CDT Provides Answers to Questions on Internet Neutrality

Centre for Internet and Society | 2011-04-26

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Pranesh Prakash of CIS asked David Sohn of CDT a few pointed questions on the emerging hot topic of 'Internet neutrality', and received very useful responses. Those questions and Mr.

As part of the Centre for Democracy and Technology's (CDT's) excellent "Ask CDT" initiative, we were provided the opportunity to clear up some of our doubts around "net neutrality" (which CDT prefers referring to as Internet neutrality rather than network neutrality) by asking an expert: David Sohn, CDT's Senior Policy Counsel. Reproduced below are the questions that I asked (inset and in gray), and David's replies (provided below each question). Some of the questions I asked below were doubts that I had, while some others are instances of donning the roles of devil's advocate. We hope this will be helpful in clarifying doubts that some of the readers of this blog have had as well.

> 1a. "As far as I can understand, content distribution networks (CDNs) such as Akamai, don't really fall within your understanding of violations of Internet neutrality. Why not? In what cases is 'spending more to get faster speeds' permitted for content hosts? Since not only specialised companies like Akamai, but regular Tier 1 companies like Level3 and AT&T also engage in CDN-like behaviour, does it make it more liable to illicit/ underhand/non-transparent service differentiation techniques?"

1a. That's correct, CDNs don't violate either Internet neutrality principles or the FCC's recent rules. I talked about this at some length in a blog post a couple years ago. The short answer is that Internet neutrality does not aim to guarantee that all online content and services will work equally well, but rather to prevent ISPs from exercising "gatekeeper" control with respect to their subscribers. Thus, content providers who have money can purchase various advantages – for example, more or better servers, upgraded software, or caching services from a CDN such as Akamai. Significantly, things like servers and caching are available from competitive sources; no supplier has gatekeeper control. In contrast, priority treatment on the transmission facilities serving any given Internet user is an advantage that only that user's ISP could provide. Another difference is that when one content provider purchases caching, it doesn't slow anybody else's traffic (indeed, it could speed it up, since it may

help reduce overall network congestion). By contrast, when an ISP designates favoured traffic for priority transmission, non-favoured traffic by definition is de-prioritized. Think about a line of "bits" waiting in a router queue – if you let some bits "cut in line," it inevitably lengthens the wait for those who don't get to cut. Given CDT's general comfort level with CDNs and the existence of competitive offerings in the marketplace, I'm not too concerned about who provides the service (Akamai, Level3, AT&T, etc.). It doesn't seem to be a case of the ISP leveraging its unique control over access to subscribers.

> 1b. "A large part of the claims of Internet neutrality supporters are founded on the basis of 'dumb networks', which can also be seen as a reformulation of the end-to-end principle. A question arises, which is often posed by the likes of Dave Farber, Bob Kahn and Robert Pepper: why should we stick dogmatically to the end-to-end principle when embedding 'intelligence' in the core is/will soon be a viable option ***without*** jeopardising the simplicity of the Internet? If you are fine with CDNs, then are you fine with a partial supplanting of the dogmatism of the end-to-end principle (because, after all, CDNs are in a sense, intelligence in the core rather than in the edges)?"

1b. I don't think that supporting Internet neutrality requires a dogmatic opposition to any and all built-in "intelligence" in the network. Certainly a strong case can be made for handling certain network management matters, such as some cyber security issues, at the network level. I get concerned on neutrality grounds not by the mere existence of "intelligence" in the core, but by the use of that intelligence to make judgments and decisions about which applications and services are most important or most in need of special treatment – as opposed to remaining application-agnositic or, in the alternative, leaving the decision to end users. Intelligence that is put in the service of end users, allowing the users themselves to make judgments about what to prioritize, does not concern me at all. But if the network-level intelligence results in broader reliance on centralized evaluation and categorization of the type or content of Internet communications, and centralized decisions about what to favor or disfavor, then I think it poses a neutrality problem. The bottom line is, the idea that networks could benefit from some built-in intelligence does not argue for giving ISPs unbounded discretion to discriminate among traffic. Indeed, a network that empowered users themselves to determine the relative priority levels of their traffic based on their individual needs would be far "smarter" than on in which ISPs make broad, across-the-board choices.

> 2. "What is the bright-line rule that separates some IP-based networks that are 'private' (and hence free to do as they please), and others that are part of the 'Internet' (and hence need to follow Internet neutrality)? Where does IPTV fall? (While answering that question, think not only of present-

day IPTV, but keep in mind its potential applications.) Where do 'walled gardens' of the WWW fall?"

2. In CDT's view, Internet access service provides a general-purpose ability to send and receive data communications across the Internet. Other services could be exempt from neutrality rules if they serve specific and limited functional purposes and have limited impact on the technical performance of Internet traffic. CDT's comments to the FCC went into considerable detail – see, for example, the comments we filed in October. The FCC rules took a similar but not identical tack, saying that Internet access services are services that provide the capability to send and receive data "from all or substantially all Internet endpoints" or that provide a functional equivalent of such a service. In any event, the question of how clear the line is between Internet access services that are subject to neutrality rules and other services that are not is an important one that will bear close watching over time. As for IPTV, it offers a specific function – access to video programming – rather than general purpose access to the entire Internet. So IPTV can be distinguished from Internet service. As for "walled gardens," it likely would depend how large the garden is. If the garden seeks to offer a wide enough variety of sites that it can be used as a substitute for Internet access, then the FCC could choose to apply neutrality rules. At some point, a garden can become big and general-purpose enough that it is effectively serving as a non-neutral version of an Internet access service. That kind of end-run around neutrality rules shouldn't be allowed.

