

Network Equality

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One of the clear goals of the federal Communications Act is to ensure that all Americans have reasonably comparable access to the Internet without respect to whom or where they are. Yet the main focus of policymakers and legal scholars of Internet policy today has been on promoting innovation, a concept that Congress barely invokes in the statute. The flagship regulatory intervention for this approach is “network neutrality,” a rule that forbids Internet providers from blocking or interfering with users’ connections. To the extent that net neutrality addresses the distributional goals of communications law, it posits that openness will foster innovation which, in turn, will draw user interest which, in turn, will induce investment in more and better infrastructure which, in turn, will benefit today’s underserved. This is the trickle down theory of Internet innovation.

This Article critiques this approach. While it has its merits, the privileging of innovation in communications policy could exacerbate existing racial, ethnic, and class disparities because the quality of users’ Internet connections refract through those persistent demographic variables. This Article calls for a return to the distributional equality principle at the heart of communications law and policy.

The Internet is essential to almost every aspect of our lives. Like electricity a century ago, it is a technology that determines how we work, campaign, exercise, learn, heal, and love. The benefits of a high-quality Internet connection are especially important—indeed more important—for racial minorities, poor people, and all others who must negotiate structural inequalities in other aspects of their lives in ways that advantaged people do not. Policymakers and scholars accordingly must affirmatively further equality in Internet access, or at least adopt a regulatory approach that seeks above all to ensure equality. The Internet is too indispensable to rely on innovation alone.

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INTRODUCTION

The Internet can be a great equalizer. It enables far-flung, underserved, and oppressed communities to share ideas, products, and services with anyone around the world. It creates connections for people who would otherwise be isolated. We have seen this happen everywhere, from Red Hook, Brooklyn in the wake of Hurricane Sandy to remote mountain villages in San Juan Yae, Oaxaca to the homes of chronically ill elementary school students in Sumter, South Carolina to the post-

election protesters in the streets of Tehran, Iran.¹ The Internet can be a gateway to a vast world otherwise beyond users' reach. In this way, it can be a great democratizing and leveling force.

But this is only half of the story. For the Internet to be a platform for communicative integration, all users must have reasonably comparable Internet access. Otherwise, the disadvantage that remote and underserved communities already experience will only worsen.

This has been true for most communications and general use technologies. Indeed, universal service was the objective for which Congress wrote the Communications Act over eight decades ago. The prevailing communications technologies were different then, of course. But the statute's objective was clear: lawmakers prioritized universal deployment in the broad terms.² This remains true. Congress has only clarified this central aim over time. Today, policymakers must ensure that the benefits of the newest communication technologies are "ma[d]e available, so far as possible, to all the people of the United States without discrimination on the basis of race, color, religion, national origin, or sex."³ The statute, moreover, puts the level of broadband service that policymakers must make available to all users in relative terms; it requires that access and fees charged be "reasonably comparable" no matter whom or where users are.⁴ These distributional principles must guide communications policymaking above all else.

Despite this clear command, communications policymakers and legal scholars in the United States today overwhelmingly focus on ensuring that the Internet is a platform for innovation.⁵ And, in so doing, they might be complicit in perpetuating existing disparities in availability, adoption, and use across the country.

Low entry costs and decentralized transmission design, the prevailing ethos holds, foster disruptive "generativity."⁶ Online companies

1. See Robbie Brown, *A Swiveling Proxy That Will Even Wear a Tutu*, N.Y. TIMES (June 7, 2013), <http://mobile.nytimes.com/2013/06/08/education/for-homebound-students-a-robot-proxy-in-the-classroom.html>; Noam Cohen, *Red Hook's Cutting-Edge Wireless Network*, N.Y. TIMES (Aug. 22, 2014), <http://www.nytimes.com/2014/08/24/nyregion/red-hooks-cutting-edge-wireless-network.html>; Jared Keller, *Evaluating Iran's Twitter Revolution*, ATLANTIC (June 18, 2010, 8:00 AM), <http://www.theatlantic.com/technology/archive/2010/06/evaluating-irans-twitter-revolution/58337/>; see also Lizzie Wade, *Where Cellular Networks Don't Exist, People Are Building Their Own*, WIRED (Jan. 14, 2015, 6:30 AM), <http://www.wired.com/2015/01/diy-cellular-phone-networks-mexico/>.

2. See 47 U.S.C. § 151 (2015); *id.* § 1302(a).

3. 47 U.S.C. § 151 (2015).

4. *Id.* § 254(b)(3).

5. See, e.g., BARBARA VAN SCHEWICK, INTERNET ARCHITECTURE AND INNOVATION (2010); Tim Wu & Christopher S. Yoo, *Keeping the Internet Neutral?: Tim Wu and Christopher Yoo Debate*, 59 FED. COMM. L.J. 575 (2007); see also Fred von Lohmann, *Fair Use as Innovation Policy*, 23 BERKELEY TECH. L.J. 829 (2008); Mark A. Lemley & R. Anthony Reese, *Reducing Digital Copyright Infringement Without Restricting Innovation*, 56 STAN. L. REV. 1345 (2004).

6. See JONATHAN ZITTRAIN, THE FUTURE OF THE INTERNET—AND HOW TO STOP IT 80–90 (2008).

like Amazon, Zipcar, Travelocity, and Uber were all once fledgling start-ups that, through the savvy and creativity of their developers, created new value for customers in the retail product distribution, car rental, travel agency, and taxi dispatch industries. To the extent there is anything of the Communication Act's commitment to equality in this disruption, policymakers and legal scholars assume that the spillover effects of innovation by talented and networked elites will eventually spread to everyone else.⁷

This trickle down theory has guided broadband policymaking for the last decade.⁸ Even as policymakers and scholars disagree about how best to promote innovation on the Internet, the ascendant ethos has coalesced around "network neutrality," an approach that would allow users and innovators to engage the Internet freely and without permission from their broadband providers.⁹ Broadband providers under a regime of network neutrality would be barred from blocking or discriminating between applications and content.¹⁰ This was the approach the Federal Communications Commission ("FCC") took when it adopted its Open Internet Rules in February 2015.¹¹ The White House and the FCC have recited the trickle down mantra to justify the Rules as though it is an iron law: Internet innovation, they argue, will generate user interest which, in turn, will induce investment in Internet infrastructure which in turn, will benefit everyone.¹²

7. See BRETT M. FRISCHMANN, *INFRASTRUCTURE: THE SOCIAL VALUE OF SHARED RESOURCES* 336 (2012); see also Protecting and Promoting the Open Internet, GN Docket No. 14-28, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd. 5601, 5657 ¶ 128 (Feb. 26, 2015) ("We do not seek to disrupt the legitimate benefits that may accrue to edge providers that have invested in enhancing the delivery of their services to end users. On the contrary, such investments may contribute to the virtuous cycle by stimulating further competition and innovation among edge providers, to the ultimate benefit of consumers.").

8. See Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities, CS Docket No. 02-52, Declaratory Ruling and Notice of Proposed Rulemaking, 17 FCC Rcd. 4798 (2002). Broadband is a regulatory term of art that the FCC has used for over the past decade and a half to classify high-speed connections in the "last mile." See *id.* The term "broadband" is short hand for what Congress described in the Communications Act as "advanced telecommunications capability." 47 U.S.C. § 1302(d)(1) (2013). In January, the FCC updated the broadband standard to 25 Mbps for downloads and 3 Mbps for uploads. See Press Release, FCC, FCC Finds U.S. Broadband Deployment Not Keeping Pace 1 (Jan. 29, 2015) (on file with author).

9. Barbara van Schewick, *Network Neutrality and Quality of Service: What a Nondiscrimination Rule Should Look Like*, 67 STAN. L. REV. 1 (2015); Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH. L. 141 (2003) (coining the term).

10. van Schewick, *supra* note 9, at 4; Wu, *supra* note 9, at 141.

11. Protecting and Promoting the Open Internet, *supra* note 7.

12. This phenomenon has been described as "the virtuous cycle of network innovation and [infrastructure development]." See EXEC. OFFICE OF THE PRESIDENT, *COMMUNITY-BASED BROADBAND SOLUTIONS: THE BENEFITS OF COMPETITION AND CHOICE FOR COMMUNITY DEVELOPMENT AND HIGHSPEED INTERNET ACCESS* 6 (2015). Net neutrality has its detractors, concerned that too heavy a regulatory touch would undermine innovation. Providers, on this view, have an incentive to create new value for subscribers in ways that a flat network neutrality rule would undermine. See Christopher S. Yoo,

Emphasizing innovation over everything else is costly. First, as a regulatory objective, Congress has determined that promoting innovation is simply not as important as assuring substantive distributional equality.¹³ At best, innovation is a third-order priority that barely makes an appearance in the Communications Act.¹⁴

Second, universal deployment of broadband is vital because the Internet is today's premier general use technology.¹⁵ Like electricity, the Internet suffuses every aspect of our daily lives. The Internet has become the platform through which people learn about and seek jobs, health care, housing, and education. It defines the way in which currency flows and investments are made. The Internet, moreover, has become an essential feature of the way in which people play, meet life partners, and share intimate thoughts. It plays an essential part of the way in which political and social movements organize and spread. And beyond making phones smart, the Internet today is also enabling our homes, appliances, cars, clothing, and general accessories to be even "smarter."¹⁶

In short, it is the premier communications platform through which public life today is shaped and is increasingly becoming the repository of our individual and collective identity.¹⁷ To be excluded from all of its affordances is either an act of defiance, ignorance, or the consequence of material misfortune and disadvantage.

At best, the singular focus on innovation tenuously advances the imperative to make reasonably comparable communications services available to all Americans. Yet, the trickle down theory might even undermine the very economic and social benefits that policymakers and scholars purport will flow from network neutrality because its immediate beneficiaries are the very elites who already benefit from relatively superior service. Many Americans today have mediocre connections with only limited functionality.¹⁸ Still others are relatively ignorant of or indifferent to the full range of the Internet's affordances and constitutive applications.¹⁹ And a notable number of Americans are completely shut

Beyond Network Neutrality, 19 HARV. J.L. & TECH. 1, 34 (2005). But even opponents share a commitment to innovation over other policy goals.

13. See *infra* Part I.C.

14. See *infra* Part I.C.

15. Cf. ROBERT PLOTKIN, *THE GENIE IN THE MACHINE: HOW COMPUTER-AUTOMATED INVENTING IS REVOLUTIONIZING LAW AND BUSINESS* 30 (2009) (referring to computers as "general-purpose machines" or "universal machines").

16. See generally ZITTRAIN, *supra* note 6 (exploring the past, present, and future of the Internet).

17. See JARON LANIER, *YOU ARE NOT A GADGET* 25 (2010) (discussing the "Singularity" idea).

18. See Philip M. Napoli & Jonathan A. Obar, *The Emerging Mobile Internet Underclass: A Critique of Mobile Internet Access*, 30 INFO. SOC'Y J. 323, 326 (2014).

19. See Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, GN Docket No. 11-121, Eighth Broadband Progress Report, 27 FCC Red. 10,342,

out, with no serviceable connections in their local residential area.²⁰ Recent studies show that the “digital divide” remains a stubborn problem, stimulating the familiar demographic fault lines of race, ethnicity, and income that play a significant role in determining whether a user has access to the Internet.²¹

Race, ethnicity, and income do not just influence whether users have access to the Internet. Those factors also affect how they use it, which, in turn, fundamentally shape the nature of the online world. For example, Blacks, Latinos, rural residents, and low income Americans are more likely to access the Internet through a smartphone or other mobile device than Whites.²² And while this development has helped to close the availability and access gap, mobile devices have a narrower range of functionality. Today, conventional mobile devices do not have many of the capabilities as personal computers. Further, mobile devices are not as immersive because they do not have the same range of storage or processing capacity.²³ Thus, users who can now go online because of mobile technology still cannot do as much online as networked elites. Mobile connections are not a substitute for fixed wired service.²⁴

These findings elaborate the pathbreaking findings that the National Telecommunications and Information Administration published in the 1990s on broadband availability and adoption rates.²⁵ That report is often credited with coining the phrase “digital divide” and sensitizing policymakers and journalists to the fact of disparity between the “information haves and have nots.”²⁶

Race, ethnicity, and income continue to define availability, adoption, and use patterns nearly two decades later. The trickle down theory purports to redress these disparities, but does so through indirection: it promises that infrastructure investment and deployment will be the

10,403–11 ¶¶ 139–56 (2012) [hereinafter Eighth Broadband Progress Report]; see also U.S. CENSUS BUREAU, MEASURING AMERICA: COMPUTER AND INTERNET TRENDS IN AMERICA (2014).

20. Eighth Broadband Progress Report, *supra* note 19, at 10,369–70 ¶¶ 45–47.

21. See David Crow, *Digital Divide Exacerbates US Inequality*, FIN. TIMES (Oct. 28, 2014, 4:03 PM), <http://www.ft.com/intl/cms/s/2/b75d095a-5d76-11e4-9753-00144feabdco.html#axzz3IIsgT5A>.

22. See AARON SMITH, PEW RESEARCH CTR., SMARTPHONES AS AN INTERNET APPLIANCE (2011). Specifically, thirty-eight percent of Black/Latino smartphone users rely on their smartphones while only seventeen percent of non-Hispanic Whites do. *Id.* This distribution might reflect the role of median income, since users with incomes of less than \$30,000 were more than twice as likely as those with incomes of \$50,000 or more to do so. See KATHRYN ZICKUHR & AARON SMITH, PEW RESEARCH CTR., DIGITAL DIFFERENCES (2012).

23. See Napoli & Obar, *supra* note 18, at 324; Eli Noam, *Let Them Eat Cellphones: Why Mobile Wireless Is No Solution for Broadband*, 1 J. ON INFO. POL’Y 470, 480–81 (2011).

24. Cf. Susan P. Crawford, *First Amendment Common Sense*, 127 HARV. L. REV. 2343, 2355–56 (2014).

25. See generally NAT’L TELECOMM. & INFO. ADMIN., FALLING THROUGH THE NET: DEFINING THE DIGITAL DIVIDE (1999) (examining which American households have access to telephones, computers, and the Internet, and which do not).

