than larger ones.

This situation creates an unfair market dynamic that disadvantages smaller players and potentially stifles innovation.

Large ISPs vs. small ISPs

The largest ISPs in a country are generally the only ones using the strategies described in Chapter 6, and they are the only ones charging termination fees. In this respect, our observations align with BEREC's findings.

That means, however, that in addition to harming consumers, CAPs, as well as the CDNs, hosting providers and transit providers that serve them, these practices also distort competition among the large ISPs that charge these fees because they are able to take their consumers hostage to force companies to pay them, and all the other small and medium ISPs that don't charge these fees.

Of course, the fact that most of the ISPs in Europe are commercially successful and able to invest in their networks without charging termination fees lays to rest large ISPs' claims that charging these fees is necessary to be commercially successful or allow them to invest in their networks, as BEREC has rightly recognized in its contributions to the network fee debate.

Harm to consumers and consumers' inability to discipline large ISPs

Customers of incumbent, large ISP have been complaining about the problems resulting from large ISPs' IP-IC interconnection practices for a long time. Having worked on net neutrality for over a decade, we received many such complaints from both consumers and Content and Application Providers (CAPs) in our role as a digital rights organisation.

From our perspective, the problems have deteriorated in recent years, in particular since the network fee / 'fair share' debate was re-started.

A simple web search³ provides numerous examples of how IP-IC disputes directly affect end-users, particularly in terms of service quality for latency-sensitive applications.

Interestingly, those complaints concern problems that only occur with very large ISPs like Deutsche Telekom. Affected users often experience problems in the evening or on the weekend, when internet traffic is peaking and transit is most congested.

Complaints often concern online games which are sensitive to latency and in many cases don't have the deep pockets to pay the exorbitant IP-IC fees of the large ISPs.

Large video streaming providers don't seem to be immune to these problems, either. CDNs and hosting providers experience similar problems, and these extend to their DNS services.⁴

Often these problems are not temporary, but persist for months, if not years.

ISPs like to claim that they could never engage in these practices, because if their customers experienced problems due to congested connections into the ISPs' network, affected customers would blame the ISP for the performance problems and switch to another ISP.

We strongly disagree with these claims. As complaints in user forums show, most consumers have no idea what causes the performance problems.

While user complaints can be found in the support forums of the ISPs themselves, many users complain on independent sites such as Reddit, Steam and Discord, or in the forums of the content

³ Example of such DuckDuckGo/Startpage/Google searches are "\$name_of_large_isp" + "\$name_of_game" "problem/problems/latency/peering".

⁴ <https://telekomhilft.telekom.de/t5/Festnetz-Internet/Routing-zu-Cloudflare-abends-schlecht-hoher-Ping/m-p/6247572#M1790814>, <https://telekomhilft.telekom.de/t5/Festnetz-Internet/3-Tage-Cloudflare-Probleme/td-p/6313070> Speedtest in that thread with huge packet loss: <https://telekomhilft.telekom.de/t5/Festnetz-Internet/3-Tage-Cloudflare-Probleme/td-p/6313070?attachment-id=115578>.

provider, hosting provider, or CDN.⁵ Often the same problem – involving a particular ISP and a particular CAP – is discussed in multiple forums by multiple users.

When users complain in their ISP's user forum or complain to the ISP on social media, it's common for the ISP to acknowledge the fact that its customers experience performance problems and attribute the problems to the IC-IP situation with that particular CAP, while denying all responsibility for causing, let alone mitigating this problem;⁶ instead, the ISP suggests customers contact the CAP. Often, ISPs employee responding to a complaint simply post a template response blaming the content provider without alleviating the users' problem.⁷

In online discussions, many of these problems are investigated by the technical community. In many cases, these investigations show that the problem only affects the customers of a particular large ISP and traffic streams whose route can be traced to large transit providers like Level3. Sometimes, affected CAPs explain that their service isn't the origin of the problems.

The customers of those large, incumbent ISPs are often faced with an impossible situation. A few users have the technical expertise to assess the underlying cause of their problems; some even understand the source of the interconnection problems and are quite vocal with their criticism of their ISP. However, their voices are countered by the ISP representatives who argue the problems are the content provider's fault and vocal opinions of less informed users.

As a result, most users don't know what to think. Mostly, they are desperate because the problems persist.

The situation is untenable. Customers are paying their ISP to access the whole internet at a certain quality level outlined in their contract. But the real quality they can obtain depends on the particular IP-IC agreement between the CAPs and their ISP.

