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Anant Raut
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I. INTRODUCTION

The fate of Comcast-Time Warner Cable is almost an afterthought for web content creators, who are facing a much more existential threat. The D.C. Circuit's decision in *Verizon v. F.C.C.*[2] seemed to sound the death knell for net neutrality, validating "pipe" owners' discretion to price discriminate the web content they carry. Unless the Federal Communications Commission ("FCC") moved quickly to take regulatory action, warned the commentators, broadband providers such as Comcast and Verizon would extort a toll from high-volume content providers such as Google, Netflix, and ESPN to ensure that their content loaded just as smoothly as their competitors', or, for an extra price, faster, essentially creating a protection racket under the guise of an economically efficient two-sided market.

Except the big content providers may not be as captive as we think. Over the years, hints have emerged that the most successful content providers have tried to reduce their dependency on the pipe owners: whether Netflix caching its content directly in the last mile through Open Connect; Google experimenting with running a lightning-fast fiber network; or Apple stitching together its own delivery network ahead of its rumored move into higher content offerings. Should the FCC fail to restore net neutrality rules, this may be the moment when the biggest content providers decide to disintermediate the pipe owners entirely and sell broadband service directly to consumers.

But a splintering of the neutral net into branded internets would only widen the digital divide in this country. Because of the capital costs of building and maintaining broadband architecture, the branded internets are likely to focus on dense, urban markets where the bulk of their users live. Left behind will be the rural, less affluent regions of the country that already have trouble getting more than one internet provider to compete for their business. If the FCC fails to reverse the D.C. Circuit's decision, then the market will find a way to correct itself; but in a way that only benefits the most profitable segment of the consumer market.

II. D.C. CIRCUIT EUTHANIZES THE OPEN INTERNET ORDER

In January's *Verizon* decision, the DC Circuit struck down the Genachowski-era net neutrality rules (the Open Internet Order[3]) for broadband providers, holding that the FCC lacked

[1] Anant Raut is an antitrust attorney in Washington, D.C. He is a former Antitrust Counsel to the U.S. House of Representatives, and previously practiced competition law and policy at the Federal Trade Commission and in private practice. He is currently serving as outside counsel to a coalition of wireless providers led by Free Press on competition issues. Mr. Raut is a graduate of Yale University and the Harvard Law School. The views expressed in this article are his alone.

[2] *Verizon v. F.C.C.*, __ F.3d __ (D.C. Cir. 2014).

[3] *In re Preserving the Open Internet*, 25 F.C.C.R. 17905 (2010).

authority to mandate antidiscrimination rules because it had previously classified broadband internet as something other than a telecommunications service, which was necessary for the FCC to assert its common carrier authority[4].

The Open Internet Order had been issued by the FCC following an earlier defeat in the D.C. Circuit (*Comcast Corp. v. FCC*[5]) in which the D.C. Circuit had vacated an order imposed by the FCC upon Comcast Inc., mandating nondiscrimination in peer-to-peer networking applications, citing its authority under Section 706 of the 1996 Telecommunications Act. The D.C. Circuit held that the FCC had failed to point to any explicitly delegated authority from Congress to mandate open network management practices from broadband providers. In response, the FCC passed the Open Internet Order, reinterpreting its authority under Section 706, which empowers the FCC to remove barriers to infrastructure development and competition that would promote telecom development. The FCC reasoned that since content providers make people want to use the internet, Section 706 gave the FCC the authority to ensure broadband providers aren't stifling competition in telecommunications markets and investment in infrastructure by impeding the transmission of web content.

The Open Internet Order imposed three core principles of net neutrality onto broadband providers, requiring: 1) that mobile and fixed internet providers disclose their network management practices, 2) that mobile and fixed internet providers not block lawful content or applications, subject to reasonable network management, and 3) that fixed (but not mobile) internet providers not "unreasonably" discriminate in transmitting lawful content to a customer.

And though the Order ushered in the Golden Era of Cat Memes, and, secondarily, an efflorescence of web content, it was struck down. Right law, wrong argument, said the D.C. Circuit in *Verizon,* essentially holding that net neutrality obligations under the Communications Act apply to telecommunications services, not information services, which is how the FCC has previously classified broadband providers.

From a policymaker's perspective, striking down the Open Internet Order was no big loss—it was a terrible bit of necromancy, an ungainly amalgam that tried to accommodate (i) the disparate interests of public interest groups that want broadband classified as a public good akin to electricity, and (ii) the broadband internet service providers ("ISPs") who argue that they should reap the reward for the private capital invested and business risks taken in creating the networks. The Open Internet Order was a bit like having two children who can't agree upon a movie, and compromising by sitting in the hallway between the theaters.