26. See *id.* at Executive Summary.

fortuitous by-products of formal neutrality. But, unless policymakers address disparity head-on, neutrality could just as likely worsen existing inequalities in the short and long term because its first and most immediate beneficiaries are networked elites. That is, even when networks are “open,” actually existing structural patterns of disparity and difference will remain and determine the ways through which users engage the Internet. If these are not reversed, the relative advantage in access that networked elites hold will reproduce itself over time until it eventually becomes entrenched.

Surprisingly, an unintended—and unrecognized—benefit of the FCC’s network neutrality proceeding, as well as a series of other recent regulatory interventions, is an opening to reclaim the core distributional concerns of the Communications Act.²⁷ The FCC has declared that the Internet is a public general use technology—like electricity—and, accordingly, must be treated under law as a common carrier. Under this rule, service providers must ensure that all members of the public who try to access the Internet are treated equally.²⁸ While the FCC’s vision of equal treatment is predicated on formal neutrality, the Open Internet Rules provide a legal foundation for a new commitment to substantive equality.

This Article uses this potential new commitment to argue for a return to the fundamental principle of equality over neutrality. Some legal scholars already have done pioneering work on bias, discrimination, and harassment in social networking and elsewhere online, and the law’s potential role in stamping them out.²⁹ It is time to turn this project for law reform to broadband infrastructure and service.³⁰ In this vein, the

27. It took strong public pushback to get to this opening. The pivot toward the focus on disparity was chiefly inspired by the public’s record-breaking resistance to the FCC and its Chairman’s intentions to use the neutrality rules to encourage “economic growth, investment, innovation, free expression, and competition.” *Oversight of the Federal Communications Commission: Hearing Before the Subcomm. on Comm. and Tech.* (2014) (statement of Tom Wheeler, Chairman, FCC). The gist of the public’s reaction was not on the form or pace of innovation, but, rather, on the unadorned problem of inequality. See, e.g., Steve Lohr, *F.C.C. Is Deluged with Comments on Net Neutrality Rules*, N.Y. TIMES (July 15, 2014), <http://www.nytimes.com/2014/07/16/technology/a-deluge-of-comment-on-net-rules.html>; Edward Wyatt, *F.C.C. Begins Investigation into Quality of Internet Download Speeds*, N.Y. TIMES (June 13, 2014), http://www.nytimes.com/2014/06/14/business/media/FCC-inquiry-into-ties-between-content-companies-and-service-providers.html?_r=2.

28. See Press Release, FCC, FCC Adopts Strong, Sustainable Rules to Protect the Open Internet (Feb. 26, 2015) (on file with author).

29. See, e.g., Danielle Keats Citron, *Cyber Civil Rights*, 89 B.U. L. REV. 61 (2009); Jerry Kang, *Cyber-Race*, 113 HARV. L. REV. 1130 (2000).

30. In an article that I published five years ago, I addressed the FCC’s failure to abide by important public-regarding procedural norms (embodied in administrative law doctrine, for example) in its implementation of broadband policy. See Olivier Sylvain, *Internet Governance and Democratic Legitimacy*, 62 FED. COMM. L.J. 205 (2010). There, I argued that the agency relied too uncritically on engineering norms in order to promulgate its rules. Now, however, that the agency’s authority to regulate broadband has been scrutinized by federal courts and its current plan for regulating the

Article builds on research on the current “digital divide,” but especially scholarship by Jerry Kang on the similitude and tension in the language of nondiscrimination in debates concerning network neutrality and civil rights.³¹ The Article argues that broadband disparity continues to have consequences for how the poor and racial and ethnic minorities integrate into a host of contexts.

In doing so, however, this Article makes two novel contributions to existing scholarship. First, it attempts to excavate and revive communication law’s core commitment to substantive distributional equality and identifies it as a principle that should guide policy in this area. Second, it urges a shift in regulatory and scholarly focus that better reflects distributional concerns. It does so by identifying interventions for the future.

The Article proceeds in four parts. Part I analyzes the trickle down theory of Internet innovation, arguing that innovation is not a core or even second-order priority of the Communications Act. Deployment and distributional equality, it shows, are the primary objectives of public law in this area. Part II describes the current state of broadband service generally and the distributional fault lines in availability, access, and use. These raw facts underscore how misplaced the singular focus on innovation has been. That the Internet is a general use technology strongly suggests that access and use disparities will exacerbate racial, ethnic, and income disparities elsewhere in public life. Part III describes the network neutrality, as well as “Open Internet” proceeding that led the FCC to promulgate the new rules. While the agency remains loyal to the trickle down theory of innovation, this Article shows, the agency acceded to the public’s demand for equality in broadband policy.

In Part IV, the Article lays out the positive argument for network equality. First, it argues that the concept of substantive equality supplies a productive framework for the regulation of broadband service in ways that the prevailing focus on innovation and formal neutrality do not. It shows, moreover, that recent federal policy holds untapped potential to foster distributional equality of broadband resources, but the FCC has not done enough. Formal neutrality in access to bandwidth is meaningless without greater attention to inequality in the constitutive elements of the network itself. This final Part concludes by summarizing some of the limitations of the network equality framing.

I. THE TRICKLE DOWN THEORY OF INTERNET INNOVATION

All communication technologies shape public life. The Internet is no different. Like industrial book publishing, postal roads, telegraphy, and

provision of service has been subjected to public notice and comment, I turn to the substance of the agency’s policies.

31. See, e.g., Jerry Kang, *Race.Net Neutrality*, 6 J. ON TELECOMM. & HIGH TECH. L. 1 (2007).

radio broadcasting in the past,³² the Internet has facilitated new forms of expression and community.³³

The transmission design on which the Internet has been based for almost four decades enables lay users to communicate almost anything with others anywhere around the world. Thus, today, a user can draw on the vast amounts of information coursing through the Internet to navigate the physical world with little more than a laptop or smart phone. A tourist can, for example, uncover transportation routes, discover the best local eateries, find a restroom, and avoid risky situations, all while video chatting with a friend miles away. But, of course, the Internet affords so much more. A paraplegic patient who lives outside of Dubuque can video chat with a kidney specialist in Chicago. A pop band in Cape Town can collaborate with likeminded musicians in Paris. Political activists can organize street protests in Cairo from anywhere around the world. The possibilities seem endless.

Today's raw physical political economy of Internet access—broadband—sits in stark contrast to all of this dynamic possibility because users in most local areas have the option of only one or two providers.³⁴ As gatekeepers in these areas, they have the incentive to extract fees from casual users and sophisticated edge providers like Netflix and Amazon. These fees cause little concern to those who can afford the premium service; they continue to transmit and download online services and applications as they wish. But those who cannot afford the better service can only scratch the surface of the Internet's rich affordances.

Until recently, in the United States, local access providers' pecuniary prerogatives generally determined lay users' service quality. They could offer tiered pricing schemes so that people who wanted or simply could afford better service could pay for it.³⁵ Access providers could also enter into specialized arrangements with major Internet companies and edge providers to quicken or otherwise privilege access to subscribers. Lay users generally have had little choice in the matter. One recent manifestation of this practice is "zero-rating," where mobile service providers do not count subscribers' connections to affiliated content or applications against data usage limits.³⁶ Mobile providers implement such plans to gain an obvious advantage over competitors.

32. See JAMES W. CAREY, *COMMUNICATION AS CULTURE: ESSAYS ON MEDIA AND SOCIETY* 155–77 (1992); RICHARD JOHN, *NETWORK NATION* (2010); see also Sylvain, *supra* note 30, at 265–67.

33. Cf. BENEDICT ANDERSON, *IMAGINED COMMUNITIES* (1983) (exploring role of capitalism and printing, rise of nation-states, and use of language in the creation and growth of communities).

34. SUSAN P. CRAWFORD, *CAPTIVE AUDIENCE: THE TELECOM INDUSTRY AND MONOPOLY POWER IN THE NEW GILDED AGE* 3, 120–22, 185–86 (2013).

35. van Schewick, *supra* note 9, at 127.

36. *Id.* at 30.

There are reasons to believe that zero-rating might actually help spawn Internet access in developing countries.³⁷

This past February, the FCC substantially circumscribed the extent to which access providers could leverage their market position in this way. The agency promulgated new Open Internet Rules that forbid broadband providers from blocking or discriminating between different kinds of Internet applications and content. Its animating reason for the rules is to encourage innovation. The Commission employs the following syllogism to justify this approach: unimpeded innovation by application developers will generate more user interest which, in turn, will induce access providers to invest in infrastructure which, in turn, will benefit everyone, including the underserved. This is the trickle down theory of Internet innovation. The new rules do this by requiring broadband providers to be “neutral” in how they manage their users’ connections.³⁸

The FCC is not alone in its commitment to promoting innovation. The concept has been the animating concern for the President and other top-level federal policymakers, scholars, and stakeholders on all sides of the network neutrality debate for well over a decade.³⁹ The main disagreement has been over which regulatory arrangement creates the most value for consumers. But innovation is the driving concern for most. The following passage from a January 2015 report by the President’s National Economic Council and Council of Economic Advisers captures the prevailing view:

Over the longer term, broadband adoption also fuels a virtuous cycle of Internet innovation. This cycle begins when new applications of the Internet create demand for more bandwidth, resulting in a wave of network-level innovation and infrastructure investment. As more bandwidth becomes available, application-sector innovators find new ways to use that capacity, creating additional demand, leading to another round of network investment, and so on. While it is impossible to know what the next bandwidth-hungry killer application will be . . . both history and economic theory show that this virtuous cycle is a powerful driver of innovation and economic growth.⁴⁰

37. See Diana Carew, *Zero-Rating: Kick-Starting Internet Ecosystems in Developing Countries*, PROGRESSIVE POL’Y INST. (Mar. 2015), http://www.progressivepolicy.org/wp-content/uploads/2015/03/2015.03-Carew_Zero-Rating_Kick-Starting-Internet-Ecosystems-in-Developing-Countries.pdf.

38. See discussion *infra* Part III.

39. See, e.g., VAN SCHEWICK, *supra* note 5; Wu & Yoo, *supra* note 5; *Net Neutrality*, WHITE HOUSE, <http://www.whitehouse.gov/net-neutrality#section-read-the-presidents-statement> (Oct. 28, 2015); Tim Wu, *Why Have Telecommunications Law?: Anti-Discrimination Norms in Communications*, 5 J. ON TELECOMM. & HIGH TECH. L. 15, 26 (2006) [hereinafter Wu, *Why Have Telecommunications Law?*]; Tom Wheeler, Chairman, FCC, Remarks at Silicon Flatirons Center, Boulder, Colorado (Feb. 9, 2015) (transcript available at <http://www.fcc.gov/document/chairman-wheeler-silicon-flatirons-center-boulder-colorado>).

40. EXEC. OFFICE OF THE PRESIDENT, *supra* note 12.

Policymakers did not originate this framing. They owe it almost entirely to the most prominent information and Internet law scholars and thought leaders of the past decade.⁴¹ The consensus view among advocates and opponents of intervention is that, whatever regulatory arrangement policymakers formulate, they should ensure that the Internet remains an engine for innovation.⁴² Advocates generally argue that, in order for the Internet to continue to thrive, application developers must be able to “innovate without permission.”⁴³ Opponents, on the other hand, assert that the price mechanism in the market is the best way to allocate costs and risks, and that service providers should be given the freedom to develop affiliations with content and application developers to create new value for subscribers.⁴⁴

In any event, both sides of the debate presume that, whatever regulatory choice the agency makes, innovation fosters a wide range of incidental or spillover economic and social benefits that accrue to society as a result. This Part outlines the contours of the debate.

A. NETWORK NEUTRALITY AS INNOVATION POLICY

Neutrality advocates argue that service providers should not be able to ration the quality of users’ broadband connections to further their own pecuniary interests. The staunchest advocates accordingly oppose any proposal that would allow providers to charge a premium to prioritize some Internet connections over others. They argue that most users and application start-ups would not be able to afford the specialized treatment, and that this asymmetry would work to the detriment of invention and innovation on the Internet generally. After all, these advocates point out, online giants like Google and Netflix were once start-ups, too, and only succeeded because they did not have to pay a premium to reach users.⁴⁵

Many of these advocates accordingly argue for a flat-out ban on application and content discrimination. They argue that all Internet users, large or small, should be able to access the applications, content, services, and networked devices of their choice. Access providers, they argue, should not block or otherwise interfere with users’ ability to share

41. See, e.g., VAN SCHEWICK, *supra* note 5; Wu & Yoo, *supra* note 5; see also von Lohmann, *supra* note 5; Lemley & Reese, *supra* note 5.

42. See, e.g., Wu, *Why Have Telecommunications Law?*, *supra* note 39, at 26.

43. See van Schewick, *supra* note 9, at 24–27 n.76.

44. See, e.g., Jonathan E. Nuechterlein, *Antitrust Oversight of an Antitrust Dispute: An Institutional Perspective on the Net Neutrality Debate*, 7 J. ON TELECOMM. & HIGH TECH. L. 19, 24–26 (2009); Daniel F. Spulber & Christopher S. Yoo, *Mandating Access to Telecom and the Internet: The Hidden Side of Trinko*, 107 COLUM. L. REV. 1822, 1848–49 (2007); Yoo, *supra* note 12, at 34.

45. See TIM WU, *THE MASTER SWITCH: THE RISE AND FALL OF INFORMATION EMPIRES* 284 (2010) (discussing the rise of Google and the threat that it and other edge providers face from broadband providers).

ideas and content freely; developers should not have to worry about contracting with providers in order to reach users.⁴⁶ Instead, they argue, providers should be forbidden from discriminating against different applications or content. Providers should simply just use their best efforts to deliver data to their intended destination irrespective of application.⁴⁷ Such a rule, they assert, would ensure that the Internet continues to be the dynamic platform for innovation it has been for the past two to three decades.⁴⁸ Paid prioritization, on the other hand, would only encourage providers to supply high-quality service to those who are willing to pay. “Strong open Internet rules,” they argue, “are necessary to preserve the virtual cycle of innovation and investment and ensure that the Internet remains a robust platform for consumer choice, economic growth and free speech.”⁴⁹

Neutrality advocates, moreover, point to providers’ demonstrable interest in controlling user access to competitor services and applications. For example, Comcast, the most notorious of access providers among neutrality advocates, sought approval from federal regulators of its proposed merger with Time Warner, another dominant access provider.⁵⁰ The merger would have reached about a third of U.S. homes, far more than any of their competitors.⁵¹ The companies expected that, by joining forces, they would meet increasing demand for better Internet-based services and create new value for their subscribers. Neutrality advocates feared that the new combination would exert unprecedented control over Internet connections.⁵² After all, both companies have employed network management practices that leverage their strong market position at the expense of start-up edge providers.⁵³ They have also degraded connections to rival video and voice applications, ostensibly to protect

46. Letter from Michael Beckerman, President & CEO, The Internet Ass’n, to Marlene H. Dortch, Sec’y, FCC (Jan. 6, 2015) (on file with FCC); see also Susan P. Crawford, *Transporting Communications*, 89 B.U. L. REV. 871, 887 (2009); Wu, *supra* note 9, at 150.

