

The Case for Rebooting the Network Neutrality Debate

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The Internet uproar about network neutrality tends to come in waves. Right now we're riding the crest of one.

In the two weeks since Federal Communications Commission Chairman [Tom Wheeler](#)'s proposal for new net neutrality rules became public, the Internet has erupted in protest. His proposal attempts to fill the legal vacuum created by the Court of Appeals for the D.C. Circuit, which in January struck down the core provisions of the FCC's Open Internet Rules—the rules against blocking, discrimination and access fees.

The uproar took many policymakers in D.C. by surprise. It shouldn't have. "Network neutrality" has long been a rallying cry in the United States.

Net Neutrality: Not Just An Abstraction

Unlike Internet users in Europe, many of whom are on restricted Internet service plans that ban the use of specific applications on mobile networks, U.S. users have experienced the power of an open Internet—and they are not willing to give it up.

They want to be able to use the applications, content, and services of their choice, without interference from Internet service providers. But many users learned the hard way that the interests of their ISP don't necessarily align with their own.

Last fall, many Netflix users around the U.S. started experiencing a significant drop in Netflix quality. When the highly anticipated second season of House of Cards was released in February, users around the country couldn't finish watching the show because Netflix kept reloading and buffering and reloading and buffering. Thinking there was a problem on the access network, many users upgraded to higher-bandwidth plans, only to find the glitch persisted.

By now, we know that many ISPs are not upgrading the connections or "ports" over which Netflix traffic enters their network because they want Netflix to pay a fee for that traffic. Thus, users who were paying for Internet service plans that provided more than sufficient bandwidth to view online video were unable to use their Internet connections to do what they wanted because their ISP was forcing Netflix to pay up. When Netflix finally caved and agreed to pay Comcast for interconnection, Netflix's quality quickly improved.

Tough Lessons From Mobile and Music

Just as American users have experienced the power of user choice, U.S. Internet companies have experienced the power of being able to innovate without permission, without fear, and at low cost.

Since the Internet's inception, Internet access in the U.S. has been guided by one basic principle: Internet service providers that provide the on-ramps to the Internet should not control what happens on the Internet. Originally, this principle was built into the architecture of the Internet. In the mid-1990s, however, technology emerged that allows ISPs to interfere with the applications, content, and services on their networks. In the face of this threat, the FCC has taken numerous actions to preserve this earlier principle by, for example, taking enforcement actions that stopped discriminatory conduct, imposing merger conditions, attaching requirements to stimulus grants for broadband services and to certain parts of the wireless spectrum, and, in 2010, promulgating enforceable rules.

The FCC's commitment to and enforcement of this basic principle—that ISPs don't get to pick winners and losers on the Internet—means Internet users in the U.S. haven't had to worry about whether ISPs might block or discriminate against certain kinds of content or applications. Innovators who have an idea for a new application have not needed permission from Internet service providers in order to innovate and have been able to realize their ideas at low cost. This is a well-oiled free market at work.

But entrepreneurs and investors have experienced a very different world in mobile, and they don't want to live in that kind of world again.

They remember with horror what the mobile Internet in the U.S. was like before the advent of the app stores—back when only a select few were able to get the carriers' blessing that allowed them to realize their idea for an application. And they got a taste of things to come in December 2011 when AT&T Wireless, Verizon Wireless, and T-Mobile all prevented Google Wallet—a mobile payment application that was first to market in what was predicted to be a \$56.7 billion market by 2015—from getting to its subscribers.

Those carriers' actions not only deprived 75 percent of mobile users in the U.S. of the ability to use an innovative new payment technology; they also prevented Google from realizing its first-mover advantage. While the carriers were mostly silent about their motivations, analysts were quick to point out that AT&T, Verizon, and T-Mobile had partnered to develop a competing mobile payment service called ISIS, which was not ready to launch. For many, this was a wake-up call. Innovators and investors were already concerned about the lack of strong network neutrality rules for the mobile Internet in the United States. If even Google, one of the nation's largest corporations, could be blocked by wireless carriers, every mobile innovator and investor in the country was at the mercy of the carriers.

Entrepreneurs and startups know that the threat of blocking and discrimination undermines their ability to get funding. As legendary venture capitalist Fred Wilson—whose firm Union Square Ventures was an early investor in Twitter, Foursquare, Zynga, and other Web 2.0 household names—pointed out:

“Many VCs such as our firm would not invest in the mobile Internet when it was controlled by carriers who set the rules, picked winners, and used predatory tactics to control their networks. Once Apple opened up competition with the iPhone and the app store, many firms changed their approach, including our firm.”