But in striking down the Open Internet Order, the D.C. Circuit gave broadband providers the green light to differentiate the pricing for content providers on their networks. It opened the door to favoring certain websites over others in terms of integrity or load speed, or blocking other websites entirely.

[4] Section 706 of the 1996 Telecommunications Act ("Communications Act").
[5] 600 F.3d 642 (D.C. Cir. 2010).

The reaction was swift, and the reaction was dire. Public advocacy groups ululated that the decision heralded the end of net neutrality as we knew it, and that judicial blessing had been given to the broadband companies to turn the internet into a two-sided market.

III. TWO-SIDED MARKETS: THE INFORMATION SUPERHIGHWAY TO HELL

While the decision was still being retweeted, the ramifications were already being felt.

In February, Netflix disclosed that its streaming speed had been declining significantly over Verizon's and Comcast's networks for months.[6] The reasons given for the slowing streams were a combination of network issues stemming from prime time congestion as well as Netflix's shift to higher-quality HD movies. And the fact that both Verizon and Comcast sell streaming movies to their customers in direct competition with Netflix, and would stand to benefit if customers became dissatisfied with Netflix, is absolutely, completely, totally, like, wow, -I-can't-believe-you-even-went-there not related.

When you're Netflix, and responsible for 1/3 of all broadband traffic in North American during prime time,[7] any degradation of service, no matter how slight, has serious business repercussions. When speed declines by almost 24 percent and customers are complaining that movies are freezing, difficult to load, or an otherwise unpleasant viewing experience, that becomes a serious threat to the survival of your company.

Fairly soon thereafter, Netflix made a deal with Comcast, the details of which are unknown, but which involve Netflix paying Comcast a hefty fee to allow it to continue streaming movies to customers without being "throttled." Streaming speed on Comcast has already picked up.

Commentators who view everything through a Comcast-Time Warner Cable lens see this as hush money, an attempt by Comcast to settle a dispute with a noisy complainant before its own case receives serious scrutiny from the Department of Justice's Antitrust Division and the FCC. They completely miss its significance. Comcast's leverage with Netflix existed *before* the attempted acquisition of Time Warner Cable, and before *Verizon*. It arises as a function of being a last-mile monopolist.

It must be noted that this leverage is not exclusive to Comcast, but enjoyed by each of Comcast's broadband competitors as well. The Open Internet Order never applied to interconnection, only to content once it was on the broadband provider's pipe. To the extent Netflix wants to interconnect with any broadband provider directly, it can expect the same roadblocks as it encountered from Comcast.

But the world has gotten a lot worse for the Netflixes since *Verizon*. Bear in mind, Comcast doesn't benefit from *Verizon* because it's under a net neutrality mandate through 2018

[6] Timothy J. Seppala, *Netflix Report Suggests Comcast and Verizon FiOS Speeds Are Slipping*, ENGADGET.COM (February 12, 2014), *available at* http://www.engadget.com/2014/02/12/netflix-speed-report-comcast-verizon-drop/.

[7] Emil Protalinski, *Sandvine: Netflix Owns One-Third of North American Traffic at Peak, Has Doubled Its Mobile Share in 12 Months*, THENEXTWEB.COM (May 14, 2013), *available at* http://thenextweb.com/insider/2013/05/14/sandvine-netflix-owns-one-third-of-north-american-traffic-at-peak-has-doubled-its-mobile-share-in-12-months/.

as part of its deal with the Antitrust Division after acquiring NBCUniversal.[8] But all of the other broadband operators do benefit.[9]

The white flag raised with Comcast has undoubtedly whetted the appetites of Verizon and other broadband networks that see Netflix the way starving men see a fat, hobbled pig. Nearly 75 percent of Netflix's gross revenues are eaten up by licensing fees for its content;[10] now, a growing percentage of what lunch money remains will be taken by the other ISPs lurking on the playground. Eventually, the greed of the broadband networks will lead to a tipping point—one in which it makes more sense for Netflix to own its own network.

IV. INTERNET INFRASTRUCTURE: THE VAST, UNGLAMOROUS MIDDLE

To understand the logic, we'll need a quick run-through on how the internet actually works.

