

## About Cloudflare

Cloudflare is a leading cybersecurity, performance, and reliability company on a mission to help build a better Internet. Cloudflare uses its 270 data centres in more than 100 countries to screen traffic for cybersecurity risks and to cache content at the network edge to improve website performance. Examples of our services include protection against Distributed Denial of Service (DDoS) attacks, protection against malicious bots and crawlers attempting to scrape or alter the content of websites, a Content Delivery Network (CDN) service, as well as DNS (Domain Name System) services to enhance reliability of our customers' networks and Internet properties. We are uniquely positioned in that in addition to being a CDN we are also classed as a Content Application Provider (CAP) setting us aside from competitors in the market. Our Zero Trust platform and products also enable our customers to add another layer of security, helping them to achieve further resilience across their organisations.

We have a fast growing European presence, including in the UK, where we currently have over 400 employees working in our London office, in a variety of roles including engineering and R&D.

We very much appreciate the opportunity to comment on Ofcom's Consultation on Net Neutrality and bring clarity to how net neutrality rules impact the operation of communication networks. Whilst the bulk of our views on the Government's proposal is fully in line with overall industry responses to this, and well captured in techUK's submission, we want to take this opportunity to make a few additional remarks. These primarily focus on traffic management and Ofcom's overall approach to net neutrality in this context.

### **I. The importance of latency in Internet connections**

At Cloudflare, our mission is to help build a better Internet. We believe the Web should be open and free, and that all websites and web users, no matter how large or small, should be connected in a way that is safe, secure, and fast. As a result, we believe in regulatory approaches that encourage a better, more accessible, and more affordable Internet experience for everyone. Our recommendation is that Ofcom should exercise caution in allowing ISPs to offer "premium quality" Internet access plans. If "premium quality" Internet tiers become commonplace, we are concerned that it could create a new Digital Divide— separating those who can afford to access all the Internet has to offer from those who can't afford it and get the "slow lane". We believe the focus should instead be on identifying ways to improve the Internet for everyone.

The consultation posits that traffic management will need to play a greater role in meeting the

demands on networks in the future, and proposes a solution of differentiating retail offers on the basis of qualities like latency and jitter. We believe an approach that institutionalizes latency for those with fewer resources, rather than identifying alternative means to address congestion and network demands, is short-sighted and creates the wrong incentives. Whilst latency is currently part of the conversation about the quality of an Internet connection, our prediction is that it will become central to measuring an Internet connection in the near future. It may even be that the term “speed”, currently used to refer to the throughput of the connection, becomes a measure of latency, or the time it takes a computer to request and receive data from a provider of content and services. Increasingly, we use our computers as client devices, accessing and interacting in real-time with services that are on the Internet. It’s increasingly rare that users run programs on a desktop computer that doesn’t need an Internet connection.

A common misconception is that low-latency Internet connections are only important for video conferencing, gaming, and forthcoming virtual reality applications. The truth is low-latency is important to most things we do on the Internet. More than ten years ago, researchers at Google [published](#) a paper with the seemingly heretical title “More Bandwidth Doesn’t Matter (much)” showing there are linear returns to better latency on the time it takes to load a webpage. Cutting latency in half leads to a webpage loading almost twice as fast. By contrast, in this experiment, increasing the throughput of the connection above 5Mbps had negligible impact on the webpage load time.

Another important set of products that are latency sensitive are security products. Cloudflare knows this area well because we offer these products to our customers. As more security offerings move to the cloud, it is critical that all Internet users have low latency to those offerings. For example, employers with remote employees, working at home on their home Internet connection, may opt to use security services that remotely execute browser code (“isolated browsers”), or protect Internet traffic from security threats. If a consumer is on a connection that frequently congests, resulting in high latency, jitter, and packet loss, those security services could become downgraded resulting in a poorer service.

Yet another case is telehealth, which is related to videoconferencing in general. As many now know from working at home during the pandemic, jitter, or the variability in the latency of the connection, is critical to a usable – not to mention enjoyable – Internet experience. In our view, a new class of Internet where it is expected that consumers who cannot afford to pay for high end services would have degraded or even a lack of access to these critical services is problematic.