47. See BRETT M. FRISCHMANN, *INFRASTRUCTURE: THE SOCIAL VALUE OF SHARED RESOURCES* 348–55 (2012); Susan P. Crawford, *The Internet and the Project of Communications Law*, 55 UCLA L. REV. 359, 403–04 (2007).

48. Wu, *Why Have Telecommunications Law?*, *supra* note 39, at 26; Wu, *supra* note 9, at 150. For advocates of this strong neutrality rule, access providers would only be excused from such obligations in the event of a targeted attack, virus, or other demonstrable threat to the operation of the local network.

49. See, e.g., Letter from Michael Beckerman, *supra* note 46, at 1.

50. Cade Metz, *Why the Comcast-Time Warner Deal Is Far More Dangerous than You Think*, WIRED (Feb. 13, 2014, 4:25 PM), <http://www.wired.com/2014/02/comcasts-45bn-time-warner-buy-change-everything/>; Sanjay Sanghoo, *Why the Feds Should Block Comcast’s Merger with Time Warner Cable*, FORTUNE (Apr. 22, 2014, 2:27 PM), <http://fortune.com/2014/04/22/why-the-feds-should-block-comcasts-merger-with-time-warner-cable/>.

51. Metz, *supra* note 50; Sanghoo, *supra* note 50.

52. Sanghoo, *supra* note 50.

53. Metz, *supra* note 50.

their own affiliated applications or services from the competition.⁵⁴ Partly in response to strong public resistance to the merger, the FCC signaled its wariness about the deal.⁵⁵ Seeing the writing on the wall, Comcast and Time Warner withdrew the plan.

Generally, neutrality advocates endorse a general rule against data discrimination, but would accommodate network management practices that assure “quality of service” for real-time or latency-sensitive audio or video applications—that is, accommodations for applications that require data to be sent in a particular way in order for the applications with which they are associated to function as they should.⁵⁶ Such an exception recognizes that being completely agnostic about the applications or bits of data that flow through the network would diminish the quality of some of the most popular video streaming applications. A rule of perfect neutrality that makes no exceptions for latency-sensitive applications, these advocates argue, would actually be biased in favor of applications like e-mail or even web browsers that are not as latency sensitive.

Opponents of network neutrality argue that access providers pose no real harm to the vast majority of Internet users. For them, the question should not be whether broadband providers’ networks must be open but rather how policy can help providers create the most value for consumers. They argue that, instead, policymakers should take lessons from competition law.⁵⁷ The antitrust laws after all protect consumers and small companies from the predations of dominant incumbents.⁵⁸ Thus, regulators should focus instead on whether access providers actually have market power or engage in unfair trade practices.⁵⁹ If they

54. See, e.g., *Comcast Corp. v. FCC*, 579 F.3d 1 (D.C. Cir. 2009); *Madison River Communications, LLC*, File No. EB-05-IH-0110, 20 FCC Rcd. 4295 (Enf’t Bureau 2005) (order adopting consent decree); see also Press Release, *supra* note 28.

55. Devika Krishna Kumar, *Comcast Drops Time Warner Cable Bid After Antitrust Pressure*, REUTERS (Apr. 24, 2015, 6:25 PM), <http://www.reuters.com/article/us-comcast-timewarnercable-idUSKBN0NE2D220150424>.

56. See Wu, *supra* note 9, at 165. “Latency is a measure of the time it takes for a packet of data to travel from one point to another in a network and often is measured by round-trip in milliseconds.” Eighth Broadband Progress Report, *supra* note 19, at 10,362 ¶ 23.

57. There has been hearty debate among scholars about how to administer network management regulations. See, e.g., Philip J. Weiser, *The Future of Internet Regulation*, 43 U.C. DAVIS L. REV. 529, 569 (2009) (arguing a self-regulatory body subject to public agency oversight as best strategy for Internet regulation); Sylvain, *supra* note 30 (arguing for a participatory governance approach to Internet policymaking).

58. See John B. Kirkwood, *The Essence of Antitrust: Protecting Consumers and Small Suppliers from Anticompetitive Conduct*, 81 FORDHAM L. REV. 2425, 2433 (2013) (arguing that consumer welfare is the priority in antitrust law based on legislative history, case law, popular opinion, and ease of administration); see also Herbert Hovenkamp, *Implementing Antitrust’s Welfare Goals*, 81 FORDHAM L. REV. 2471, 2474 (2013); John B. Kirkwood & Robert H. Lande, *The Fundamental Goal of Antitrust: Protecting Consumers, Not Increasing Efficiency*, 84 NOTRE DAME L. REV. 191, 211–36 (2008).

59. See generally CARL SHAPIRO & HAL R. VARIAN, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* (1998) (applying traditional economic theories to modern information-based technologies).

do not, advocates of this perspective argue, access providers should be able to affiliate or negotiate connection terms with edge providers like Netflix or Google on an individualized basis.⁶⁰ Regulators could assess the validity of such arrangements on a case-by-case basis. Such an approach, critics of the Open Internet Rules argue, would increase value for consumers and invite innovations that only special vertical and horizontal arrangements can create.⁶¹ In any event, they note that price is an essential signal of consumers' willingness to pay. Tiered pay-for-priority schemes like these allow providers to earn a return on their investment while also allowing consumers to express their respective service preferences.

Other opponents express support for some network neutrality regulation of service providers, but strongly resist rendering broadband service "a utility" for fear that it would inhibit or delay investment and innovation in nascent applications and services. For example, these opponents hold, such approach could stall improvements in new mobile health products and services like remote monitoring of patients and mobile-connected pill bottles.⁶² Thus, while this group's opposition to network neutrality is more narrowly tailored to defining the service as "a utility" (akin to electricity), it is nevertheless similarly grounded in support for innovation.

B. WHAT THE INNOVATION FIXATION MISSES

The debate among policymakers and scholars about how to allocate duties and costs in furtherance of innovation in the market for broadband service has framed federal policymakers' decisionmaking in the area for the past decade or so. But the preoccupation with innovation in information law and public policy has been in vogue for much longer, influencing technology company managers, scholars, and policymakers inside and outside of communications.⁶³

60. *Verizon v. FCC*, 740 F.3d 623, 659–61 (D.C. Cir. 2014) (Silberman, J., dissenting).

61. Framework for Broadband Internet Service, Open Internet Rulemaking, GN Docket Nos. 10-127, 14-28, Comments of Verizon and Verizon Wireless (July 15, 2014); *see also* Ev Ehrlich, *Net Neutrality Sounds Good, but It's Worse*, SFGATE (July 24, 2014), <http://www.sfgate.com/opinion/openforum/article/Net-neutrality-sounds-good-but-it-s-worse-5645596.php>; Ariel Rabkin, *The Internet Isn't Plumbed Like the Water System*, TECH. POL'Y DAILY (July 16, 2014), <http://www.techpolicydaily.com/communications/internet-isnt-plumbed-like-water-system/>.

62. *See* Letter from Joel White, Exec. Dir., Health IT Now Coal., Bradley Merrill Thompson, Gen. Counsel, M-Health Regulatory Coal., Robert B. McCray, President & CEO, Wireless-Life Scis. All., to Tom Wheeler, Chairman Fed. Comm'n Comm'n, et al. (Jan. 15, 2015) (on file with FCC).

63. I do not seek here to answer the important question of *how* innovation has prevailed on policymakers at the expense of other important regulatory priorities. It is enough here to observe, simply, that innovation is in vogue. *See generally* CLAYTON M. CHRISTENSEN, *THE INNOVATOR'S DILEMMA: WHEN NEW TECHNOLOGIES CAUSE GREAT FILMS TO FAIL* (1997) (addressing significance of corporate response to innovation in technology and change in market); *see also* Jill Lepore, *The*

Consider the influence of Moore's Law, a concept original to information and computer science.⁶⁴ In 1965, Gordon Moore, who was then the leading researcher for a major semiconductor developer in Silicon Valley, predicted that microchip processing capacity would increase by "roughly a factor of two per year."⁶⁵ That is, improvements in computing capacity would occur at a predictable exponential rate over time. That claim has not been perfectly realized because, in fact, advances in the area come in fits and starts.⁶⁶ Nevertheless, the gist of the claim has been influential.⁶⁷ Moore's prediction has proven persuasive enough that top researchers and technology company managers now count on it like a law of physics.⁶⁸ Manufacturers were integrating it into their industrial design practices within a decade of its announcement. The largest semiconductor makers today continue to rely on it to measure the pace of their manufacturing and marketing efforts, irrespective of whether in fact it accurately describes the pace of their native development processes.

As influential as it is, however, Moore's Law is also very limited in scope; it does not explain (or purport to explain) the manner in which processing capacity is distributed among lay consumers. In fact, while contemporary developers are the likeliest to benefit from each incremental improvement in computing capacity, most consumers do not bear witness to each of the advances. In this regard, Moore's Law does not offer an account of how different segments of the population actually receive or benefit from improvements in processing capacity. Moreover, the rate of improvement in computing capacity varies by device and most users do not have access to anything but mass produced devices. Communications and management scholars have recognized as much, having developed taxonomies of adoption that explain how new technologies disseminate through society over time—from beta release to popular adoption to obsolescence.⁶⁹

These actual distributional factors are precisely what the preoccupation with innovation misses. This is not to say that policymakers

Disruption Machine: What the Gospel of Innovation Gets Wrong, NEW YORKER (June 23, 2014), http://www.newyorker.com/reporting/2014/06/23/140623fa_fact_lepore?currentPage=all.

64. See BOB SCHALLER, THE ORIGIN, NATURE, AND IMPLICATIONS OF "MOORE'S LAW" (1996).

65. *Id.* at 7.

66. See, e.g., John Markoff, *IBM Discloses Working Version of a Much Higher-Capacity Chip*, N.Y. TIMES (July 9, 2015), http://www.nytimes.com/2015/07/09/technology/ibm-announces-computer-chips-more-powerful-than-any-in-existence.html?_r=0.

67. To understand the force of the claim, note that the theory of natural selection in evolutionary biology does not purport to predict the rate at which prevalent observable human characteristics change.

68. CORNELIS DISCO, GETTING NEW TECHNOLOGIES TOGETHER 206–07 (1998); see also SCHALLER, *supra* note 64.

69. See generally GEORGE M. BEAL & JOE M. BOHLEN, THE DIFFUSION PROCESS (1981) (discussing how farmers accept new tools and ideas).

and scholars have not addressed distributional concerns when they discuss innovation. They have. But their focus has been narrow. At least in the Open Internet Rules, the FCC has sought to allocate duties and entitlements that balance the interests of a very narrow range of networked elites, including, for example, start-up application developers, prominent edge providers, local access providers, and major television and film production studios. The average lay users are secondary. The underserved—the people for whom Congress arguably enacted the Communications Act—are overlooked.

C. INNOVATION IS A THIRD-ORDER PUBLIC LAW PRIORITY

In its new rules, the FCC generally seeks to facilitate innovation by requiring local access providers to treat data neutrally—that is, to refrain from discriminating or blocking Internet connections based on the data they contain or the edge providers and users from which they originate. But these rules do not concern themselves directly with the distributional question of whether or how lay users receive and use those connections. And to the extent that the rules do, they do so only through indirection. That is, policymakers assume that innovation (by the narrow band of developers mentioned above) will trickle down to lay users, irrespective of how its outputs get distributed among them.

But Congress made universal service deployment the primary concern of the Communications Act. The statute has many other, second-order objectives addressed to the telecommunications and information services industries, including infrastructure investment,⁷⁰ competition and interconnection,⁷¹ privacy,⁷² law enforcement,⁷³ and national security.⁷⁴ The amended statute, however, is unequivocal about its central purpose. Its first paragraph provides that the FCC is

to make available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges.⁷⁵

Congress added the absolutist language in this provision (in essence, “without discrimination on the basis of race, color, religion, national

70. See 47 U.S.C. § 1302 (2015); see also *id.* § 157.

71. See 47 U.S.C. §§ 201, 202 (2015); *id.* §§ 251, 252.

72. 18 U.S.C.A. §§ 2510–2522 (West 2015).

73. Communications Assistance for Law Enforcement Act, 47 U.S.C. § 1001–1021 (1994).

74. Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT) Act of 2001, Pub. L. No. 107-56, 115 Stat. 272 (2001).

75. 47 U.S.C. § 151 (1996). Before 1996, the provision simply provided that the FCC was responsible for “regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States a rapid, efficient, nationwide, and worldwide wire and radio communication service.” *Id.*

origin, or sex”) in 1996 to ensure “nondiscrimination.”⁷⁶ This concept was far different from the pro-competitive sense of “nondiscrimination” as it has appeared in the network neutrality debate. Where the latter is addressed to applications or services, in 1996, Congress sought to make plain that the FCC’s central purpose is to protect users and people from discrimination irrespective of their station in life. Congress reiterated this point in Section 706 of the 1996 amendments.⁷⁷ In this way, the Act, including and especially the 1996 amendments, bespeaks Congress’ unequivocal commitment to ensuring that communication technology is widely available to all users irrespective of who or where they are. And further that such service be “reasonably comparable.”⁷⁸

Congress has been consistent about this statutory objective across media platforms. For example, again, in the 1996 amendments, Congress announced a “national policy of diversity of media voices” in recognition that too few broadcast stations and producers were owned or operated by racial minorities or women.⁷⁹ The FCC subsequently relied on this 1996 amendment to propose a rule that would explicitly forbid discrimination on the basis of such characteristics. It sought to eliminate longstanding patterns of exclusion in order to diversify programming over the airwaves in a way that better reflected the variety of tastes of U.S. consumers.