3a. "Should Internet neutrality be kept at the level of non-enforceable (but still important) enunciation of principles, or should they be enforceable laws? In either case, who has the authority to regulate Internet neutrality, given the non-territoriality of the 'Internet' (and especially keeping in mind the direction that ICANN's been taking with things like the Affirmation of Commitments). Why should the FCC have such powers? Why should any American governmental body have such powers?"

3a. It is important to have some enforceable rules. The FCC enunciated principles back in its 2005 broadband Policy Statement – but when the agency tried to act after Comcast violated those principles, a court ruled that the FCC had no ability to do so. Enunciated principles are of little value if ISPs are free to violate them without consequence. For U.S. Internet users, I think the FCC is an appropriate agency in which to lodge the authority to police neutrality violations; the FCC has a long history of working to ensure that providers of physical communications infrastructure do not abuse their position. And since the focus is on the provisions of physical communications connections, I don't the the territoriality issue you raise is a major problem. The United States has the authority to establish rules for companies providing last-mile

communications links to U.S.-based subscribers. The Internet is of course a global medium, but the endpoint connections have a clear geographic location.

> 3b. "If Internet neutrality is really about ensuring fair competition (so an ISP doesn't promote one company's content), then why not just allow competition law / anti-trust law to ensure that fair competition? What are the lacunae in global competition laws that necessitate the separate articulation of 'Internet neutrality' principles/rules?"

3b. The ability of antitrust law to protect Internet openness is pretty limited. Absent a clear anticompetitive motive, network operators likely could curtail Internet openness in a variety of ways without running afoul of antitrust law. Antitrust's prohibition against anticompetitive conduct is a far cry from any kind of affirmative policy to preserve the Internet's uniquely open network structure. Nor can antitrust law take into account the major non-economic reasons for maintaining an open Internet, such as the impact on independent speech and civic empowerment. Finally, as a practical matter, antitrust cases tend to drag on for many years. Individual innovators and small startup companies – key beneficiaries of Internet openness – are unlikely to be in a position to bring antitrust cases against major network operators.

> 4a. "One of the strongest arguments of anti-Internet neutrality folks is that adoption of Internet neutrality principles/rules will ensure that it is only the consumers who foot the bill for bandwidth consumption, and bandwidth hogs (like NetFlix) don't ever pay. This, they say, is unfair on consumers. How do you respond to this?"

4a. First, I question the statement that "bandwidth hogs like NetFlix don't ever pay." For starters, NetFlix buys a huge amount of bandwidth connecting its servers to the Internet. Once on the Internet, its traffic is carried onward pursuant to peering agreements between the ISPs and backbone providers. When NetFlix traffic volume grows, it may trigger new payment demands between carriers, as we've seen in the recent dispute between Comcast and Level3. But the bottom line is, nobody is forced to carry any traffic they haven't contractually agreed to handle. Of course, it is true that NetFlix doesn't make payments to (for example) AT&T for delivering NetFlix traffic to AT&T's customers. That might seem unfair if you think of NetFlix as a "bandwidth hog" eating up AT&T's capacity. I believe that is the wrong way to think about it. NetFlix has no ability to forcefeed traffic onto AT&T's network. Every bit it sends was requested by an AT&T subscriber. So if there are "bandwidth hogs" here, they are the end users – they are the ones that pull all those bits onto AT&T's network. And they have already paid AT&T for the ability to get those bits. I would add that when individual users choose to download huge volumes, I have no problem with the ISP charging them more. Second, you suggest that

it may be unfair to ask consumers to foot the full bill for their connectivity. But the Internet is such an open and innovation-friendly platform precisely because it is so user-driven. This user-centric focus could change if ISPs start thinking of themselves as providing services not just to end user subscribers, but also to non-subscribers such as large online content providers to whom the ISPs do not directly provide bandwidth. The ISPs would then have divided loyalties; rather than just focusing on empowering users, they would be collecting fees to steer users in particular directions. Sure, in other contexts there are examples of "two-sided markets" in which end users foot only part of the bill. Newspapers are often cited. But including paid advertising in newspapers doesn't have much impact in how the overall product is perceived or presented to users. In contrast, ISPs charging content providers for special transmission priority would be akin to a newspaper in which advertisers pay not just to place ads, but also to influence where the substantive articles appear – which ones go on the front page and which on the interior, for example. In turn, content providers of all stripes would need to think about striking deals with multiple ISPs – something that is not necessary today. In the end, turning the Internet into a two-sided market would make the medium dramatically less open, less innovative, and less empowering of users.

> 4b. "If a consumer wants a faster connection (to access content faster), she can get that by paying the ISP more and getting more bandwidth. If a business wants a faster connection (to deliver content faster), it can get that by paying the ISP more bandwidth. However, certain kinds of paying for faster delivery of content are sought to be curbed. Where should we draw that line? And Why should we hold on so dearly to a certain model of accounting for costs?"

4b. Consumers and businesses should be able to pay their respective ISPs for more bandwidth. I think that is very different from paying other people's ISPs for preferential treatment. The latter arrangement turns ISPs into gatekeepers with respect to their subscribers – because once the quality of delivery depends on which content providers have struck a deal with the subscribers' ISP, every content provider needs to negotiate with that ISP in order to keep up with its competitors. We hold on to the Internet's model of accounting for costs because it is part of what makes the Internet such an open, innovative environment: content providers and innovators don't face the hurdle of having to negotiate deals with all their users' ISPs.