Google's response to draft BEREC Report on the Internet Ecosystem

Context and introduction

Google welcomes the opportunity to provide BEREC with feedback on its draft report on the Internet Ecosystem, also titled "the ex-ante regulation of digital gatekeepers".

We read this report in the context of renewed calls by certain large European telecom operators to introduce internet traffic fees.[1] We therefore welcome many of the conclusions that BEREC has reached on the competitive nature of the IP interconnection market. However, there are some points, especially around perceived bargaining asymmetry and possible issues for smaller players in current peering arrangements, where we feel further analysis and context is needed before reaching a final view.

Comment on the 'gatekeepers' element of the report

We note that the report also touches on issues related to internet 'gatekeepers' and possible competition issues that may relate to this. Whilst it is our view that elements of the report mischaracterise our role in the internet ecosystem, we also note that the Digital Markets Act has been designed to deal with the perceived issues and competition concerns that BEREC raises in this draft report. We consider that it would be appropriate to let that legislation take its course. For our views on these issues, we refer BEREC to our submission to the European Council.[2]:

Google agrees with BEREC's framing of the request/response model

We would commend BEREC for its clear explanation of the technical principles of the layered Internet expressed in sections 2 and 3 of the report. It is also pleasing to see that BEREC recognises the request-response nature of Internet services and traffic - contrary to recent claims[3] of certain telecom operators, CAPs do not "generate" traffic but are responding to user demand for their services.

There is a virtuous cycle that currently exists in the online content space. Consumers buy high-speed internet access from telecom operators to reach content and applications. If this content did not exist, consumers would have little need for internet access. Similarly, content providers are reliant on a connected population for their businesses to work. This has delivered

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[1] Please see https://etno.eu/news/all-news/8-news/735-eu-internet-ecosystem.html

[2] Please see https://storage.googleapis.com/gweb-uniblog-publish-prod/documents/Googles_submission_on_the_Digital_Services_Act_package_1.pdf. Part III of the response addresses issues around 'gatekeepers' and 'digital platforms'.

[3] Please see https://www.ft.com/content/68f989f5-96e6-440e-90f4-2a11840d9c99

untold benefits to consumers and users who benefit from unfettered access to a rich library of online content, ensuring media plurality and delivering on the initial aims of the EU's Digital Single Market.

Google's investment in the internet infrastructure is beneficial for us, telecom operators and consumers

Section 5 of the report highlights Google's contribution to network infrastructure. Our investments include subsea cables, large data centres for storing content; purchased capacity from Internet backbone providers to transport the data over long distances; peering and content delivery infrastructure at the edges of the network and beyond where we interconnect with Internet Service Providers who carry traffic demanded by their customers the vital last few miles to the user.

We have established this network as an alternative to transit, climbing the "ladder of investment" as our needs have scaled. We aim to interconnect with operators as close to users as possible, to minimise costs for network operators, and to provide the best user quality of experience, while respecting Open Internet principles. While our network has multiple transit connections to enable universal reachability to all parts of the Internet, and ensures that any interconnection relationship with Google is entirely voluntary for both parties, the vast majority of our traffic is exchanged via direct interconnections between our network and partner networks around the world - either via peering at over 100 "points of presence" in 28+ countries, or using our Content Delivery Network platform "Google Global Cache" which is hosted with over 1,000 ISPs in almost 200 countries.

To illustrate our recent investments, from 2015-2018, we announced that we had spent $30 billion in improving our infrastructure, and as we said at the time, we weren't done. Since then, we have continued to make significant capital expenditures in our infrastructure. For instance, in Germany, Google recently announced another 1 bn € investment by 2030, including investment in new cloud infrastructure.

It should be noted that our investments in this space also extend to designing our services and products in a way that supports telecom operators to effectively manage their network and reduce costs, with Google and Youtube at the forefront of finding and investing in technical solutions. For instance, YouTube compresses video data so it can be efficiently transmitted across the Internet. We work tirelessly on increasing the streaming quality of the video that can be transmitted in as little data as possible, optimising existing compression technology and championing new approaches. We also tune the bitrate of a video to network conditions, adjusting for when less bandwidth is available to the user. We do not send any more data than is required to optimise the quality of experience for the user's device and connection.