In 2007, while the FCC was investigating Comcast’s blocking of peer-to-peer file-sharing applications like BitTorrent, many entrepreneurs told me that they couldn’t get funding because investors were concerned their application would be singled out for discriminatory bandwidth management. And when the D.C. Circuit Court of Appeals in 2010 struck down the FCC’s Order that had required Comcast to stop interfering with BitTorrent and adopt application-agnostic methods for managing congestion, entrepreneurs heard the same investor concerns again. The bottom line: uncertainty about how new applications and services will be treated on the network does not create a climate conducive to investment.

Some policy makers, including FCC Chairman Wheeler, seem to be attracted to the idea that allowing ISPs to charge services fees for access to users (“access fees”) may allow carriers to develop new and innovative business models. But entrepreneurs and investors say that allowing these fees will irrevocably harm the environment for application innovation on the Internet.

On the Internet as we know it, the costs of developing an application have been incredibly low—so low that a student can start a social network in his dorm room for the \$50 monthly fee of running a server and become the CEO of the dominant global social network. In turn, the Internet has become a gigantic petri dish for hundreds of thousands of innovators in the United States.

Allowing access fees would change all that.

If large, established companies can pay ISPs so that their application loads faster or doesn’t count against users’ monthly bandwidth caps, entrepreneurs and start-ups that can’t pay will be unable to compete. This increases the level of investment needed to start a new application, killing the Internet version of the American dream. It also breaks our petri dish model: without the many low-cost innovators, our Internet innovation ecosystem will be significantly less vibrant and will produce fewer, less diverse, and lower-quality applications.

Allowing access fees will also make it more difficult for entrepreneurs to get outside funding. The current investment model for Internet applications is simple: Because the costs of innovation are so low, entrepreneurs don’t need outside funding before they can make their apps available to users. Only after an application has proven that it can attract users will venture capitalists invest the millions of dollars needed to turn the product into a viable business. This approach significantly reduces the likelihood that an investment will fail.

In a world with access fees, this investment model breaks down. Suddenly, start-ups with new apps need significant up-front capital just to be able to compete with established companies that can pay to play. We’ve seen how badly this dynamic plays out for start-ups in the music space, where new companies must pay huge up-front licensing fees to rights holders before they can get their service in front of users. As a result, investors can’t rely on the market to identify those

startups that are likely to succeed before they invest larger sums. The result is clear: there are relatively few innovative start-ups providing music services.

Today, it's just innovation in music start-ups that is hurt by the need for large, up-front investments. If the FCC allows access fees, Internet applications, content, and services will be next.

The uncertainty over access fees is already starting to have a chilling effect on innovation and investment. Entrepreneurs have told me that they are reconsidering their plans and that investors are more hesitant to invest in applications, content, or services that may become subject to access fees. Requiring ISPs to make any enhanced services available to every application that is interested—as the FCC Chairman proposes—will not solve these problems; only a ban on access fees will.

Entrepreneurs and other individual users are asking the FCC to adopt strong network neutrality rules—ones that ban blocking, discrimination against specific applications or classes of applications, and access fees—to preserve the Internet as we know it.

Revisionist History From Internet Service Providers

U.S. Internet service providers tell a different story: According to them, network neutrality is “a solution in search of a problem.” In filings with the FCC, they argue that substantive protections against blocking or discrimination are unnecessary regulation because the U.S. has experienced relatively few incidents of blocking and discrimination. Instead of adopting prophylactic rules to solve a non-existent problem, the FCC should wait and see whether a disclosure rule suffices to prevent blocking and discrimination.

In their filings, carriers typically focus on a select few, well-known incidents of blocking and discrimination, neglecting a number of additional examples. Most importantly, their argument has a fatal flaw: It ignores the de facto network neutrality regime that has been in place in the United States for the past decade. While the FCC only adopted formal network neutrality rules in December 2010, it has strongly supported Open Internet principles since 2004, has expressed its expectation that Internet service providers would live by these principles, and has consistently acted to enforce these principles in various ways over the past decade.

So the ISPs are wrong: The low rates of blocking and discrimination in the U.S. didn't happen in a regulatory vacuum. Though agency posturing isn't sufficient for the long term, the threat of sanctions for blocking or discrimination has had a deterrent effect on ISPs in the past. Thus, the U.S. experience is not that of a country without network neutrality rules.

But we don't need to wait to see what happens in a world where ISPs are free to block and discriminate, subject only to disclosure rules. The European Union already ran that experiment for us. In Europe, the market for Internet services is much more competitive than in the U.S., and regulators were confident that competition among ISPs would hold blocking and discrimination at bay. Based on this theory, the European Union in 2009 adopted rules that allowed ISPs to block or discriminate as long as they disclosed the practice to their users. In other words, for the

past five years, European Internet users have been living under the same regime that, after the D.C. Circuit Court of Appeal's decision in January, governs Internet service providers in the U.S.

