

The Cost of Net Neutrality

By Becky Bracken

Net Neutrality asks a lot of networks. Tier 1 Internet backbone providers hold the digital age in the palm of their hand. Heavy stuff when you think about it. Each second, more of everyday modern life is lived and recorded online. And just a few very powerful companies control it all--from world's economy to vacation snapshots.

The internet, with its punk-rock, intellectual-anarchist roots, is intended to provide every user with equal access to the world. It's that equal access that built the fortune of Ebay, which offered people in all corners of the world a global storefront. The internet has given artists, writers and musicians the ability to self publish. Equal access to the internet has unleashed oppressed people and brought tyrannical dictators to their knees. Everyone has the opportunity to be heard and contribute online. It's the defining trait of our age.

But, what often gets left out of the Net Neutrality debate is that carriers have historically taken an agnostic approach to the content they're carrying because they had little or no way to analyze the content that traversed their networks. Now technology has given networks the tools to see every bit and byte in real time--and make decisions based on what they see.

Companies exist to make money. That's simple enough to understand. But when ISPs realized they could open new revenue streams by selling priority delivery of information to some favored customers--with very deep pockets--and leave everyone else with the left over bandwidth, observers quickly saw a seriously slippery slope. Comcast was the first company in 2007 to draw fire over blocking and throttling some types of traffic and in Dec. 2010, the FCC passed rules to keep the internet neutral. The only problem was that ISPs said the FCC lacked the authority to impose restrictions on their business. Plus, the rules themselves have loopholes the size of a dump truck and exclude adequate governance of wireless communications. Enter the lawyers, Stage Right.



Private internets

The non-profit Electronic Frontier Foundation (EFF) brings together policy wonks, technologists, activists and lawyers to police digital communications on behalf of consumers and the general public. Net Neutrality is of keen interest to the EFF. The EFF argues that the creation of a "private internet" imposes unconstitutional restrictions on free speech and would stifle innovation by upstart entrepreneurs and inventors, who would no longer be allowed to compete on an equal footing with larger players.

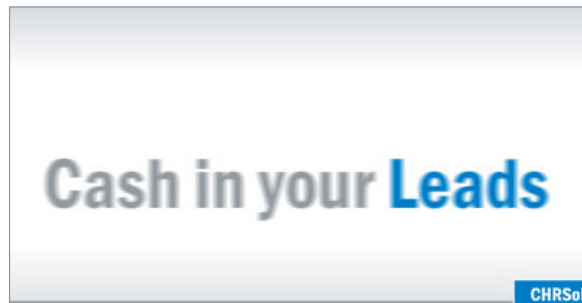
"The central goal of the net neutrality movement is to prevent ISPs from discriminating against lawful content on the internet," said EFF Civil Liberties Director Jennifer Granick. "Yet the FCC's version of net neutrality specifically allows ISPs to make those discriminations--opening the door to widespread Internet surveillance and censorship in the guise of

copyright protection and addressing the needs of law enforcement."

Net Neutrality's U.S. legal battle

In the U.S. Net Neutrality rules are being actively litigated on both sides of the argument. In July 2012, Verizon was accused of violating Net Neutrality rules with its tethering service. EFF Technology Projects Director Peter Eckersley says Verizon should have seen it coming.

"Tethering seems like a pretty straight forward translation of the rules governing wireline phone access to wireless," Eckersley says. "If you bought a telephone, the provider can't say whether you're allowed to hook up a fax machine or modem to the



Not for distribution or reproduction.

line. Tethering seems pretty analogous to that.”

In the very same month, Verizon filed a brief arguing that FCC rules governing the Internet were in violation of the Telecommunication Act, arbitrary and capricious and infringe on carriers’ constitutional right to free speech.

“Just as a newspaper is entitled to decide which content to publish and where, broadband providers may feature some content over others,” Verizon lawyers argue. “Although broadband providers have generally exercised their discretion to allow all content in an undifferentiated manner, they nonetheless possess discretion that these rules preclude them from exercising.”

Net Neutrality at work: The Netherlands

While the U.S. struggles to create a set of standards, the Netherlands passed the first European Net Neutrality laws last June--although the rules were just made official in May of this year.

Dutch carrier KPN, with a market share in the Netherlands of more than 50 percent, sparked the creation of the laws when it tried to charge for OTT services like Skype and WhatsApp, which they believed were cutting too deep into revenues for comfort. The rules try and force carriers to turn a blind eye to the content they’re carrying and even ban deep packet inspection without a legal warrant. But consumers actually want carriers to block some types of content, like spam and security threats, but not others, which makes for murky waters. Just last year, KPN drew criticism for using DPI to see which customers were using VoIP applications.