Areas where we would welcome further clarity from BEREC

The report should consider the significant value that Google brings to European operators and their customers

Consumer demand for content provided by CAPs drives revenue for telecom operators. As BEREC itself noted in 2014, "Ultimately, it is the success of the CAPs...which lies at the heart of the recent increases in demand for broadband access (i.e. for the ISPs very own access services)".[4] A more recent study by the Communication Chambers also concludes that "data growth is good for telcos given that the incremental costs of data are negligible for fixed access and low and falling for mobile access".[5]

Whilst BEREC's draft report briefly touches on the interdependent relationship between telecom operators and CAPs, it does not articulate the other wide-ranging benefits that CAPs such as Google offer telecom operators through partnerships. For instance, Google has relationships with numerous telecom operators in Europe including:

- **Telefonica**: Partnership spanning a number of areas including Android and Cloud - where Telefonica have publicly announced a resale partnership with Google.
- **Deutsche Telekom**: Multi-faceted partnership including a wide-ranging joint announcement earlier this year from both CEOs covering our Sovereign Cloud partnership, Messages, and DT's choice of Android TV as their group standard TV Operating System. We have also recently started a partnership on network transformation including 5G. Other partnerships include Pixel, Android and digital marketing.
- **Vodafone**: Google Cloud is Vodafone's data analytics partner of choice, publicly announced in May 2021, and Vodafone recently confirmed publicly the business benefits of that partnership. On the consumer side, Vodafone is a significant Pixel partner and also works with us on joint infrastructure investments including submarine cables.
- **Orange:** We have a wide range of partnerships including a joint 5G/Edge innovation centre in Paris together with Google Cloud, joint infrastructure investments including the Dunant transatlantic submarine cable, consumer partnerships with Android, and Android TV.

Google continues to develop closer partnerships with these and other telecom operators across Europe, supporting them in their ambitions to grow core revenue, enhance the

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[4] Please see: https://www.berec.europa.eu/sites/default/files/files/document_register_store/2012/11/BoR%2812%29120rev.1_BEREC_Statement_on_ITR_2012.11.14.pdf, p.3

[5] Please see: http://static1.1.sqspcdn.com/static/f/1321365/28531995/1657135490797/Internet+Traffic+Tax+1.pdf?token=UdPjJdmUxkVzZr7iqTQlY879cA8%3D, p.5

efficiency of their technology and operations, and expand into new business areas. Through these partnerships, telecom operators are increasing revenue, reducing churn, growing subscriber satisfaction, and exploring new business opportunities.

In short, the CAP and ISP relationship is mutually beneficial, across all CAPs large and small. As an example, Liberty Global CEO Mike Fries has said publicly *"Customers who have Netflix watch more TV, pay us more, churn less and are happier"*[6]

BEREC's initial conclusion around the impact of IP Interconnection on smaller CAPs is unclear

BEREC helpfully sets out that 'transit and interconnection players do not seem to pose major difficulties to competition'. However, the report goes on to suggest that some possible issues may arise in the future that may negatively impact smaller players.

On p.48 of the draft report BEREC states "smaller players might end up being forced to use transit" if large telecom operators and CAPs are not present at an internet exchange. Generally speaking, CAPs that have significant networks are present at many Internet Exchanges, have relatively open peering policies and are willing to work with both large and small ISPs to deliver content demanded by users. It is large incumbent ISPs who typically do not connect to Internet Exchanges, and/or have restrictive peering policies. More specifically, Google has a generally open peering policy for their network, which means it is willing to interconnect with any operator, at 90+ Internet Exchanges or 100+ interconnection facilities worldwide (subject to a few technical, commercial, and legal constraints). Google does not charge for peering for Internet traffic (we offer a paid Cloud Interconnect service for private enterprise network connectivity to Google Cloud, but this does not relate to Internet traffic). Google's approach helps to reduce latency, improve performance, and reduce costs for network operators to deliver the traffic demanded by their customers.