What does a world without network neutrality rules look like? It's not pretty.

In the absence of rules banning blocking and discrimination, Skype fought for years (with limited success) to get mobile carriers in Europe to lift the technical and contractual bans on using Internet telephony on mobile networks. On mobile Internet service plans, text messaging applications like WhatsApp were often banned or only available to those willing to buy an expensive "text messaging option" (where you pay an extra fee to your ISP to get the right to use a third-party text messaging application).

Seeking to stifle speech it perceived as harmful to its business interests, a German ISP blocked access to websites that were criticizing its business practices and offering advice to users affected by these practices. In the UK, network-level filters designed to filter out content that is harmful to children regularly block access to non-adult content, including the websites of churches, small businesses, Gigaom (an American news website dedicated to the analysis of emerging technologies), and La Quadrature du Net (the European equivalent of Free Press).

ISPs in the UK routinely manage congestion by singling out specific applications or classes of applications. These practices not only prevent users from using the Internet as they want during peak times (when everyone is watching the new Game of Thrones episode) and make it impossible for affected applications to reach their users, but also interfere with applications like online gaming that are inadvertently caught up in discriminatory network management practices not targeted at them.

In response, the European Parliament just voted to adopt network neutrality rules that are significantly stronger than the FCC's Open Internet Rules—rules that apply to wireline and wireless networks equally. Now Europeans watch with disbelief as the U.S., which has always been a thought leader in network neutrality, moves in the opposite direction.

Where the FCC Should Go From Here

The legal vacuum created by the Court of Appeals for the D.C. Circuit threatens the Internet that we know and love. It threatens the start-up economy. It threatens American leadership in the Internet space. That is a huge problem, and we need to fix it.

But simply adopting rules that are network neutrality in name only is not enough. Different rules—like a ban on access fees versus a ban on discriminatory or exclusive access fees—will result in vastly different environments for the use of the network and in very different application innovation ecosystems.

As we—the public, policy makers, and regulators—think through the choice between limited network neutrality regulation under Section 706 of the Telecommunications Act and more

comprehensive network neutrality rules under Title II of the Communications Act, we need to ask the right questions and ask them in the right order:

1. What kind of rules do we need to protect users and innovators against the threat of blocking and discrimination?
2. How will access fees affect the environment for application innovation and free speech, and how does this affect what kind of rules we need?
3. And, finally, which foundation—Section 706 or Title II—will allow us to adopt these rules?

The answers are clear.

First, we need strong network neutrality rules that prohibit blocking, discrimination against specific applications or classes of applications, and access fees – rules that apply equally to the fixed and mobile Internet.

Second, we need rules that provide certainty to innovators, investors, and ISPs alike. Innovators and their investors need to know that they won't be discriminated against and that ISPs cannot create new barriers to innovation by charging access fees.

Third, start-ups are small and don't have many resources, let alone a legal team. So we need rules that can be enforced through simple, straightforward legal processes, not rules that tilt the playing field in favor of large, established companies that can pay armies of lawyers and expert witnesses and afford long, costly proceedings at the FCC.

Fourth, we need rules that give ISPs flexibility to realize their legitimate goals such as network management, price discrimination, or product differentiation, albeit through means that do not distort competition, harm application innovation, or violate user choice.

Fifth, we need rules that do not overly constrain the evolution of the Internet infrastructure and keep the costs of regulation low.

Such rules exist. The FCC that adopted the Open Internet Rules understood this. Between October 2009 and December 2010, it held multiple public workshops, organized a technical advisory process, and worked through more than 100,000 written comments to understand what those rules should be.

And while the Open Internet rules were not perfect, they were an important step in the right direction. As the D.C. Circuit's decision and relevant precedent show, it is impossible to adopt the rules we need based on Section 706, if the rules are to be upheld in court. In contrast, if the FCC classifies ISPs as telecommunications service providers under Title II, it is not subject to the same limitations and can effectively protect network neutrality by prohibiting blocking, harmful discrimination, and pay-to-play access fees.

That's what I think the FCC should do.

But if there is one thing the FCC should learn from the last two weeks, it's this: It's too early for the agency to make a decision. Different stakeholders and policy makers have very different answers to these questions, and there has not yet been an opportunity for this FCC and the current chairman to explore them in depth.

Fortunately, it's not too late. The FCC still has the chance to get it right—by asking the right questions in the upcoming Notice of Proposed Rulemaking; by allowing everybody—users, entrepreneurs, investors, ISPs—to make their case during the comments period; and by carefully considering everything it learns during this process.

It's time for the FCC to ask, to listen, and to think. The future of the Internet depends on it.

This is the first in an occasional series of essays about the future of Internet architecture and regulation. For more background, check out [our net neutrality primer](#).

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