Congress, on the other hand, has not made innovation even a secondary regulatory priority in the Communications Act. It invokes the concept in the statute only rarely.⁸⁰ In the few instances in which Congress does use some cognate of the term in the Act, it is just one of a variety of factors that the FCC must consider before making a specific regulatory decision. Congress, for example, invokes the term in connection with the FCC’s authority to determine whether a telecommunications access provider has complied with rate requirements.⁸¹ In this context, innovation is just one of a handful of factors that the agency must consider. The only other place in which Congress chose to use the word “innovate” or “innovative” in the Act is in reference to the general policy priorities of the Corporation for Public Broadcasting.⁸² There,

76. H.R. REP. NO. 104-458, at 32 (1996) (Conf. Rep.).

77. See 47 U.S.C. § 1302(a) (1996) (“The Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.”).

78. See H.R. REP. NO. 104-458, at 18.

79. See 47 U.S.C. § 257(a), (c) (1996).

80. The word “innovation” appears just two times in the Communications Act, “innovative” appears just once, and “innovate” is absent entirely.

81. 47 U.S.C. § 226(h)(3) (2015) (discussing the breadth of service offerings, service quality, and price).

82. See 47 U.S.C. § 396(g)(1)(A) (2015).

innovation must be weighed against program “quality, diversity, creativity, [and] excellence.”⁸³

But the statute’s relative indifference to innovation has evidently not been an impediment for those debating the substantive merits of network neutrality. Purely as a matter of constitutional and administrative law doctrine, however, the text of the statute must constrain the scope of the agency’s authority to promulgate rules in the area. The FCC accordingly has hewed to some stated authority in the Act in order to announce the new rules, all while remaining loyal to its real interest in innovation. Specifically, the FCC has turned to provisions that encourage universal deployment of broadband.⁸⁴ Its argument proceeds as follows: openness and nondiscrimination encourage users and developers to create new applications and content; the more varied Internet applications are, the more likely that users will adopt broadband service; the more new users, the more likely that providers will invest in their networks and reach even more new users. For the agency and other proponents of the trickle down orthodoxy, universal deployment is innovation’s happy by-product.

In fact, however, the FCC’s real interest in innovation is orthogonal to the statute’s core distributional concern. The rules, after all, will remain fully applicable well after everyone is well connected, precisely because universality is not their statutory objective.⁸⁵ This is not to say that a perfectly open national system of broadband might not encourage universal employment. Nor is this to say that the Open Internet Rules are illegitimate to the extent they promote innovation or encourage entrepreneurship and competition. The D.C. Circuit rightfully held that infrastructure investment is a reasonable objective of the rules under Title I of the Communications Act.⁸⁶ The point I make here is that, under the statute, innovation is at best a third-order priority under the Communications Act. As it relates to broadband in particular, Congress actually expressed near indifference about how the FCC should regulate broadband—whether through a system of openness or something else. Instead, the statute authorizes the agency to regulate *or simply refrain from regulating* broadband, as long as, whatever action the agency chooses “encourage[s]” broadband service “deployment on a reasonable and timely basis.”⁸⁷

83. 47 U.S.C. § 396(g)(2)(C) (2015).

84. *Verizon v. FCC*, 740 F.3d 623, 643–45 (D.C. Cir. 2014); *see also* Eighth Broadband Progress Report, *supra* note 19, at 10,385 ¶ 92; Preserving the Open Internet, Broadband Industry Practices, GN Docket No. 09-191, Report and Order, 25 FCC Rcd. 17,905, 17,905 ¶ 1 (2010).

85. The agency anticipates universal broadband adoption by 2022. *See* Eighth Broadband Progress Report, *supra* note 19, at 10,344–45 ¶ 3.

86. *Verizon*, 740 F.3d at 642.

87. The statute provides in pertinent part that in order to “encourage the deployment on a reasonable and timely basis” of broadband service, the FCC has the discretion to choose between

Universal deployment is not a matter that should be so easily contorted to advance other objectives. The Communications Act asserts that the FCC's core reason for being is to protect against distributional unfairness in the delivery of emergent communications services. To acknowledge as much would focus attention to whether broadband in the United States is available "to all Americans."

The answer to that inquiry is not a happy one. At least, it is complicated. As I show below in Part II, the Internet ecosystem today is defined by disparity and difference. There, I outline what the state of broadband service actually is in the United States, irrespective of how rapid the benefits of openness will flow to innovators and other networked elites.

II. THE REALITY OF NETWORK DISPARITY

Since the establishment of the United States Postal Service in the late eighteenth century, universal deployment of communications infrastructure has long been a core public law priority in the United States. But the statutory injunction in the Communications Act to assure universal deployment of communication technologies is especially pertinent at a time when networked communications have become essential to the operation of public life. This is why the FCC and other commentators have rightfully called the Internet the "general use" technology of our time.⁸⁸

In fact, however, we are far short of universal deployment today. Current patterns in broadband delivery across the country suggest something more like "information redlining" in which providers fail to build and service racial and ethnic minorities or lower income and rural communities on the same terms as wealthier communities.⁸⁹

This Part briefly chronicles the manner in which broadband service is unevenly distributed. Exhaustive research by the U.S. Census Bureau, the Pew Research Center, and others shows definitively that, first, disparities in broadband availability, adoption, and use have a substantial impact on the manner in which different users engage the Internet and, second, that these disparities track existing racial, ethnic, and class fault

"price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment." 47 U.S.C. § 1302(a) (1996).

88. *Cf.* PLOTKIN, *supra* note 15, at 30 (referring to computers as "general-purpose machines" or "universal machines").

89. 140 CONG. REC. 14844 (daily ed. June 28, 1994) (statement of Sen. Markey); *see also* John Eggerton, *MMTC Tells Government There Is Need for More than Speed*, BROADCASTING & CABLE (Jan. 15, 2015, 4:00 PM), <http://www.broadcastingcable.com/news/washington/mmtc-tells-government-there-need-more-speed/137119>.

lines.⁹⁰ If the Internet is the premier general use technology of our time, exclusion has substantial costs for the underserved and society at large. These findings are alarming because they run against the clear statutory objectives of communications law.

A. THE PROMISE OF AN OPEN INTERNET

To understand the scope of what is at stake, it is worth noting how embedded the Internet is in public life today. It inhabits practically all aspects. Its most familiar applications—the World Wide Web and e-mail—enable people to communicate with landlords, political allies, doctors, and lovers. Other applications provide important information to consumers about products and services, including comparative price information about health care options, cars, and homes. They enable house hunters to find a place to live, homemakers to survey design ideas for their home, job seekers to communicate with prospective employers, and drivers to navigate backcountry roads.

The Internet today is also a vital component of our political culture. Partisans, activists, and casual users alike rely on social media and an array of Internet applications to mobilize people around issues and electoral campaigns. Some of these efforts seek to spread awareness about intractable sociopolitical and economic problems. Others are far more whimsical.⁹¹

Ordinary people are not the only beneficiaries of the Internet's affordances. The networked communication technologies of today have become a terrific source of data about consumers and their habits. This, in turn, has enabled "data brokers" and social networking administrators to analyze and predict user behavior and preference.⁹² These advances have created new markets in search, reputation, and finance.⁹³ While many of these changes challenge conventions in national security, privacy, and consumer protection, firms continue to collect and share online data with third-party brokers quite freely. Online user data has become one of the driving currencies of the networked information

90. See, e.g., U.S. CENSUS BUREAU, *supra* note 19; Aaron Smith, *Why Pew Internet Does Not Regularly Report Statistics for Asian-Americans and Their Technology Use*, PEW RESEARCH CTR. (Mar. 29, 2013), <http://www.pewinternet.org/2013/03/29/why-pew-internet-does-not-regularly-report-statistics-for-asian-americans-and-their-technology-use/>.

91. Jason Wells, *Cancer Patient's Pre-Surgery Flash Mob Dance Goes Viral, Inspires*, L.A. TIMES (Nov. 8, 2013), <http://articles.latimes.com/2013/nov/08/local/la-me-ln-cancer-patient-viral-video-flash-mob-dance-20131108>.

92. Paul Ohm, *Broken Promises of Privacy: Responding to the Surprising Failure of Anonymization*, 57 UCLA L. REV. 1701, 1760 (2010).

93. FRANK PASQUALE, *THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND INFORMATION* (2015).

economy.⁹⁴ And, users have been complicit, volunteering their information for fear of being left out.

These are just the conventional affordances of the Internet. Today, all manners of devices and appliances are connected.⁹⁵ Brick-and-mortar retailers, homebuilders, automobile manufacturers, and consumer appliance developers have over the past decade integrated networked communications technology into their products. Cars and homes are now equipped with remotely operated security and lighting systems. Clothes now share and collect location and biometric data about their wearers and the people immediately around them.⁹⁶ And all of these connections and transactions occur seamlessly, practically in real time, giving consumers the sense that, no matter where they are, they are always connected to the networked world.⁹⁷ This is what observers mean when they speak of the “Internet of Things.”⁹⁸

While much of this sounds like futurism, it is a core preoccupation of network communication technology firms today. Eric Schmidt, the Chairman of online search and advertising giant Google, recently forecasted that “the Internet will disappear” because “it will be part of your presence all the time.”⁹⁹ Appliances, devices, and clothes, he predicts, will interact with the rooms we walk into and the people we meet, with our permission but mostly out of sight.¹⁰⁰ This “post-Internet” world will depend increasingly on algorithms and other automated systems that will interact with each other on our behalf.¹⁰¹ The most dramatic, quasi-religious version of this portrayal envisions The Transhuman

94. See, e.g., Claire Cain Miller & Somini Sengupta, *Selling Secrets of Phone Users to Advertisers*, N.Y. TIMES (Oct. 5, 2013), <http://www.nytimes.com/2013/10/06/technology/selling-secrets-of-phone-users-to-advertisers.html?pagewanted=all> (discussing how companies like Google and Facebook are trying to find new ways to monetize their user bases by finding way to target them with specific ads); Danny Yadron, *FTC Says Brokers Bid Private Data*, WALL ST. J. (May 7, 2013 6:22 PM), <http://www.wsj.com/articles/SB10001424127887323687604578469392421956334>.

95. See PEW RESEARCH CTR., *DIGITAL LIFE IN 2025* (2014).

96. Mat Honan, *The Future of Wearables Isn't a Connected Watch*, WIRED (Jan. 29, 2015, 5:00 AM), <http://www.wired.com/2015/01/useful-wearables/>.

97. See CHRISTOPHER STEINER, *AUTOMATE THIS: HOW ALGORITHMS CAME TO RULE OUR WORLD* 112 (2012).

98. See, e.g., JEREMY RIFKIN, *THE ZERO MARGINAL COST SOCIETY: THE INTERNET OF THINGS, THE COLLABORATIVE COMMONS, AND THE ECLIPSE OF CAPITALISM* (2014); R.S. Raji, *Smart Networks for Control*, 31 SPECTRUM, IEEE 49 (1994).

99. Michael Moore, *Google Chairman Expects Internet to 'Disappear' Soon*, TECHWEEK EUROPE (Jan. 23, 2015, 12:06 PM), <http://www.techweekeurope.co.uk/e-innovation/eric-schmidt-google-internet-disappear-160126>.

100. *Id.*

101. Cf. Ian Wallace, *What Is Post-Internet Art? Understanding the Revolutionary New Art Movement*, ARTSPACE (Mar. 18, 2014), http://www.artspace.com/magazine/interviews_features/post_internet_art (“[P]ost-Internet artists have moved beyond making work dependent on the novelty of the Web to using its tools to tackle other subjects. And while earlier Net artists often made works that existed exclusively online, the post-Internet generation (many of whom have been plugged into the Web since they could walk) frequently uses digital strategies to create objects that exist in the real world.”).

Singularity, in which all information is shared freely for the betterment of humanity.¹⁰²

The Internet in this vein has become the general repository of our individual and shared identities. Information about us online reflects who we are individually and collectively. If you are not online, you might as well be invisible. The benefits of online participation greatly outweigh its costs. Full network integration is now imperative, and exclusion, potentially disastrous.

B. INTERNET ACCESS TODAY AS IT EXISTS IN FACT

The Internet's indispensability is not lost on most Americans. According to the Census Bureau's 2013 data, about 74% of American households use the Internet, up from 18% in 1997.¹⁰³ But its demonstrable growth masks the manner and rate at which lay users are connecting. To say that people are using the Internet more than they ever have does not say much about the character of their uses, or the purposes to which they are putting their connections.

In fact, many people do not have all of the affordances of the Internet at their fingertips. We know that users and application developers alike, no matter how savvy they might be, are only as innovative and sociable online as their physical points of contact with the Internet allow them to be. And for many users, bad or unreliable service is a feature of their service rather than a bug. The disparities between those with great service and those with typically poor or mediocre connections manifest themselves in a variety of complicated ways, but generally correlate with race, ethnicity, and class. In other words, we are very far from being "post-Internet" today.

Yet, most users just assume that high-speed Internet service is always available. In fact, however, it is neither speedy nor reliable for everyone. Only the most well-to-do have access to the best broadband service. That is, a relatively small fraction of Americans have platinum broadband service, a majority have limited but good enough service to engage a variety of high bandwidth applications like Netflix and other services simultaneously, and a small but notable fraction have poor or no service at all.¹⁰⁴ This breakdown is largely defined by a variety of demographic factors that affect users' willingness or ability to adopt service. In this regard, it is not unlike the market for goods and services in all of public life. From big-ticket necessities like healthcare and housing to more leisurely pursuits like air travel and fine dining, public

102. See LANIER, *supra* note 17, at 25–26.

103. THOM FILE & CAMILLE RYAN, U.S. CENSUS BUREAU, COMPUTER AND INTERNET USE IN THE UNITED STATES: 2013, at 2, 3 (2014).

104. PEW RESEARCH CTR., BROADBAND TECHNOLOGY FACT SHEET (2013), <http://www.pewinternet.org/fact-sheets/broadband-technology-fact-sheet/>.

life in the United States is characterized by an unequal distribution of goods and services—a social arrangement in which the proverbial one percent can afford the best, a majority can afford passable goods and services, and a meaningful minority have little to nothing at all.¹⁰⁵

In this regard, broadband service disparities are not random; they track the very same demographic fault lines of race, ethnicity, and class that define public life generally in the United States. Here, in this Subpart, I catalogue some of the ways in which these disparities manifest themselves nationally. To be clear, broadband service data is generally difficult to synthesize. Some reports, for example, rely on obsolete or inapposite speed benchmarks.¹⁰⁶ Others do not disaggregate between fixed and mobile broadband connections, let alone different kinds of fixed service, such as DSL, cable, and fiber.¹⁰⁷ Still others do not distinguish between service availability like the sheer existence of service that passes by the home and adoption, in essence, the choice to open a subscription. Nevertheless there is sufficient available data to make modest and incontrovertible observations about broadband service disparity today.