“The amendments to the Dutch Telecommunications Act restrict internet service providers to block Internet traffic, expect for specific reasons such as necessary traffic handling, and to tariff based on the specific applications or services used,” KPN said in a statement through Stefan Simons, a KPN press officer, “Our policy is in-line with Net Neutrality as embedded in Dutch Law. Moreover, Net Neutrality remains our guiding principle. In that respect, please note that our new propositions--varying data-usage and speed vs. paying for specific services--have been adjusted as such that it does not breach with Dutch Law.”

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Impact of Net Neutrality on network operators

In April, KPN was forced to issue a profit warning after its Dutch first-quarter mobile revenues dropped by more than 8 percent and announced the elimination of thousands of jobs in the Netherlands--about a quarter of their employees in the country.

It’s tough for anyone--much less a huge, rich company to argue against innovation and free speech. A report from Stratecast on the impact of Net Neutrality on network operators says these five specific areas will be most negatively impacted:

1. Innovation: Net neutrality impacts operator innovation by either providing incentives to develop products and services or to discourage those activities.

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2. Prospective ARPU:

Average revenue per user is a statement of the expectation that particular consumers, both individuals and commercial users, will generate a particular amount of revenue over time.

3. Non-access Service Revenue: Anything likely to discourage consumers or commercial entities, such as content providers, to subscribe to an operator’s service offerings is likely to decrease the total amount of non-access related revenue that can be generated.

4. OPEX: Operational expense is the overhead required to deploy, manage and maintain networks. Net neutrality, by potentially increasing the overhead associated with ensuring regulatory compliance or by reducing the efficiency of managing networks could increase OPEX.

5. CAPEX: Capital expense is the direct cost of deploying networks. In an environment where the



revenues associated with services are denied or reduced for operators, CAPEX could be expected to decrease. Contrariwise, if QoS approaches are denied operators, CAPEX could increase as operators overbuild to address traffic growth.

Essentially, the report adds, Net Neutrality acts as a tax on the internet, that will translate to higher monthly bills by as much as \$55 per subscriber.

Because consumers have such a wide range of tech sophistication, EFF's Eckersley adds, it important for networks to err on the side of caution with regard to Net Neutrality rules.

"It's dangerous territory because consumers at the time of purchase don't have a crystal ball that tells them what they'll want to do with their smartphones," Eckersley says. "They might not know what VoIP is now, but in three months, they want to talk to a friend on Skype. Operators should build neutral networks and differentiate on quality and other services."

Net Neutrality asks a lot of networks. Government depends on the investments carriers make for broadband buildout and yet Net Neutrality laws curtail how networks can generate that revenue. That's particularly galling in the free-market, capitalist U.S. And yet, the directive seems simple: carry traffic without interruption or prejudice.

Who really owns the networks? Consumers.

Professor Noam Chomsky, who feels the fight to keep the internet "free and open" is critically important, reminds us that the internet itself was developed in the public domain.

"The internet was handed over to the corporations as a gift," Chomsky says. "Should providers be allowed to determine who gets easy access and who gets difficult access?"

Only litigation and regulation will ultimately write the end of the tale, but with The Netherlands and others quickly following the Net Neutrality trend, networks will have to turn to other--content agnostic--means of generating revenue while under a crush of data demand. In fact, Cisco makes the following predictions about mobile data traffic alone in the next five years:

- Monthly global mobile data traffic will surpass 10

"Should providers be allowed to determine who gets easy access and who gets difficult access?" - Professor Noam Chomsky

exabytes in 2016

- Over 100 million smartphone users will belong to the "gigabyte club" (over 1 GB per month) by 2012
- The number of mobile-connected devices will exceed the world's population in 2012
- The average mobile connection speed will surpass 1 Mbps in 2014
- Due to increased usage on smartphones, handsets will exceed 50 percent of mobile data traffic in 2014
- Monthly global mobile data traffic will surpass 10 exabytes in 2016

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- Monthly mobile tablet traffic will surpass 1 exabyte per month in 2016
- Tablets will exceed 10 percent of global mobile data traffic in 2016
- China will exceed 10 percent of global mobile data traffic in 2016

And with access-only related revenues on the table, that puts networks in a tough spot. Net Neutrality cuts off a significant potential market for operators and will force them to compete head-to-head with the very bandwidth hungry OTT players driving the data charge by providing their own compelling services. And while arguments over inches of Net Neutrality ground are being battled in court rooms, there are significant gains to be made in providing services based on the information the network itself captures about the consumer, rather than charging based on the content being consumed. From mobile advertising to mHealth, risk management to connected homes, it's the ability of networks to create and partner with ComIT innovators that will ultimately put an end once-and-for-all to the Net Neutrality Boogie Man just over the next horizon.