When you watch a YouTube video, jump onto Facebook, or send out a Tweet, in most cases the company you pay your internet bill to is not the one that owns the pipes all the way back to the California offices of Google/Facebook/Twitter. On their side, the content providers either connect to an ISP or (in the case of the big ones) act as their own. Your ISP typically just controls that crucial "last mile" of pipe that goes directly into your house. Intersecting with both, and where the bulk of internet traffic is carried, are the content delivery networks ("CDNs"). CDNs comprise the massive "backbone" infrastructure running underground across the country, and are operated by unsexy companies like Cogent and L3 that probably don't have cool cafeterias for their employees made from reclaimed wood.

The majority of content providers host their sites on ISPs that connect to a CDN like Level 3, which in turn connects to a different ISP like FiOS that runs fiber all the way to your house. There are only a handful of such major backbone networks, while there are hundreds more ISPs. As a customer, you pay your ISP for service, just like the content provider pays its ISP for service, and the two ISPs work out a deal with the backbone that allows the content to go from the provider, through its ISP, through the backbone, through your ISP, to your computer, tablet, or phone in one seamless transmission.

ISPs and backbones have traditionally agreed to connect to each other in a process known as "peering." In the early days, neither side even charged each other ("settlement-free peering"), the thought being that what goes around, comes around, and that an ISP receiving traffic from a backbone network would at some point need the backbone to accept a comparable amount of data from it.

The argument from the ISPs for the Netflix surcharge is that whereas settlement-free peering arose at a time when traffic was likely to flow both ways, Netflix sends waaaaay more traffic downstream than it takes back upstream. There's a straightforward fix—the big ISPs have more ports they can open to receive more data. But parse their response—they're not saying they

[8] Comcast has also offered to make Time Warner Cable subject to the same time-limited net neutrality obligations as a condition of approval.

[9] Plus, 2018 isn't that far away.

[10] Mark Sweney, *Netflix to Spend $3bn on TV and Film Content in 2014*, THE GUARDIAN.COM (February 5, 2014), *available at* http://www.theguardian.com/media/2014/feb/05/netflix-spend-3-billion-tv-film-content-2014.

don't have the capability of opening up more ports for Netflix on the network. They're saying they plain don't feel like it.

The leverage point of the ISPs is that they are the drawbridge to that critical "last mile" of pipe to the customer. The end-around for the content providers lies in the vast, unglamorous middle.

V. RISE OF THE BRANDED INTERNETS

Hints abound that like doomsday preppers, the big content providers have been readying themselves for the nightmare Netflix-Comcast scenario, socking away alternate bandwidth on the internet.

In December 2013, the *Wall Street Journal* catalogued the various ways in which content companies have sought greater control over internet infrastructure, ranging from investing in marine and underground cables to developing their own networking hardware.[11] Google has pieced together over 100,000 miles of fiber worldwide (compare that to Sprint's U.S. network, which totals fewer than 40,000 miles).[12] Google is also part owner of a $300 million cable system linking California and Japan; has put down 6,000 miles of cable to connect six Asian countries; and purchased the private fiber optic routes linking its data centers to America's 12 biggest internet hubs.[13] Meanwhile, Microsoft has been building its own fiber routes and leasing long-term space on several trans-Pacific cables.[14] Facebook has stitched together its own fiber network across Europe.[15] Amazon has been investing in fiber networks and networking gear.[16] And Apple has been secretly stitching together a network of broadband, enough to send hundreds of gigabits of data each second from its data centers to the networks that connect to customers, most likely to support another iteration of its unpopular television product.[17]

And that last mile monopoly? The content providers are working around that too.

In the United States, Google has been studiously feigning casualness while experimenting with operating its own hardline service. Google has deployed two fiber networks in Kansas City, Kansas, and Provo, Utah, and is currently rolling out a third in Austin, Texas.

Watching the incumbent ISPs respond to the entry of Google Fiber was like watching the last samurai get introduced to the machine gun.[18] In Kansas City, Time Warner Cable started offering 100Mbps service, twice as fast as its previous offering, and heavily discounted all of its previously offered speeds. In parts of Utah where it faces no high-speed competition, Comcast offers a "triple-play" (internet, TV, and phone) package of $242/month with speeds less than

[11] Drew Fitzgerald & Spencer Ante, *Tech Firms Push to Control Web's Pipes*, WALL ST. J. (December 16, 2013), *available at* http://online.wsj.com/news/articles/SB10001424052702304173704579262361885883936.