I. Access and Adoption

Availability rates correlate significantly with locality.¹⁰⁸ The FCC reported in 2012 that nineteen million Americans, six percent of the population, did not have fixed broadband service available to them in their local area.¹⁰⁹ Three-quarters of this group lives in rural areas where population density is very low. One reason for this disparity is that the “business case” for building and administering service to remote and sparsely populated areas is difficult to make. Without government subsidies, the building and administration of new networks is prohibitively expensive.¹¹⁰

105. See generally THOMAS PIKETTY, *CAPITAL IN THE TWENTY-FIRST CENTURY* (Arthur Goldhammer, trans. 2014). This state of affairs is hardly something with which most people are comfortable. And, yet, disparities remain and, now, appear to have become one of the defining features of American life.

106. See, e.g., Eighth Broadband Progress Report, *supra* note 19, at 10,364, 10,386–87 ¶¶ 29, 97 (referring to 3 Mbps/768 kbps benchmark rather than current regulatory standard of 4 Mbps/1 Mbps); Press Release, FCC, Connecting America: The National Broadband Plan 6 (Mar. 17, 2010) (on file with author) (recognizing dissonance between available data reported by providers and new benchmark).

107. See, e.g., PEW RESEARCH CTR., *supra* note 104.

108. Eighth Broadband Progress Report, *supra* note 19, at 10,379 ¶ 80; see also Olivier Sylvain, *Broadband Localism*, 73 OHIO ST. L.J. 795 (2012).

109. Eighth Broadband Progress Report, *supra* note 19, at 10,359–58 ¶¶ 45–47. Cable and DSL providers account for the largest portion of the service. *Id.* at 10,374 ¶ 60.

110. *Id.* at 10,369–86 ¶¶ 44–93.

Meanwhile, the rate of adoption in the United States is around seventy percent today.¹¹¹ This is a substantial increase from 2000. The main barriers to user adoption are different from that for broadband deployment. Today's user adoption barriers include service cost, the lack of digital literacy, and the perceptions about the Internet's lack of relevance.¹¹²

To put a finer point on it, about one in four American households with access do not use the Internet.¹¹³ About a quarter of that population reports that the monthly cost of broadband service is too expensive to justify.¹¹⁴ Here, income is significantly correlated with the rate at which households actually adopt service when it is available in their area.¹¹⁵ Many in this group, moreover, tend to be older, make less than \$30,000 per year, and have less than a high school education.¹¹⁶ In short, income is among the strongest determining variables of Internet access and use.¹¹⁷

Residence or geography, too, is a major factor, with states in the Deep South showing the lowest rates in the country of households that are connected to broadband.¹¹⁸ This geographic trend further supports data showing that median household income is an important driver of broadband adoption rates.¹¹⁹

Nearly half of the people in households who choose not to subscribe but otherwise have access to broadband report that they simply do not want it.¹²⁰ The most commonly given reason for why members of this group do not subscribe to broadband (or even dial-up) is the perception that the Internet is not relevant or useful to their lives.¹²¹ For example, many in this group find the Internet sufficiently irrelevant such that they

111. See PEW RESEARCH CTR., *supra* note 104; Eighth Broadband Progress Report, *supra* note 19, at 10,394 ¶ 120 (stating the FCC reported that about two-thirds of American households had adopted the service by 2012); see also FCC, INTERNET ACCESS SERVICES: STATUS AS OF DECEMBER 31, 2013, at 11–13 (2014).

112. Eighth Broadband Progress Report, *supra* note 19, at 10,403–11 ¶¶ 139–56.

113. U.S. CENSUS BUREAU, *supra* note 19.

114. *Id.*

115. See Mark Dutz et al., *The Substantial Consumer Benefits of Broadband Connectivity for U.S. Households*, INTERNET INNOVATION RELIANCE 28 (July 2009) (“In 2008, 88% of high-income households (with annual household income exceeding \$100,000) [subscribed] to broadband, while only 41% of low-income households (with annual income less than \$25,000) had adopted it.”); SMITH, *supra* note 22, at 10 (finding, in 2010, that one-third of broadband users subscribed to a “premium” Internet access service, paying a little over forty-one dollars per month on average for it).

116. SMITH, *supra* note 22, at 10; see also Eighth Broadband Progress Report, *supra* note 19, at 10,378 ¶ 75.

117. See COUNCIL OF ECONOMIC ADVISERS, MAPPING THE DIGITAL DIVIDE (2015).

118. FILE & RYAN, *supra* note 103.

119. See Andrea Peterson, *Why the South Lags Behind When It Comes to Home Broadband Use*, WASH. POST (Nov. 17, 2014), <http://www.washingtonpost.com/blogs/the-switch/wp/2014/11/17/why-the-south-lags-behind-when-it-comes-to-home-broadband-use/>.

120. U.S. CENSUS BUREAU, *supra* note 19.

121. *Id.*; see also ZICKUHR & SMITH, *supra* note 22.

opt to not own a computer.¹²² And, yet, about twenty-one percent of non-adopters admit to their lack of sophistication or literacy about the online world.¹²³

2. *Race and Ethnicity*

Race and ethnicity also bear on availability and adoption rates. Tribal communities, for example, are more likely than others to lack service.¹²⁴ This, however, is largely because any group, irrespective of race or ethnicity, is less likely to have access in rural areas.¹²⁵ Most racial and ethnic minorities, on the other hand, live in and around urban areas where population density is characteristically very high and broadband is likely to be available. But, while access has increased dramatically across demographic groups in just the past five years, racial disparities in Internet access, adoption, and use persist even in cities. As of 2013, about sixty-five percent of Hispanic households and sixty percent of non-Hispanic Black households have broadband at home.¹²⁶ Compare this to the seventy-six percent of non-Hispanic White households with such connections.¹²⁷ Observers generally attribute the low adoption rate of Hispanic and non-Hispanic Black households to the prohibitively high cost of service or equipment.¹²⁸

A recent Field Poll in California also found that adoption rates among Latinos are starkly lower than those for other demographic groups. While seventy-five percent of all adults in California have broadband service at home, that rate is thirty-two percent for those who

122. Eighth Broadband Progress Report, *supra* note 19, at 10,409 ¶ 152.

123. ZICKUHR & SMITH, *supra* note 22; *see also* JOHN B. HERRIGAN, DIGITAL READINESS: NEARLY ONE-THIRD OF AMERICANS LACK THE SKILLS TO USE NEXT-GENERATION “INTERNET OF THINGS” APPLICATIONS (2014), http://jbhorrigan.weebly.com/uploads/3/0/8/0/30809311/digital_readiness.horrigan.june2014.pdf. *See generally* *The Complexity of “Relevance” as a Barrier to Broadband Adoption*, BENTON FOUND. (Jan. 6, 2016 3:55 PM), https://www.benton.org/blog/complexity-relevance-barrier-broadband-adoption?utm_campaign=Newsletters&utm_source=sendgrid&utm_medium=email (“[S]uccessful interventions will need to unpack the relevance concept and address “ability to pay” instead of ‘willingness to pay’ for broadband at home. Further research, including additional questions on nationwide broadband adoption surveys, is also needed to establish a more in-depth understanding of relevance as an issue, particularly for individuals and families in low-income communities where cost remains the most significant barrier to adoption.”).

124. *See* Eighth Broadband Progress Report, *supra* note 19, at 10,378 ¶ 73.

125. *Id.*

126. *See* Smith, *supra* note 90 (noting that Pew does not collect data on broadband adoption and use by Asian Americans largely because Asian Americans constitute “a very small slice of the population, 3.7 percent in the 2000 Census”).

127. *Id.*

128. *See* Danielle Keh et al., *The Cost of Connectivity 2014: Data and Analysis on Broadband Offerings in 24 Cities Across the World*, OPEN TECH. INST. (Oct. 30, 2014), <http://www.newamerica.org/oti/the-cost-of-connectivity-2014/>.

have not graduated from high school and forty-six percent for Latinos.¹²⁹ The consequences of these disparities are significant. As one example, consider that Latinos, even as the most underinsured group in the country, have been the least likely to enroll in health insurance through HealthCare.gov under the Affordable Care Act largely because of the language barrier and a related distrust of government.¹³⁰

Race and ethnicity also figure into the availability and quality of service in schools. According to one recent report, schools that serve large populations of African American and Latino students are nearly half as likely as predominately White schools to have access to broadband.¹³¹

Race, moreover, is significantly correlated with the kind of device on which users rely to access the Internet. According to the Pew Research Internet Project, for the past couple of years, Blacks and Latinos have become almost twice as likely as Whites to rely on their smartphones as their exclusive means of accessing the Internet.¹³² Even if they are as likely as Whites to own any sort of mobile phone, researchers have found that Blacks and Latinos report outsized reliance on smartphones and other wireless devices to gain access to the Internet.¹³³

In some regards, this mobile trend is good news because it suggests a way to close the “digital divide” in Internet access.¹³⁴ Blacks and Latinos use their wireless devices at greater rates to play music, record and watch videos, access social networking sites, check their bank balance, or participate in a video chat. Whatever intervention policymakers undertake, they should explicitly consider that mobile broadband is the main way through which historically underserved communities gain access.

But the new trend also is a peculiar kind of achievement since, today, mobile service is not as speedy or reliable as wireline service on a

129. Patrick May, *Poll: California's Digital Divide Still Gaping*, SILICONVALLEY.COM (July 8, 2014, 8:58 AM), http://www.siliconvalley.com/ci_26108198/poll-californias-digital-divide-still-gaping. These statistics are notable because California is otherwise popularly understood to be where most online innovation occurs.

130. See Cheryl Corley, *Language Remains a Barrier in Latino Health Care Enrollment*, NPR (Jan. 20, 2014, 7:44 PM), <http://www.npr.org/2014/01/20/263361444/language-remains-a-barrier-in-latino-health-care-enrollment>; April Dembosky, *Selling Health Care to California's Latinos Got Lost in Translation*, NPR (Mar. 6, 2014, 7:59 AM), <http://www.npr.org/blogs/health/2014/03/06/286226698/selling-health-care-to-californias-latinos-got-lost-in-translation>.

131. See JOHN B. HARRIGAN, ALLIANCE FOR EXCELLENT EDUCATION, SCHOOLS AND BROADBAND SPEEDS: AN ANALYSIS OF GAPS IN ACCESS TO HIGH-SPEED INTERNET FOR AFRICAN AMERICAN, LATINO, LOW-INCOME, AND RURAL STUDENTS 8–9 (2014).

132. AARON SMITH, PEW RESEARCH CTR., 35% OF AMERICAN ADULTS OWN A SMARTPHONE 15 (July 2011) (finding specifically, thirty-eight percent of Black/Latino smartphone users rely on their smartphones while seventeen percent of non-Hispanic Whites do so); ZICKUHR & SMITH, *supra* note 22, at 19 (reflecting that this distribution might reflect the role of median income, since users with incomes of less than \$30,000 were more than twice as likely as those with incomes of \$50,000 or more to do so).

133. AARON SMITH, PEW RESEARCH CTR., AFRICAN AMERICANS AND TECHNOLOGY USE (2014).

134. FILE & RYAN, *supra* note 103, at 12.

variety of measures. First, the propagation characteristics of most wireless service today does not yet afford anything close to the transmission speed of fixed wireline service.¹³⁵ Second, while smartphone devices are interactive and user-friendly, they generally do not deliver services or opportunities anywhere near the range or depth as those offered by PCs.¹³⁶ Of course, mobile phones are more geographically flexible and, as a result, afford a range of sophisticated location-based applications that are less relevant for, say, a desktop computer. Still, the mobile device experience is hardly as immersive. Specifically, mobile users' search engine entries are not as detailed or probing and the possibilities for content creation are substantially limited. The most successful start-ups and homework assignments rarely spring from a mobile device alone.¹³⁷ In short, broadband access through smartphones and tablets are simply not a substitute for PCs.¹³⁸

C. THE COSTS OF DISPARITY

Race, ethnicity, and income determine Internet access, adoption, and use. Yet, we might downplay the disparities in broadband service as long as they are not as egregious as disparities in, say, education, health care access, or housing. We might just assume that the uneven distribution of broadband service in the United States is not as worthy of alarm if it just reflects a social arrangement that tolerates worse disparities in those and other important areas of public life.

If the Internet is the dominant general use technology of our time,¹³⁹ however, broadband service disparities pose a far more perilous problem than policymakers have yet to acknowledge. It does not matter that the marginal Internet user has the mere potential to realize her respective communicative capacity on a free and open Internet. Any regulatory approach that allows service providers to privilege users and edge providers with the wherewithal to pay for better connections would undermine the core objective of communications law. Such specialized treatment would effectively limit other users' ability to pursue online opportunities and curtail small developers' relative ability to innovate. Those who do not have the fastest broadband connections might be able to invent, study space science, obtain good healthcare, or organize movements. But they do so from a position of relative disadvantage. This is to say nothing of the multifarious forms of learning and social engagement that they would gain with faster or more reliable connections.

135. Noam, *supra* note 23, at 475 (explaining that fiber optic and cable technologies are “20 to 100 times as fast as optimistically projected 4G rates”).

136. Napoli & Obar, *supra* note 18, at 323, 326.

137. *Id.* at 327–29.

138. See Crawford, *supra* note 24, at 2355–56.

139. Cf. PLOTKIN, *supra* note 15.

That broadband service disparities track deeply salient demographic factors like race, ethnicity, and income is doubly alarming because, again, if the Internet is the defining general use technology of our time, it will perpetuate inequalities across substantive areas, no matter how altruistic and innovative some networked elites are. This account undercuts the trickle down theory of Internet innovation. It suggests that, even when networks are open, extant structural patterns of exclusion will determine the ways through which users will gain access to and experience the Internet. Thus, to put it starkly, even though data transmissions on the Internet do not consider race, ethnicity, or incomes, the quality of users' respective connections refract through those persistent demographic variables.¹⁴⁰ Until policymakers do away with broadband service disparity, economically and sociopolitically disadvantaged groups will not be able to contribute to or enjoy the fruits of innovation online in the same way that others do. Without positive intervention addressed to disparity-quasi-disparity, these disadvantages will worsen.