On p.65 the draft report, BEREC states that small CAPs may not be able to provide the same quality of service to their internet-based services if large CAPs "increasingly use dedicated, private capacity functioning as a backbone in parallel to the shared internet infrastructure". Our view is that CAPs' investment in network, interconnection and CDN platforms is a reasonable optimization for delivery of content demanded by users, improving quality of experience for users, and reducing costs for network operators. The capacity freed up on core and backbone networks because of this investment by large CAPs can ensure that all content, including that from small CAPs, obtains a better quality of experience for users. Furthermore, commercial CDN platforms such as Akamai and Cloudflare are available to CAPs of all sizes - and Cloudflare even offer a "free tier" - so it should not be considered that small CAPs are necessarily at a disadvantage in Internet content delivery. The use of peering and CDN platforms improves the quality of experience for everyone.

[6] Please see: https://twitter.com/libertyglobal/status/913028997482778625

More recently a 2022 WIK study found that the IP interconnection market "generally works well" and that the "transit and peering market had adapted to traffic growth" and other developments.[7]

There is insufficient evidence to substantiate BEREC's view on "differences in bargaining power"

On p.64 of the draft report, BEREC helpfully notes the interdependent relationship between telecom operators and CAPs. However, it also repeats a troubling point that certain telecom operators have made recently on "differences in bargaining power".

We consider there is insufficient evidence in this report to support this point. It is common knowledge that a few large European incumbent ISPs already extract payment from certain CAPs and possibly even transit providers (in a reversal of the usual flow of funds on the Internet), which suggests that any imbalance in bargaining power may be in favour of large incumbent ISPs with significant termination monopolies. Perhaps this is what is intended by this sentence, but it is not clear.

A recent report by the Communications Chambers also refutes this argument and calls it a 'red herring'. It notes that "available evidence does not support" claims that there is "asymmetric bargaining power in relation to transit and peering in favour of content and application providers". The report goes on to state that in countries where the sending party network pays principle has been introduced (South Korea) "both price and quality outcomes in the market have deteriorated. These are not outcomes Europe should seek to emulate".[8]

The centrality of net neutrality in this debate

Interconnection on the Internet has, for the past 25 years, been performed in a decentralised and open way that characterises the Internet as a whole. Interconnection has largely been carried out by technical network engineers, from across the industry, who have worked together to reduce costs, improve performance, resilience and reliability, and maintain the permissionless innovation that has made the Internet such a success.

Proposed changes to replace the current Internet interconnection model with a "sending party network pays" model turns the Internet on its head. It would put telecoms operators back in the position of being the gatekeepers to reaching users, requiring regulatory intervention in a

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

[8] Please see: http://static1.1.sqspcdn.com/static/f/1321365/28531995/1657135490797/Internet+Traffic+Tax+1.pdf?token=DsC9RENwGJOh3iwSFHDy2PGluSU%3D, p.14.

market that, as described above, is believed to be functioning well. The gatekeeper position, through the termination monopoly that telecoms operators hold, is the reason that Europe's Network Neutrality legislation was put in place - to ensure that users can access the content and services of their choice, as is stated in many European texts including the Citizens Rights Directive. European telecoms regulators have spent the past 25 years trying to unwind the regulated termination rates that characterise the voice market. It would be in stark contrast to current European policy principles to decide to impose such a model on the Internet.

Google strongly believes that the current Network Neutrality model in Europe works, and, because of this, the current interconnection model works. Fundamentally, consumers pay their telecoms operator for a connection to the Internet, to all internet content and services, not just those services that their telecoms operator decides to conclude commercial agreements with. This is thanks to the European Net Neutrality framework. We believe it is important to consider and maintain these principles in future regulatory work on IP interconnection.

Concluding thoughts

Google would be pleased to engage in further discussions with BEREC on any of the points made in this report. We would be keen to understand the evidence base underpinning BEREC's initial findings around bargaining asymmetry and the supposed poor experience of smaller CAPs in current peering arrangements. In reaching its final conclusions on the IP interconnection space, we would encourage BEREC to consider and reflect the centrality of net neutrality. We would also invite BEREC to consider the multi-layered and mutually beneficial partnerships between telecoms operators and CAPs when considering any perceived inefficiencies.