[12] *Id.*

[13] *Id.*

[14] *Id.*

[15] *Id.*

[16] *Id.*

[17] Drew Fitzgerald & Daisuke Wakabayashi, *Apple Quietly Builds New Networks*, WALL ST. J. (February 3, 2014), *available at* http://online.wsj.com/news/articles/SB10001424052702304851104579361201655365302.

[18] https://www.youtube.com/watch?v=XCtuZ-fDL2E, "The Last Samurai," Warner Bros. (2003). Seriously, they all died.

10Mbps; in Provo, Comcast offers a $120/month triple play with 105Mbps download speeds.[19] Meanwhile, Google Fiber regularly hits 600-700 Mbps via Ethernet, and 200 Mbps via wifi (compare to national average speeds of 5 Mbps via wifi).[20]

Facebook announced in April that it was working on a project, known as Facebook Connectivity Lab, to develop solar-powered drones that could beam internet service down to communities.[21] Google is experimenting with using solar-powered balloons ("Project Loon") to create a mesh network 20 kilometers above the ground, communicating to ground stations connected to internet providers.[22][23]

Now, imagine a world where for $150/month, you get Apple TV and wireless internet for the rest of your house. Or one in which you buy Amazon's new set-top box, the Fire, and for $60/month, you get an Amazon Prime subscription, which includes 2-day shipping and unlimited access to Amazon's library of streamable movies and TV shows, plus broadband for your entire house. Or for $120/month, perhaps you'd prefer Google TV and insane-speed Google fiber.

Under network management principles espoused by the FCC, the branded internets can make sure that their proprietary content (Amazon movie streaming, Google search results, Zagats reviews, YouTube videos, Apple iTunes, or iTV) bypass other internet traffic. Intrabrand products on the branded internets will get to you the fastest, and in highest quality. What effect does that have on competition? Well, if you're already paying for Amazon Broadband, and have the choice of a crisp, lightning-fast streaming movie through Amazon Prime, or taking your chance with streaming Hulu, which one, over time, are you likely to prefer?

But that shouldn't matter, because overall, customers will have many more choices than they have right now. If you value streaming sports games, get ESPN broadband; if you prefer movies, get Netflix broadband; if you prefer interoperability with devices you already own, get Apple broadband. The consumer can choose the bespoke internet service that's best for him/her, and everyone wins, right?

Well, not everybody.

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[19] Jon Brodkin, *Utah Bill Would Stop Regional Fiber Networks From Expanding*, ARSTECHNICA.COM (February 5, 2014), *available at* http://arstechnica.com/tech-policy/2014/02/utah-bill-would-stop-regional-fiber-networks-from-expanding/.

[20] Cyrus Farivar, *Google Fiber Is Live in Kansas City, Real-World Speeds at 700 Mbps*, ARSTECHNICA.COM (November 13, 2012) *available at* http://arstechnica.com/business/2012/11/google-fiber-is-live-in-kansas-city-real-world-speeds-at-700-mbps/.

[21] Cade Metz, *Facebook Will Build Drones and Satellites to Beam Internet Around the World*, WIRED.COM (March 27, 2014) *available at* http://www.wired.com/2014/03/facebook-drones/.

[22] Jon Brodkin, *Google Project Loon Internet Balloon Circled the Globe in 22 Days*, WIRED.COM (April 4, 2014) *available at* http://arstechnica.com/information-technology/2014/04/google-project-loon-internet-balloon-circled-the-globe-in-22-days/.

[23] And while wireless broadband isn't fast enough yet to be considered a true alternative to high-speed broadband (which has download speeds an order of magnitude faster than wireless), technological advancements suggest that the gap is narrowing with time, making the drawbridge to the home not the only entrance to the castle.

VI. THE RISE OF THE BRANDED INTERNETS WILL FURTHER THE DIGITAL DIVIDE

There's a catch in this rosy scenario—it only makes financial sense for these tech companies to create their private broadband networks in high-density metropolitan areas. The economics of building out high-speed broadband in rural, underserved areas are just as bad for the tech companies as they are for the cable companies.

The cost of building new infrastructure is staggering. By some estimates, Google has spent $100 million rolling out its fiber network in just two cities.[24] No figures are available yet on how much Facebook's satellite and Google's balloon networks will cost in upfront capital expenditures.