Of course, there are no guarantees that mere membership in networks will yield benefits.¹⁴¹ The value of networks depends on so much more, including the duration, intensity, and reciprocity of their constituent connections.¹⁴² The relative advantage that privileged groups hold in income, wealth, educational attainment, and job security, for example, reproduces itself online and offline over time until it eventually becomes entrenched in both. Unless substantially reversed, these advantages become "durable"—online and off.¹⁴³ Exclusion in this way worsens existing disadvantage.¹⁴⁴

The costs of cumulative disadvantage over time are great. Social science research on social networks has shown that exclusion is costly because inclusion, its opposite, has benefits that only accrue to

140. Cf. OSAGIE K. OBASOGIE, *BLINDED BY SIGHT* 181 (2014).

141. See ROBERT D. PUTNAM, *BOWLING ALONE: THE COLLAPSE AND REVIVAL OF AMERICAN COMMUNITY* 19 (2000); see also BEN FINE, *SOCIAL CAPITAL VERSUS SOCIAL THEORY: POLITICAL ECONOMY* 179–80, 182 (2001); NAN LIN, *Building a Network Theory of Social Capital*, in *SOCIAL CAPITAL: THEORY AND RESEARCH* 3, 11 (Nan Lin et al. eds., 2001).

142. See Mark S. Granovetter, *The Strength of Weak Ties*, 78 *AM. J. SOC.* 1360 (1973).

143. DARIA ROITHMAYR, *REPRODUCING RACISM: HOW EVERYDAY CHOICES LOCK IN WHITE ADVANTAGE* 5–7, 59–60, 110, 133 (2014); see *id.* at 88 (discussing work of Glenn Loury). Roithmayr discusses the divide between Blacks and Whites; but social science research shows similar trends across class and ethnicity as well. Residents in impoverished or otherwise materially underserved communities across the country tend to remain in those circumstances only because their relative opportunities are not as abundant. *Id.* at 89; see also WILLIAM JULIUS WILSON, *THE TRULY DISADVANTAGED: THE INNER CITY, THE UNDERCLASS, AND PUBLIC POLICY* (1990); Loïc J. D. Wacquant & William Julius Wilson, *The Cost of Racial and Class Exclusion in the Inner City*, 501 *ANNALS OF AM. ACAD. OF POL. & SOC. SCI.* 8 (1989).

144. Crow, *supra* note 21.

networked members over time.¹⁴⁵ There is a measureable opportunity cost for every minute a user is not as well connected as others. By way of illustration, consider current controversies involving high-frequency trading (“HFT”) in electronic securities exchanges.¹⁴⁶ Highly leveraged HFT firms design computer programs to execute high volume trades by the millisecond in order to achieve the firms’ respective investment strategies.¹⁴⁷ By doing so, the firms expect to gain a quantifiable advantage over competitors. The idea is that, even if any single trade yields an infinitesimally small margin of profit, in the aggregate, such efforts can prove profitable in even the most stable sectors of the economy.

To be sure, the distributional problems in the broadband setting are far more complicated than those in electronic exchanges. But developments in HFT dramatically illustrate the relative costs of exclusion and disparity in informational networks. Firms with only mediocre or conventional access to “market-moving” information will fail to stay apace with better resourced competitors.¹⁴⁸ Such disparity in the context of electronic exchanges might be the cold reality of how capital markets work. But, in the broadband setting, the costs of exclusion are far direr because Internet access affords far more than the ability to trade on “market-moving” information.

This is not just a theoretical claim. Internet access has real implications in education, employment, and employability, for example. Elementary and secondary school students who do not have adequate online access at home risk falling behind their peers because, among other things, they cannot complete Internet-related homework as easily as their peers.¹⁴⁹ Indeed, children’s grades improve when schools supply computers through which the students can access the Internet from home.¹⁵⁰ Macroeconomic indicators suggest moreover that, when more

145. See PAUL BOURDIEU, *The Forms of Capital*, in HANDBOOK OF THEORY AND RESEARCH OF THE SOCIOLOGY OF EDUCATION 46, 47–48 (J.G. Richardson ed., 1986); JAMES S. COLEMAN, FOUNDATIONS OF SOCIAL THEORY 300–05 (1990); NAN LIN, SOCIAL CAPITAL: A THEORY OF STRUCTURE AND ACTION (2001); PUTNAM, *supra* note 141, at 19; BARRY WELLMAN, *Structural Analysis: From Method and Metaphor to Theory and Substance*, in SOCIAL STRUCTURES: A NETWORK APPROACH 19, 19–22 (Barty Wellman & S.D. Berkowitz eds., 1988).

146. The SEC only authorized electronic exchanges in the late 1990s.

147. In short, an HFT firm’s algorithm monitors and processes market activity in one or more sectors of the economy. When some threshold strategic condition is met, the program executes an extremely high volume of trades on behalf of the firm in a matter of milliseconds. Rarely do these firms hold a position for long; they only hold it as long as the algorithm deems necessary to minimize risk and maximize gain of loss on every individual trade before other market actors can act.

148. To be sure, HFT helps bring more liquidity to the market and, as a result, arguably makes the markets more efficient. But emergent HFT practices sometimes violate the letter if not the spirit of SEC insider trading and fair disclosure rules meant to ensure that the investing public has equal access to market-moving information.

149. CONNECTED TEXAS, BROADBAND AND EDUCATION—CONNECTING STUDENTS IN TEXAS (2014).

150. *Id.*

people are well connected, society as a whole benefits.¹⁵¹ For example, even the smallest increases in broadband penetration rates are strongly correlated with significant increases in the number of jobs and aggregate household income in some areas.¹⁵² Users are also much more likely to be politically engaged or to access government services when they have reliable connections.¹⁵³

It is for these reasons that Congress's primary charge to the FCC under the Communications Act is to attend to substantive distributional concerns. But the agency did not really evince any meaningful recognition of this charge in its recent network neutrality proceeding until public reaction forced it to do so. As I show in Part III below, the agency has focused myopically on finding the right innovation balance. To the extent the Commission has gestured toward redressing disparity, it has come as a result of public pressure to consider equality concerns.

III. THE UNINTENDED OPENING IN THE OPEN INTERNET RULES

In February 2015, the FCC substantially circumscribed the extent to which access providers could leverage their market position to extract fees from users and edge providers.¹⁵⁴ The agency promulgated rules that control the manner in which access providers may administer Internet connections. The FCC asserts that the rules will ensure that access providers remain "neutral" in how they manage those connections; that is, access providers generally may not block or discriminate between different kinds of applications or content.¹⁵⁵

Until very recently, the agency has had difficulty finding a statutory basis for the intervention that the courts have been willing to accept. This really was a problem of the FCC's own creation: until just this past February, the agency had classified the Internet under the Communications Act as an "information service" deserving of the lightest of regulatory oversight. In its final and most recent Open Internet Rules, however, the agency has departed from this approach, basing the new rules on its longstanding authority under the statute to regulate "telecommunications service," a regulatory category reserved for common carriers like telephone companies.¹⁵⁶

151. See Dutz et al., *supra* note 115, at 35–36.

152. CONNECT MICHIGAN, BROADBAND'S ECONOMIC IMPACT IN MICHIGAN 2–3 (2013).

153. CONNECT OHIO, MAKING GOVERNMENT ACCESSIBLE: E-GOVERNMENT USAGE IN OHIO 3 (2014). At the core of these material advantages of connection is the fact that users must be ready and comfortable with the technology. Thus, many observers have argued that "digital readiness" is above all else the most important determinant of online participation. See HERRIGAN, *supra* note 123, at 11–12.

154. See Protecting and Promoting the Open Internet, *supra* note 7.

155. *Id.*

156. *Id.*

The legal form of the rules has changed, but the substantive justification has not. The “virtuous circle of network innovation and infrastructure development” remains the prevailing regulatory ideology at the FCC. The agency’s argument is that innovation in Internet applications will generate more user interest that, in turn, will induce access providers to invest in Internet infrastructure that, in turn, will benefit everyone. This is the trickle down theory of Internet innovation.

This Part describes and critiques the way in which innovation has manifested itself in communications policy, focusing in particular on the Open Internet proceeding. It reviews the general content and form of the rules that the agency proposed last spring and chronicles the agency’s decision to settle on more robust regulation this past February. The FCC’s decision to apply common carrier principles to the regulation of broadband evinced its recognition of the Internet’s role and great potential as a platform for social and economic integration. That is, by classifying broadband as “telecommunications service” under Title II of the Act, the agency has opened up a range of regulatory possibilities to ensure that service providers take all users and edge providers as they are; they cannot discriminate or interfere with connections on the basis of content, applications, devices, or services.

This is an opening for the agency to recapture the statute’s core objective. Part III demonstrates that, while innovation remains the animating concern for the agency and other federal policymakers, the FCC has shown a welcome interest in distributional fairness. But much must be done. This Part argues that while innovation is a powerful and useful concept, it is addressed to interests that are orthogonal to and potentially in tension with the broad distributional objectives of communications law.

A. THE PROPOSED RULES

Last spring, the FCC proposed two different rules to promote the “open Internet.”¹⁵⁷ The agency’s stated objective for both was to encourage application innovation.¹⁵⁸ The proposed rules would do this by forbidding broadband providers from blocking user access to the Internet content, applications, service, and devices of their choice, as well as barring them from unreasonably discriminating against lawful Internet traffic.¹⁵⁹ The proposed rules also would require access providers to be transparent about their local broadband network management practices. The agency also proposed a more flexible rule for mobile broadband

157. FCC, FACT SHEET: CHAIRMAN WHEELER PROPOSES RULES FOR PROTECTING THE OPEN INTERNET (Feb. 4, 2015), http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0204/DOC-331869A1.pdf.

158. *Id.* at 1.

159. *Id.* at 2.

providers, forbidding them only from blocking websites or competitors' voice applications.¹⁶⁰ Mobile providers would not be barred from unreasonably discriminating against network traffic.¹⁶¹

But the two proposals took two different legal forms with important substantive implications. The first would allow access providers to negotiate "commercially reasonable" transmission terms with individual content developers (or "edge providers") who are willing to pay for the specialized treatment. If broadband service were to remain an "information service" under Title I of the Communications Act, and that is what this first proposal would require, the agency would be required to give access providers sufficient leeway to offer different transmission terms to users and content providers. Under this first proposed rule, broadband providers like Comcast, for example, would be able to deliver content from Google (an "edge provider") to subscribers much faster than content from abc.com (another "edge provider") as long as the transmission terms with either company are "commercially reasonable."¹⁶² Under the proposal, the FCC would assess the validity of this kind of prioritization on an adjudicatory case-by-case basis.¹⁶³

The FCC's second proposal would explicitly bar providers from discriminating between applications or application types, a practice that the agency would allow under the first proposal as long as prioritization is commercially reasonable. This second proposal would be authorized under the agency's statutory power to regulate "telecommunications service" providers under Title II of the Communications Act.¹⁶⁴ Under this proposal, then, all or a part of local broadband network management service would be reclassified as "telecommunications service" subject to the common carrier obligations under Title II.¹⁶⁵ That is, the agency would no longer treat broadband service as an "information service" under Title I, something it has done since 2002. Rather, pursuant to Title II, the agency could forbid access providers, for example, from engaging in "unjust or unreasonable discrimination" in charges or services to edge providers.¹⁶⁶ They could also require that access providers ensure that users and edge providers can connect with each other "seamlessly and

160. *Id.*

161. *Id.*

162. Brian Fung, *FCC Chair: An Internet Fast Lane Would Be 'Commercially Unreasonable,'* WASH. POST (May 20, 2014), <http://www.washingtonpost.com/blogs/the-switch/wp/2014/05/20/fcc-chair-an-internet-fast-lane-would-be-commercially-unreasonable/>; see also Press Release, FCC, Statement by FCC Chairman Tom Wheeler on Broadband Consumers and Internet Congestion (Jan. 29, 2015) (on file with author).

163. Fung, *supra* note 162.

164. FCC, *supra* note 157, at 1.

165. *Id.*

166. See 47 U.S.C. § 202(a) (2015).

transparently . . . between and across telecommunications networks.”¹⁶⁷ Thus, under this second proposal, Comcast could not offer a better deal to Google on the basis of specialized (if also commercially reasonable) terms; it would have to hold itself out to the public as available to everyone on the same terms. The agency also invited comment on a variation of the Title II proposal that would classify traffic from major content developers as “telecommunications service.” This would include, for example, remote delivery services or “‘sender-side’ traffic sent in response to the subscriber.”¹⁶⁸

With both proposals, the FCC responded directly to a D.C. Circuit panel’s January 2014 decision that the agency’s 2010 Open Internet proposal, premised solely on Title I, did not make any allowances for commercially reasonable bargaining between “information service providers” and “edge providers.” The court concluded that, while the 2010 rules were rational enough to survive judicial scrutiny under the Administrative Procedure Act,¹⁶⁹ the Communications Act forbids them if they require “information service providers” to treat all affiliated and unaffiliated content equally.¹⁷⁰ Such obligations, the panel explained, resemble common carrier regulation that, according to the Communications Act, the agency may impose only on “telecommunications service providers.”¹⁷¹ The 2010 proposal could not stand because the FCC was bound by its earlier decision to classify broadband as an “information service” (and not as “telecommunications service”).¹⁷²

The first of the 2014 proposals, what I call the Title I proposal, addressed the court’s concern by allowing for commercially reasonable bargaining between access providers and edge providers. The second proposal, what I call the Title II proposal, addressed the court’s concern by reclassifying broadband as a telecommunications service that could be subject to common carrier regulations under Title II.

Until very recently, the agency telegraphed a clear preference for the Title I approach largely because the D.C. Circuit had already affirmed that the agency has valid authority under that provision.¹⁷³ The Title II approach would require the agency to relitigate the question of its authority.

After the close of the comment period, the FCC leaked a version of the rules that would be premised on its authority under both Title I and

167. See 47 U.S.C. § 256 (1996); see also 47 U.S.C. § 251 (2015).

168. See Protecting and Promoting the Open Internet, *supra* note 7.

169. See *Verizon v. FCC*, 740 F.3d 623, 649 (D.C. Cir. 2014) (“The Commission has offered a rational connection between the facts found and the choice made.”).