In our experience, only very few customers terminate their contract with the ISP when encountering performance resulting from large ISPs' interconnection practices. In many cases, customers will not be able to attribute the problems of a particular application or service to their ISP's interconnection practices. As noted above, consumers that complain receive at best conflicting explanations. Even in the few cases where consumers understand that their ISP's interconnection practices are the reason they are having performance problems, switching costs and limited competition between ISPs make switching exceedingly unlikely.

Large ISPs let settlement-free connections with large transit providers congest because it increases their profits by forcing companies to pay them termination fees. If that strategy results in the loss of a small number of customers who switch to another ISP, the loss of subscription fees from a few subscribers is not sufficient to make this strategy unprofitable.

⁵ Gaming Forum: <https://forums.eveonline.com/t/20220819-verbindungsprobleme-deutschland-connection-issues-germany/374148/70> and <https://forums.eveonline.com/t/our-servers-are-fine-everything-is-working-perfect/364523/21>. Corresponding DT forum entry: <https://telekomhilft.telekom.de/t5/Festnetz-Internet/BGP-Flaps-Long-lived-TCP-Connections/td-p/5814336>. Reddit: https://www.reddit.com/r/Eve/comments/uzj3w/our_servers_are_fine_everything_is_working_perfect/ <https://telekomhilft.telekom.de/t5/Festnetz-Internet/Widerruf-nicht-mehr-moeglich/m-p/6026135#commentlist>.

⁷ For example, this explanatory post by Deutsche Telekom is often referenced in other forum responses by Deutsche Telekom employees: <https://telekomhilft.telekom.de/t5/Festnetz-Internet/Peeringprobleme-Probleme-bei-Datuebertragung-hohe-PING-Zeiten/ta-p/4265259>

The fact that consumers are unlikely to switch providers in response to performance problems resulting from large ISPs' interconnection practices is why large ISPs' bargaining power generally outweighs the bargaining power of affected content providers.

CAPs need their apps work well for the large ISPs' customers, which, due to the ISPs' size, make up a significant percentage of the internet access customers in a country. By contrast, large ISPs can afford to take their customers hostage because customers don't generally switch providers.

BEREC's draft report currently does not discuss the impact of consumers' lack of switching on large ISPs' bargaining power. We encourage BEREC to change that.

On Chapter Chapter 8. Relationship between IP-IC and OIR

We strongly believe that current IP-IC practices by some large ISPs violate the Open Internet Regulation (EU) 2015/2120.

We believe that the current IP-IC practices of some large ISPs are effectively creating a system of paid fast-lanes, which is contrary to net neutrality principles:

As the Draft Report points out, the EU's net neutrality framework prohibits paid fast-lanes. If only those CAPs that provide additional monetary compensation to an ISP are available to customers at preferential terms, everybody would see this as a clear violation of the non-discrimination rule. Yet, the current situation with a handful of large, incumbent ISPs amounts to exactly this outcome for all parties involved.

The rights of end-users according to Article 3(1) to use services of their choice irrespective of their location are infringed by the IP-IC commercial practices and agreements of ISPs, which violates Article 3(2) of the OIR. As highlighted by the complaints from consumers quoted above, these violations with interfere with users' ability to access and use the content, applications, and services of their choice "via their internet connection."

The BEREC Guidelines rightly state in Paragraph 6:⁸

"NRAs may take into account the interconnection policies and practices of ISPs in so far as they have the effect of limiting the exercise of end-user rights under Article 3(1). For example, this may be relevant in some cases, such as if the interconnection is implemented in a way which seeks to circumvent the Regulation."

Additionally, the practices outlined above should also be assessed under Article 3(3) of the OIR, in particular in light of the 2021 ECJ judgements on zero-rating.⁹

As the court has held, pricing and commercial treatment of traffic falls under the same obligation of ISPs to "treat all traffic equally". One could now ask the question why the amount paid by CAPs can be made dependent on their market position or why the quality of service as experienced by the consumer can be made dependent on payments received by the ISP from any particular CAP.

⁸ BoR (22) 81

⁹ C-854/19, C-5/20 and C-34/20



We see a clear mandate and obligation of BEREC and NRAs to further investigate the problems created by large ISPs' interconnection practices under the paradigm of net neutrality. There are clearly problems in the market that negatively impact the right of end-users to provide and use applications and services, the freedom to innovate and the internet ecosystem overall.

This investigation should be conducted independently from the ongoing discussion about network fees / "fair share".

Finally, these are isolated problems that are limited to the largest ISPs. Thus, we are not in favor of regulating the IP-IC market in general, and we don't believe any new regulation is needed.

We believe the OIR already provides regulators with the mandate and obligation to intervene in individual cases where large, incumbent ISPs abuse their market position, and we urge them to do so.

Sincerely,

Epicenter.works – for digital rights