## **II. Net Neutrality and traffic management for addressing congestion**

In our view, the consultation does not make a convincing case that these “clarifications” of Net Neutrality rules are necessary, will lead to consumer benefits, or preserve Internet openness. The Consultation says clearly that “there has been limited need to address congestion” in ISP networks, yet goes on to propose these clarifications when “considering how the demands on networks might evolve going forwards.”<sup>1</sup> Our concern is this proposed change runs against the old adage of “if it isn’t broken, don’t try to fix it”.

---

<sup>1</sup> [Ofcom Net Neutrality Consultation](#), [para. 6.2-6.3]

It's possible, for example, that this new interpretation of the Net Neutrality rules could directly produce more congestion events that would lead to degraded service for regular people. In the current framework, ISPs are successfully maintaining their networks to prevent congestion events and degraded service. Under a new interpretation, an ISP may have less incentive to avoid congestion events. After all, if congestion events do occur, that's an upsell opportunity for some of their customers; and to the ones that don't pay for the "premium service" they would just need to understand that congestion events will continue to happen.

The consultation notes that "because packages offering different quality of service would require some traffic prioritisation where there is network congestion, some ISPs either thought that the net neutrality rules did not permit such differentiation, or they were unclear whether it was permitted."<sup>2</sup> Those interpretations are understandable. The Net Neutrality Regulation says:

The first subparagraph shall not prevent providers of internet access services from implementing reasonable traffic management measures. In order to be deemed to be reasonable, such measures shall be transparent, non-discriminatory and proportionate, **and shall not be based on commercial considerations** but on objectively different technical quality of service requirements of specific categories of traffic.<sup>3</sup> (emphasis added)

Based on this section, allowing premium quality retail offers which are, in effect, prioritization of traffic during congestion events based on extra payment, is more of a change to the Regulation rather than a clarification.

Although we recognise that in certain instances consumers and businesses are willing to pay more for better quality access to products and services, we take issue with the notion that might be acceptable to provide people who pay less a less reliable, secure and fast Internet. Ofcom's proposal of ensuring that the framework that is in place is transparent and open is important, and we welcome this consultation in that context. However, we would urge Ofcom to revisit its stance on retail offers in the spirit of preserving the net neutrality rules and goal of preserving consumer access to an open, and usable, Internet.

At Cloudflare, we are primarily concerned that allowing ISPs to offer retail products with different quality levels - with differentiation based on latency, jitter or packet loss- will inadvertently create so-called 'fast and slow' traffic lanes. This, in our view, may lead to certain classes of users losing out. We do also appreciate that Ofcom recognises that as Internet services become more sophisticated over time, ISPs will enjoy a greater information advantage over consumers, which would undermine consumer choice and lead to vulnerable consumers getting a poorer service. This is especially important in the context of the increased use of the Internet for critical support to those in need, for instance through health applications. We would therefore urge Ofcom to be cautious in changing what has been a successful framework protecting the open Internet and consumers.

---

<sup>2</sup> 6.28

<sup>3</sup> Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and retail charges for regulated intra-EU communications and amending Directive 2002/22/EC and Regulation (EU) No 531/2012, <https://eur-lex.europa.eu/legalcontent/EN/TXT/?uri=CELEX%3A02015R2120-20201221> [accessed 23 Jan 2023].

### **III. Conclusion**

At a time of increasing concern that vertical integration of technology companies is harming openness and competition, allowing for retail packages which offer different levels of quality such as latency, jitter, and packet loss could have the opposite of their intended effect, slowing the Internet for many end-users, except those that are willing or compelled to pay.

To the extent that Ofcom believes that there might be additional pressure on the networks of the future, we believe it should encourage ways of addressing congestion that do not make services that demand lower latency inaccessible to large swaths of the population.

We strongly recommend against punching holes in the Net Neutrality framework and regulation which has done a good job protecting consumers and the Open Internet; instead, initiatives that strengthen the global routing system and foster more interconnection will result in a faster and more resilient Internet and better quality of service for consumers in the United Kingdom.