170. See *id.* at 650.

171. 47 U.S.C. § 153(51) (2015).

172. *Id.*

173. See *Verizon*, 740 F.3d at 652.

Title II of the Communications Act.¹⁷⁴ This “hybrid” approach would divide broadband into two separate kinds of services: retail service for lay users that would be subject to Title I and “back-end” service for edge providers that would be subject to Title II common carrier requirements.¹⁷⁵ This hybrid approach would, on the one hand, allow access providers to differentiate lay users’ service quality based on the latter’s willingness to pay and, on the other hand, address the FCC’s interest in promoting application innovation. Prominent advocates of network neutrality actually proposed this hybrid proposal in their public comments to the agency.¹⁷⁶

The advantage of this approach is that it would not require the agency to reverse its decision issued over a decade ago to classify broadband service as an “information service” subject to Title I regulation. It would only require amending the existing regime to redress the wholesale distribution of edge providers’ data flows.¹⁷⁷

The hybrid approach, however, would also come with substantial risks and disadvantages. Most observers already assumed that access providers would challenge the rules no matter which form they took if any aspect of the new rule were to impose common carrier requirements.¹⁷⁸ Access providers made that clear within hours after the FCC first leaked the purported compromise.¹⁷⁹

B. THE PUBLIC RESPONSE

The public reaction to the Title I and hybrid proposals was record breaking for the FCC. The agency received nearly four million comments. Their substance varied, of course, but the vast majority supported some form of regulatory intervention that would limit access providers’ ability to control transmission speeds and fees.¹⁸⁰ They were focused above all on the rank unfairness of allowing some users and edge providers to have better and faster service than others.¹⁸¹

174. See Edward Wyatt, *F.C.C. Considering Hybrid Regulatory Approach to Net Neutrality*, N.Y. TIMES (Oct. 31, 2014), http://www.nytimes.com/2014/11/01/technology/fcc-considering-hybrid-regulatory-approach-to-net-neutrality.html?_r=0.

175. *Id.*

176. Adam Clark Estes, *Mozilla Is Helping Tor Get Bigger and Better*, GIZMODO (Nov. 10, 2014, 2:39 PM), <http://gizmodo.com/mozilla-is-helping-tor-get-bigger-and-better-1656860653>.

177. See Gautham Nagesh, *FCC ‘Net Neutrality’ Plan Calls for More Power Over Broadband*, WALL ST. J. (Oct. 30, 2014, 7:41 PM), <http://www.wsj.com/articles/fcc-net-neutrality-plan-calls-for-more-power-over-broadband-1414712501?autologin=y>.

178. See Jenna Greene, *Telecoms Poised to Fight Obama’s Net-Neutrality Proposal*, NAT’L L.J. (Nov. 17, 2014), <http://www.nationallawjournal.com/id=1202676472698>.

179. *Id.*

180. Lohr, *supra* note 27.

181. *Id.*

The cause was taken up by many others as well. Comedian and talk show host John Oliver sarcastically likened the FCC's Title I proposal to airline travel, with most users getting something like the least comfortable seats and large Internet companies like Google and Amazon routinely getting first class treatment.¹⁸² Former FCC Commissioner Michael Copps similarly asserted in testimony before the Senate Judiciary Committee that, without aggressive regulatory intervention, the Internet could “become the playground of the privileged few that only widens the many divides that are creating a stratified and unequal America . . . [We are] heading toward an online future with fast lanes for the 1 % and slow lanes for the 99%[.]”¹⁸³

The hybrid approach, too, encountered stiff opposition. The resistance came from public interest groups, public figures, and other advocates who argued that the hybrid approach would still allow access providers to offer tiered levels of service as long as they were offered at commercially reasonable terms.¹⁸⁴ Such tiering, opponents argued, would undermine innovation by users of all stripes.¹⁸⁵ Advocates also observed that the drafters of the hybrid approach would have to address the requirement that “telecommunication services” under Title II must offer their service “for a fee.” Access providers do not currently charge websites and other edge providers a dedicated fee to connect to law users, nor would advocates of network neutrality want them to, as those fees would make it that much more costly for lay users to start online ventures.¹⁸⁶

Apart from public concern about the legal form of the rules, there were also questions about how the rules would treat transmissions across the backbone of the Internet, from originating service provider to terminating provider. To focus solely on the positive duties of local access providers in the last mile would be naïve since local access providers are not the only administrators of Internet connections. Large transit network operators like Cogent and Level 3 manage Internet traffic between local providers on behalf of prominent edge providers like Apple, Netflix, and Google.¹⁸⁷ They do so through “peering”

182. *Last Week Tonight with John Oliver: Net Neutrality* (HBO television broadcast June 1, 2014).

183. *Preserving an Open Internet: Rules to Promote Competition and Protect Main Street Consumers: Sen. Judiciary Comm. Field Hearing* (2014) (testimony of Hon. Michael J. Copps).

184. See Jon Healey, *Possible ‘Hybrid’ Net Neutrality Rules Get Chilly Reception*, L.A. TIMES (Oct. 31, 2014, 3:01 PM), <http://www.latimes.com/opinion/opinion-la/la-ol-fcc-net-neutrality-hybrid-20141031-story.html#page=1>.

185. See Barbara van Schewick, *Will the FCC Ruin the Internet?*, CNN (Nov. 7, 2014, 4:17 PM), <http://www.cnn.com/2014/11/07/opinion/van-schewick-net-neutrality/index.html>.

186. See *id.*; Healey, *supra* note 184.

187. Robert McMillian, *What Everyone Gets Wrong in the Debate over Net Neutrality*, WIRED (June 23, 2014, 6:30 AM), http://www.wired.com/2014/06/net_neutrality_missing/; Dan Rayburn, *Apple Negotiating Paid Interconnect Deals with ISPs for Their Own CDN*, STREAMINGMEDIABLOG.COM (May

agreements on interconnection terms.¹⁸⁸ Second, and more importantly, some large edge providers are entering into their own co-location agreements with local providers. Companies like Google and Netflix have built content delivery networks and dedicated servers within last mile providers' networks, giving them an advantage over competitors. The alternative is to rely on conventional "best effort" transmission protocols that are not well suited to their latency-sensitive high-bandwidth content that they transmit.

C. THE FINAL RULES

The record-breaking public reaction to the proposed rules has to have a real impact on the agency's decisionmaking.¹⁸⁹ This past February, the FCC approved a flat ban on blocking, discrimination, and paid prioritization by fixed and mobile wireless providers.¹⁹⁰ In short, the new rules prohibit:

- blocking access to Internet "content, applications, services, and devices";
- impairing "Internet traffic on the basis of content, applications, services," and devices; and
- prioritizing any Internet traffic "in exchange for consideration" or prioritizing affiliated content, applications, and services.¹⁹¹

The agency relied on its authority under Section 706 in Title I of the Communications Act, as well as its separate authority under Title II.¹⁹² The Commission cited the D.C. Circuit Court of Appeals' decision last year to affirm that Section 706 supplied sufficient authority to regulate last-mile providers. The agency also found support in the court's opinion for its claim to authority under Title II.¹⁹³ Thus, in unequivocal terms, in these new rules, the agency has classified broadband as a telecommunication service subject to the traditional common carrier bar on discriminating between content, applications, and services.

20, 2014, 10:15 AM), <http://blog.streamingmedia.com/2014/05/apple-negotiating-paid-interconnect-deals-with-isps-for-their-own-cdn.html>; see also Joan Engerbretson, *Level3 Wants FCC to Impose ISP Interconnection Requirements*, TELECOMPETITOR (July 8, 2014, 6:00 AM), <http://www.telecompetitor.com/level3-wants-fcc-impose-isp-interconnection-requirements/>.

188. McMillian, *supra* note 187; Rayburn, *supra* note 187.

189. See Rob Faris et al., *Score Another One for the Internet? The Role of the Networked Public Sphere in the U.S. Net Neutrality Policy Debate*, BERKMAN CTR. FOR INTERNET & SOC'Y AT HARVARD U. 4 (Feb. 10, 2015).

190. It also reiterated the requirement that providers be transparent about their network management practices. The transparency requirement, however, was affirmed by the D.C. Circuit. Nothing in the rule altered or broadened this requirement.

191. See FCC, *supra* note 157, at 2.

192. Protecting and Promoting the Open Internet, *supra* note 7, ¶¶ 5, 7 & 273-84.

193. *Id.*

As enshrined in the Act, the nondiscrimination principle in no uncertain terms forbids service providers from imposing

unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities, or services for or in connection with like communication service, directly or indirectly, by any means or device, or to make or give any undue or unreasonable preference or advantage to any particular person, class of persons, or locality, or to subject any particular person, class of persons, or locality to any undue or unreasonable prejudice or disadvantage.¹⁹⁴

As broadly written as this provision and related provisions might be, the agency has chosen not to apply the full sweep of common carrier obligations. Congress authorized the FCC to “forbear” from enforcement of certain requirements under Title II if “the public interest” requires it. In the new rules, the agency has invoked this power to announce that it will refrain from imposing duties that are otherwise applicable to telephone companies and other common carriers. Specifically, in the new rules, the FCC announced that it will forbear from imposing rate regulations or tariffs, pro-competitive unbundling requirements, and filing or accounting requirements.¹⁹⁵ Such an approach, the Chairman has explained, is better tailored to the twenty-first century.

Even after forbearing on enforcement of some common carrier requirements, however, the rules are far more robust than what the Chairman was forecasting during the comment period last summer.¹⁹⁶ They are certainly more stringent than most of the alternatives that the FCC has publicly considered for over the past decade. Among other things, the new rules generally forbid broadband providers from privileging one edge provider’s applications and content over another’s, irrespective of whether the preference is commercially reasonable. The bar on paid prioritization in particular protects against a wide range of schemes through which providers could advantage specific content and applications for any legal “consideration.” Drafted in this way, the rules ostensibly bar paid prioritization schemes as well as the emergent practice of “zero-rating” or “positive price discrimination.”

The rules also implemented a wide range of procedures and obligations otherwise applicable to common carriers. For example, the

194. 47 U.S.C. § 202 (2015).

195. Forbearance here raises interesting questions. First, in the agency’s framing, the “public interest” requires that it forbear from applying certain provisions of Title II. It is hard to know, however, how far the agency may go without more clarity on what the “public interest” entails in this setting. Second, the Administrative Procedure Act requires the agency to subject substantive regulatory revisions to public notice and comment. The agency’s action also raises interesting questions about whether it must subject any modification of its forbearance decision in this most recent Order to notice and comment.

196. Tom Wheeler, *FCC Chairman Tom Wheeler: This Is How We Will Ensure Net Neutrality*, WIRED (Feb. 4, 2015, 11:00 AM), <http://www.wired.com/2015/02/fcc-chairman-wheeler-net-neutrality/>.

FCC would be able to investigate consumer complaints and enforce related provisions.¹⁹⁷ Providers will also have to abide by consumer privacy rules,¹⁹⁸ ensure equal access to indispensable physical infrastructure like poles and conduits to competitors,¹⁹⁹ and provide access to people with disabilities.²⁰⁰

Finally, the rules also address the interconnection terms between the large transit network operators like Cogent Communications (who carry Netflix and other major edge providers' data) and the local broadband providers.²⁰¹ The latter are the gatekeepers to users. The new rules assert for the first time that the FCC has the authority to review interconnection practices that are not "just and reasonable."²⁰²

Together, these new Open Internet Rules represent a modernization of the requirements under Title II in that they incorporate nondiscrimination and other principles in common carrier regulation. At the same time, however, by invoking its forbearance authority under Section 706, the agency has signaled its intention to be far more flexible than Title II would otherwise allow. Thus, the agency will refrain from imposing rate regulation, unbundling requirements, new taxes, new fees, "or other forms of utility regulation."²⁰³

IV. TOWARD NETWORK EQUALITY

The public's reaction to the FCC's original Open Internet proposal in 2014 was not as concerned with the form or pace of innovation as the unadorned problem of disparity. The main criticism was that the status quo is unfair to the extent it permits "fast lanes" for firms and developers who can afford prioritized treatment and slower connections for users and "start-up companies that do not have the cash to pay the tolls."²⁰⁴ This response was consistent with contemporaneous polling that showed overwhelming majority support for more robust Open Internet Rules.²⁰⁵

197. FCC, *supra* note 157, at 2; *see also* 47 U.S.C. § 208 (2015); *id.* §§ 206, 207, 209, 216, 217.

198. FCC, *supra* note 157, at 3; *see also* 47 U.S.C. § 222 (2015).

199. FCC, *supra* note 157, at 3; *see also* 47 U.S.C. § 224 (2015).

200. FCC, *supra* note 157, at 3; *see also* 47 U.S.C. §§ 225, 255 (2015).

201. *See* Todd Shields, *Netflix Deals with Broadband Providers Said to Be Getting New FCC Oversight*, BLOOMBERG BUS. (Jan. 28, 2014, 4:07 PM), <http://www.bloomberg.com/news/articles/2015-01-28/netflix-deals-with-broadband-providers-said-to-get-fcc-oversight>.

202. *See id.*

203. FCC, *supra* note 157.

204. *See* Wyatt, *supra* note 27.

205. Mario Trujillo, *Poll: Voters Support Broad Concept of Net Neutrality*, HILL (Jan. 21, 2015, 10:31 AM), <http://thehill.com/policy/technology/230226-poll-voters-support-broad-concept-of-net-neutrality> (showing support for restrictions on "blocking, discriminating against, slowing down, or charging for Internet traffic to certain websites"); *see also* Press Release, Univ. of Del. Ctr. for Political Comm'n, National Survey Shows Public Overwhelmingly Opposes Internet "Fast Lanes" (Nov. 10, 2014) (on file with author).

The FCC Chairman was clearly affected by the public reaction. By the time the agency published its final rules, he explicitly acknowledged the naïveté of the unmodified trickle down approach, even assuming personal responsibility for the agency's position before the switch.²⁰⁶ The rules accordingly now subject broadband service to unequivocal nondiscrimination and other common carrier rules.²⁰⁷ So, even as policymakers at the FCC continue to believe above all that the Internet is a platform for innovation, it also now seems to recognize that the relative quality of users' access should be a part of the public policy calculus.

