Consultation response form

Your response

Question	Your response
Question 1: Functioning of the net neutrality framework **(a) Which aspects of the current net neutrality framework do you consider work well and should be maintained? Please provide details including any supporting evidence and analysis.** **(b) Which aspects, if any, of the current net neutrality framework do you consider work less well and what impact has this had? What, if any, steps to you think could be taken to address this and what impact could this have? Please provide details including the rule or guidance your response relates to and any supporting evidence or analysis.**	Cisco considers that the current net neutrality framework in the UK has worked well to date in practice and has struck a good balance between ensuring an open internet which does not place unnecessary restrictions on usage whilst acknowledging that 'reasonable' traffic management measures are permitted by ISPs to ensure necessary quality of service levels can be attained and specialised services can be provided for without having a detrimental impact on the quality of internet access for end users. However, we would encourage – whilst continuing to maintain this balance – pragmatic approaches that would allow for more creativity and innovation in how internet providers offer services to end customers. We would also like to encourage Ofcom to explore opportunities for the UK to become a global leader in supporting business investment in a wide range of IoT devices with heterogenous connectivity needs with a view to boosting productivity and sustainability across the country. Ensuring a regulatory framework that encourages investment and maximises the value that technology can bring to businesses should be prioritised. We see this as the major market trend over the next decade that Ofcom's leadership globally on would be most welcome.
Question 2: Use cases, technologies, and other market developments **(a) What, if any, specific current or future use cases, technologies or other market developments have raised, or may raise, particular concerns or issues under the net neutrality framework?** **(b) What, if any, steps do you think could be taken to address these concerns or issues and what impact could this have? Please provide details of the use case, technology or market**	Use of the internet continues to evolve rapidly. The pandemic has catalysed the use of digital connectivity across many different use cases. As ways of working, people's social lives and delivery of essential public services increasingly drew on digital networks during 2020, overall and peak hour traffic levels over these networks increased rapidly. All of these changes have taken place under the current net neutrality regime without harm to consumers or innovation.

development and the rule or guidance your response relates to, as well as any supporting evidence and analysis.	Cisco's new Hybrid Work Index, for example, highlights how remote working and reliance on Webex and other video meeting technologies has become much more prominent. The Index shows a 1.5x increase in VPN and secure access applications protected by Cisco's Duo security service over a one-month period as the realities of the pandemic took hold in terms of remote working between February and March 2020 (a level which has increased and been held at a high level since). The Index also shows a 160% increase from May 2019 to July 2021 in the number of devices used by remote workers deployed on Cisco's Meraki networks. Furthermore, network usage on business premises also increased significantly from March 2020 as businesses leveraged video collaboration platforms such as Webex to engage with customers, remote workers, suppliers and other stakeholders. Cisco's Broadband Index, based on a survey of 13,617 workers in the UK, Germany, France, Italy, Poland and Russia in May 2021 highlighted the importance workers now place on having a reliable, fast internet connection. 72% of respondents in the UK called for more investment in their internet infrastructure and 48% thought that Government should see the internet as a critical infrastructure on a par with water networks and energy infrastructure. Over half of those interviewed in the UK said they spent 7 hours or more online. 71% of workers wanted to see UK connectivity investment to allow truly remote working options. Cisco's Future of Secure Remote Work report showed that whereas 18% of UK organisations had more than half of their staff working remotely pre-COVID, this figure shot up to 85% during the pandemic. Despite the sudden and steep digital shift described above, networks in the UK coped well, backed by innovations and investment in both access technology and throughout network architectures. And, therefore, we do not see any strong need to amend the existing approach in terms of net neutrality in order to support remote and hybrid working.

	The period has also seen a great deal of innovation in network use from video-based school lessons and GP appointments to large increases in entertainment services being consumed in the home to a rapid increase in IoT type devices in the home, car and workplace. Likewise, all of this has been supported by the current net neutrality framework without one type of service having a major impact on the ability for others to operate effectively – a strong recognition that the balance outlined above has broadly been the right one to date. The coming period is likely to see further significant progress in devices, use cases and access technologies. Build out of public 5G networks will be a major technological development over the next 10 years. With expected broader geographical coverage, faster speeds and lower latency, 5G investment is likely to lead to a further acceleration of the digitisation of work, education, public services, entertainment and social lives. It will also spur on innovation in terms of types of services offered to consumers with many of these drawing on quality, coverage and speed enhancements. Although we don't see this as a reason to amend net neutrality rules at this stage, we anticipate that enterprise use of 5G capabilities such as network slicing for dedicated use cases will become more prevalent. Developments here should be monitored, but we expect these services to come to market without adversely affecting open internet services. As Wi-Fi6 uptake continues to grow, consumers will see significant improvements in throughput speeds, less congestion and will be able to better serve IoT devices. This should again serve to facilitate further innovation and investment in devices and internet infrastructure that allows the capabilities of Wi-Fi6 to be maximised, supporting the broad goals of net neutrality rules – supporting an open internet whilst facilitating quality of service for specialised services.

	A further technology and market development to take into account is the ongoing shift towards cloud-based services, again stimulated by the pandemic to some extent. Highlighting this, Duo saw a 40% increase in average daily authentications to cloud applications from March to June 2020. Increasingly, businesses are turning to cloud (and mixing different cloud providers along with types of cloud – private, public, or hybrid depending on application types) to host, manage and access applications. Access to these cloud-based services should be recognised as increasingly forming a critical back-bone of the UK economy. Access and management of cloud services could be another ongoing development to monitor from a net neutrality point of view. Finally, we anticipate growing interest in smart infrastructure – leveraging digital connectivity to monitor the performance of physical infrastructure such as roads, rail networks, cities or water and energy networks. IoT devices are being increasingly used to predictive maintenance (eg to detect leaks in water networks), to enhance experiences (eg passenger Wi-Fi and improved entertainment offerings on trains) or safety (eg on smart motorways). All these applications require attention in terms of the quality of service offered in order for them to be successfully deployed. As stated above, Cisco is strongly supportive of an open and inclusive internet and it will be important that this approach continues. A great deal of innovation and change in use of digital connectivity has taken place over the past five years and, although we would be supportive of pragmatic changes that support innovation in specific services, we don't see any need for major changes to the overall balance of the net neutrality framework.
Question 3: Value chain **Are there particular business models or aspects of the internet or other value chains that you think we should consider as part of our review? Please explain why, providing**	

details including any supporting evidence or analysis.	
Question 4: International cases studies **Are there any international case studies or approaches to net neutrality that you think we could usefully consider? Please include details of any analysis or assessments.**	
Question 5: Guidance and approach to compliance and enforcement **Are there specific challenges with the existing guidance that we should be aware of (e.g. ambiguity, gaps)? Assuming the rules stay broadly the same, which areas could Ofcom usefully provide additional clarity or guidance on? Please provide details.**	
Question 6: Annual report **Do you find Ofcom's annual monitoring report useful or are there any changes you think we could usefully make either to the content or how we communicate this?**	
Question 7: Other **Is there any other evidence or analysis that you are aware of and/or could provide to aid our review?**	