Therein lies the problem with allowing the market to decide the future of broadband in this country—the market isn't interested in rural, underserved areas. Average internet speeds in rural America are slower than in urban areas, and their median number of wireline competitors is fewer. Only 82 percent of Americans living in rural areas have access to broadband at speeds of 6Mbps or higher, whereas nearly every American living in an urban area does.[25] At higher speeds, the disparity widens: 84 percent of Americans in urban areas had access to broadband speeds of 50Mbps or greater, over twice the availability in rural areas (38 percent).[26]

I call it the "Kansas City Problem." Residents of Kansas City now have their choice of lightning-fast internet service or still-speedy, -all-things-considered internet service. About a one-hour drive south of Kansas City is Williamsburg, Kansas. There, residents have no wired broadband, and only a scattered assortment of satellite broadband options whose reliability is always subject to weather and topography, at download speeds a full magnitude less than in KC.

So what if someone in the Ozarks doesn't get to stream Netflix seamlessly, you say? Big deal—it's a luxury item. But, as Susan Crawford astutely points out,[27] take out the word "movies" and substitute "telemedicine," or MOOCs.[28] Now we're talking about a real quality-of-life difference between "have's and "have nots."

The citizens who benefit from the branded internets will be the ones who always benefit from internet advancements of any sort. Today, over 95 percent of the residents of Rhode Island, Connecticut, Washington D.C, New Jersey, Hawaii, Massachusetts, Delaware, and Washington have broadband at speeds of 20 Mbps or greater, compared to 23 percent or fewer of the

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[24] Ingrid Lunden, Analyst: *Google Will Spend $84M Building Out KC's Fiber Network to 149K Homes; $11B If It Went Nationwide*, TECHCRUNCH.COM (April 8, 2013) *available at* http://techcrunch.com/2013/04/08/google-fiber-cost-estimate/.

[25] White House Office of Science and Technology Policy and The National Economic Council, *Four Years of Broadband Growth*, 11 (June 2013) *available at* http://www.whitehouse.gov/sites/default/files/broadband_report_final.pdf.

[26] *Id.*

[27] *Latest Pew Study Shows 70 Percent of U.S. Has Broadband. But Access Is Still Unequal*, WIRED.COM (August 26, 2013) *available at* http://www.wired.com/2013/08/latest-pew-results-show-digital-divide-and-mobile-paradox-for-u-s-broadband/.

[28] Massive open online course.

residents of Wyoming, Vermont, Montana, and Alaska.[29] As New York and San Francisco approach Seoul-like speeds and mobile development, great swaths of the country will be stuck in 3G or worse environments, where slow and spotty service is the norm. The children in favored cities will grow up taking tutorials on their tablets; the children in the undeserved rural areas will line up at the public library just to check their email.[30] In the branded internet future, the single-most important factor in social mobility may be one's zip code.

VII. Conclusion

Historian Robert Caro, in documenting the state of America before Lyndon Johnson's rural electrification program, describes a countryside with no radio, TV, electric lights, electric water pumps, or washing machines. Electricity had become a fact of urban life by the 1930s, yet more than 6 million out of 6.8 million farming families didn't have it. They were behind the rest of the world, writes Caro, but they had no idea how *far* behind.[31]

The proposed Comcast-Time Warner Cable tie-up raises a number of competition concerns, for cable subscribers and cable companies, among others. But it poses no greater threat for web content providers than that which the companies already face thanks to the D.C. Circuit's decision to strike down net neutrality obligations. Left unremedied, that decision will drive the creation of branded internets, with far more profound societal consequences.

Comcast has already begun throwing out the prospect of branded internets as a screen for its own merger;[32] but these are not a counterbalance to a Comcast-Time Warner Cable monolith, these are evidence of a larger problem in need of repair. Branded internets will be great for the people who live in a technopolis, but not for those left behind. The FCC must take measures to preserve net neutrality, either by issuing a new order in response to *Verizon*, or finally classifying broadband providers as telecommunications services.

[29] OSTP and NEC Report *supra* note 25 at 13.

[30] Kim Severson, *Digital Age Is Slow to Arrive in Rural America*, N.Y. TIMES (February 17, 2011) *available at* http://www.nytimes.com/2011/02/18/us/18broadband.html?pagewanted=all&_r=2&.

[31] ROBERT CARO, THE PATH TO POWER: THE YEARS OF LYNDON JOHNSON, VOL. 1, 514 (1982).

[32] Jon Brodkin, *Comcast: Without Time Warner Cable, We Can't Compete Against Google, Netflix*, ARSTECHNICA.COM (April 8, 2014) *available at* http://arstechnica.com/tech-policy/2014/04/comcast-without-time-warner-cable-we-cant-compete-against-google-netflix/.