Although welcome, the FCC's approach is insufficient to remedy the deep disparities outlined in Part II. Policymakers can and must do much more. Under the view I propose here, the Internet is not simply a boutique curiosity with which engineers and computer scientists should be allowed to tinker. Nor is it simply a data rich resource for inventors and companies to exploit. The controlling view ought to be that broadband is a service like electricity—that it is an essential general use resource to which everyone should have the same or nearly the same access as a matter of course.²⁰⁸ Accordingly, the longstanding and uncontroversial central objective of communications law and policy—universality—should displace (or at least complement) the preoccupation with innovation.

The statutory commitment to universal broadband deployment is better understood as a concern for substantive equality in the delivery of communication services. As explained in Part I, the amended Communications Act speaks in relative terms about broadband availability. It provides, for example, that telecommunications and information service and rates in all areas of the country must be “reasonably comparable to” the best available service.²⁰⁹ The clear implication is that the success of deployment depends on whether broadband is available to all users on relatively similar terms, no matter whom or where the subscribers are.

206. See Wheeler, *supra* note 196 (“Originally, I believed that the FCC could assure internet openness through a determination of ‘commercial reasonableness’ under Section 706 of the Telecommunications Act of 1996. While a recent court decision seemed to draw a roadmap for using this approach, I became concerned that this relatively new concept might, down the road, be interpreted to mean what is reasonable for commercial interests, not consumers.”).

207. This shift does not raise notice problems under the Administrative Procedure Act because the agency made clear in its notice of public rulemaking that it was also considering reclassifying broadband as a Title II common carrier. See generally *Chocolate Mfrs. Ass'n of U.S. v. Block*, 755 F.2d 1098, 1102 (4th Cir. 1985) (“Section 4 of the Administrative Procedure Act (APA) requires that the notice in the Federal Register of a proposed rulemaking contain ‘either the terms or substance of the proposed rule or a description of the subjects and issues involved.’”).

208. See Tom Vilsack & Penny Pritzker, *Broadband: The Electricity of the 21st Century*, WHITE HOUSE (Jan. 15, 2015, 10:20 AM), <http://www.whitehouse.gov/blog/2015/01/15/broadband-electricity-21st-century>.

209. 47 U.S.C. § 254(b)(3) (2015).

This final Part lays out the contours of what network equality requires as a matter of policy and research. First, I make the positive argument for its distinctiveness—that is, in relation to the prevailing approach. Second, I identify several examples in current federal policymaking that showcase how a particularized focus on network equality has begun (and should continue) to shape communications policymaking. In the end, I offer this Part as the foundation for more policy and scholarly work in the area.

A. SUBSTANTIVE COMMUNICATIONS EQUALITY

As demonstrated above, the prevailing view of the Internet among communications policymakers and scholars is that it is something like an innovation machine. Some scholars, however, have developed modified versions of the view favoring innovation that are not as myopically devoted to the trickle down theory. One prominent claim, for example, is that the Internet, in addition to being an engine for commerce, is also a “public and social infrastructure” whose social value “is tied to the range of capabilities it provides for individuals, firms, households, and other organizations to interact with each other and to participate in various activities and social systems.”²¹⁰ According to this conception, Internet participation has spillover effects that benefit the most active users, as well as those who are not online.²¹¹ YouTube, for example, is not just beneficial because it creates value for Google, its parent company, or for users who post videos, but because it also “incidentally generate[s]” value for the users who watch the content.²¹² Sometimes these secondary benefits are small in scale; sometimes they are big. But all users are beneficiaries.

This approach is essentially a restatement of the prevailing trickle down theory to the extent it posits that everyone in society is the downstream beneficiary of innovation on the Open Internet.²¹³ It asserts that the Internet’s main value is generated by the transformative “killer apps” designed by networked elites.²¹⁴ Here, universality is also important, but only instrumentally or secondarily so.

Other scholars are far more direct in their claim that universal deployment ought to guide public policy. Even for these scholars, however, universality is an instrumental good that helps to stimulate

210. BRETT M. FRISCHMANN, *INFRASTRUCTURE: THE SOCIAL VALUE OF SHARED RESOURCES* 336 (2012).

211. *Id.* at 337.

212. *Id.* at 338–39.

213. *Id.* at 337.

214. *Id.* at 338.

economic growth.²¹⁵ This view holds that, if robust nondiscrimination rules are in place, every additional participant and connection increases the probability of new synergies and collaborations, which, in turn will contribute to economic growth.²¹⁶

To be sure, broad and unimpeded connections to YouTube or Facebook can generate socially valuable macroeconomic spillover effects for society at large.²¹⁷ But my claim here is both more general and particular than this. I argue that, apart from the increases in general social welfare, universal access and use create opportunities for social integration for users who are excluded or otherwise structurally disadvantaged in society generally. This contention is partly born from the positive terms of the Communications Act itself: that all Americans must have reasonably comparable broadband service irrespective of whom or where they are.²¹⁸ Under law, it does not matter whether they contribute to innovation in any appreciable way.

This claim for universality, however, really flows from the normative commitment that communications are social and relational by their nature, and that they generate a sense of inclusion and solidarity that is itself valuable.²¹⁹ This claim is especially salient for the least fortunate among us. That is, promoting and protecting communications equality is redistributive in the same way racial integration is. Internet connections are the means by which people associate with and otherwise engage their culture in ways that are harder to do without a network connection. We might frame this in purely welfarist terms. As I observe in Part II, there are strong correlations between online participation rates in local communities and higher employment rates and income. With greater connectivity, historically disadvantaged communities are likelier to become active participants in the economy and culture.

But we can go further: regulations and programs that promote and protect network equality help to redress the structural barriers that historically disadvantaged groups in the United States routinely experience in all other aspects of public life. We might assume that this is nothing more than a question of semantics—that I employ the language of equality and integration, where the prevailing approach relies on tropes in economics and network theory.²²⁰ That assumption, however, would misunderstand the point of my argument here. I argue for a reorientation

215. See Crawford, *supra* note 47, at 390; Richard S. Whitt & Stephen J. Schultze, *The New "Emergence Economics" of Innovation and Growth, and What It Means for Communications Policy*, 7 J. TELECOMM. & HIGH TECH. L. 217, 263 (2009).

216. See Crawford, *supra* note 47, at 390; Whitt & Schultze, *supra* note 215, at 263.

217. Cf. Sylvain, *supra* note 30.

218. See 47 U.S.C. § 254(b) (2015).

219. Cf. Sylvain, *supra* note 30.

220. Cf. Kang, *supra* note 31, at 6–7.

toward network equality because the prevailing approach has things backwards. At least, the prevailing trickle down theory overemphasizes the material consequences of broadband deployment at the expense of the statutory and normative reasons for equality and integration. The statutory command to ensure network equality matters, I argue, because it charges policymakers to take affirmative steps to give everyone an opportunity to engage (that is, benefit from and add to) online opportunities and associations irrespective of who or where they are. And the reasons for this are important. Broadband is the gateway to a vast world of services and opportunities otherwise beyond many users' structurally impaired reach; the Internet is a transformative general use technology that could reverse historical and existing patterns of oppression, discrimination, bias, and harassment because it is so pervasive and indispensable.

In this way, my argument here takes up an observation that scholar Jerry Kang made eight years ago. In *Race.Net Neutrality*, Kang presciently puzzled through the contrasting ways in which scholars conceived of nondiscrimination in the network neutrality debate (back then) by comparing it to the law and language of civil rights.²²¹ In the network neutrality debate, he explained, consequentialist arguments tended to predominate; in the context of civil rights, however, scholars and policymakers were likelier to invoke non-welfarist deontological concerns.²²² Kang argued that, at a theoretical level, however, there is nothing inevitable or natural about the contrast in approaches. After all, he observed, many grassroots network neutrality activists invoked deontological concepts of democratic participation and free speech.²²³ But, for whatever reasons, Kang continued, those deontological concerns did not have currency in the mainstream policy debate about broadband network management policy where welfarist considerations prevailed.

Little had changed until the FCC adopted the current Open Internet Rules. Today, the deontological equality concerns that animate civil rights policymaking have found themselves in the FCC's rationalization for network neutrality. To be sure, the agency continues to rely above all on the trickle down theory to frame the legal basis of the rule. But, as discussed above, the agency has also evinced worry about disparity as such. This pivot has not merely been semantic. The agency relied on this concern in part to overtly reject the argument that service providers should be able to discriminate between users or edge providers, or apportion the quality of service based on the underlying service, applications, or content as long as commercially reasonable. To do so,

221. *Id.*

222. *Id.*

223. *Id.* at 8.

the agency now asserts, would create disparities between the haves and the have-nots.

To be clear, my argument here is not to remove consequentialism from policymaking in this area altogether. Even civil rights law and policy today recognizes that the best evidence of illegal discrimination is often in its quantifiable *ex post* discriminatory impact. Illegal discrimination is not just measured by the evidence of the wrongdoer's bigotry because most bigots now know better than to advertise their biases. Policymakers and courts recognize that the most useful measure of illegal discrimination in most settings is in the lived and calculable effects on protected groups.²²⁴ It is for this reason that most progressive civil rights laws attend to the ways in which the decisions of policymakers or private actors have a discriminatory impact on protected classes. Importantly, however, the measure of discriminatory impact operates in service of the core interest in promoting equality. Similarly, communications policymakers should come to understand the nature of disparity by understanding the empirical measure of "discrimination on the basis of race, color, religion, national origin, or sex."²²⁵

B. CURRENT INTERVENTIONS IN FURTHERANCE OF EQUALITY

Outside of the network neutrality debate, equality concerns have taken center stage in communication policy generally. This new focus has found expression, first, in fiscal policy and, second, in the positive regulation of broadband service generally. The first is comprised of substantial subsidies through the FCC as well as the Departments of Agriculture and Commerce to support broadband to the underserved and unserved. These take the form of means-tested discounts on monthly service fees, as well as direct grants to schools. The second set of interventions showcases the agency's broad positive authority to redress disparity. Three recent interventions in particular are worth considering here. They generally include, of course, the Open Internet Rules, but here, I focus in particular on the decision by the FCC to treat mobile and fixed broadband providers equally. Other interventions along these lines, however, include the FCC's recent decisions, first, to increase the regulatory definition of broadband and, second, to preempt state laws that forbid municipal participation in the market for broadband service delivery.

All of these efforts seek one way or another to ensure that users and communities everywhere in the United States have an equal or at least a "reasonably comparable" opportunity to access the affordances of the

224. *See, e.g., Texas Dep't of Hous. & Cmty. Affairs v. Inclusive Cmty. Project*, 135 S. Ct. 2507, 2521 (2015).

225. 47 U.S.C. § 1511 (2015).

Internet. In this vein, the new Open Internet Rules are just a piece of the FCC's regulatory turn toward broadband equality. Together, these interventions come far closer to actualizing the core objectives of the Communications Act than does the mere focus on innovation.

I. Fiscal Policy

Policymakers have employed a variety of regulatory strategies to ensure that as many members of the public have broadband service as possible, notwithstanding the limitations imposed by access providers. The most direct interventions to this point have been in fiscal policy.²²⁶

Congress devised a partial solution for broadband disparity in the amended Communications Act. Among other things, it established federal subsidy programs with the intention of addressing structural disparities in the availability of communications services. Section 254 of the amended Communications Act in particular establishes a relatively elaborate process for assuring universal service. Under this provision in particular, the quality and cost of broadband service in all rural and high-cost areas are on par with service and cost in cities.²²⁷ The FCC explicitly recognized that these provisions could very well apply pursuant to the agency's decision to classify broadband as a telecommunications service.²²⁸

Moreover, in 2009, as part of the American Recovery and Reinvestment Act ("ARRA"), Congress allocated a little over \$7 billion in grant and loan programs to expand deployment and adoption in unserved and underserved areas throughout the country. Under that law, Congress charged the Departments of Commerce and Agriculture with the responsibility of administering these programs.²²⁹

Congress has attempted to close the service gap in other ways as well. In 1996, for example, it created the "E-Rate program" in order to make broadband connectivity more affordable for schools and libraries.²³⁰ Recently, the FCC announced that it would modernize the program in order to tackle deficient service in schools and libraries.²³¹ The new rules require greater pricing transparency and consolidated purchasing systems, as well as expand funding to provide Wi-Fi networks at schools

226. See Sylvain, *supra* note 108.

227. 47 U.S.C. § 254(b) (2015).

228. Protecting and Promoting the Open Internet, *supra* note 7 (asserting that it will not forbear from applying aspects of § 254).

229. American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115, 128 (2009); see also Sylvain, *supra* note 108.

230. See FCC, UNIVERSAL SERVICE PROGRAM FOR SCHOOLS AND LIBRARIES (E-RATE) (2014).

231. See FCC, FACT SHEET: FCC CHAIRMAN WHEELER'S PLAN TO REBOOT THE E-RATE PROGRAM TO MEET THE NEEDS OF THE 21ST CENTURY DIGITAL LEARNING, http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db1117/DOC-330508A1.pdf.

and libraries in rural and poor school districts and to better enforce current rules.²³²

Very recently, moreover, FCC Chairman Wheeler announced an initiative to expand the current means-tested program for telephone service to cover broadband as well. Since the 1980s, the Lifeline program sought to build on the recognition that landlines “had become crucial to full participation in our society and economy.”²³³ Chairman Wheeler’s proposed reform would allow eligible residential subscribers to use the same subsidy of about ten dollars per month that they get for phone service to help cover the cost of broadband at home.²³⁴

The FCC also has made it one of its top priorities over the past few years to extend and accelerate fixed and mobile broadband deployment to all of the places in which Americans live, work, and travel.²³⁵ Among other things, for example, it administers the high-cost universal service program and the Connect America Fund.²³⁶ The high-cost universal service program provides direct subsidies toward deployment. Through the Connect America Fund, the FCC invests in the construction of broadband networks in cooperation with access providers.²³⁷ There, the FCC has invested more than \$438 million to bring service to 1.6 million people and intends on spending almost \$9 billion in remote rural areas in the next five years.²³⁸ Other programs, while not as ambitious, are directed at resolving the same problem. The Mobility Fund, for example, provides one-time grants to construct next-generation mobile networks for communities in which there is none.²³⁹

President Barack Obama, moreover, signed Executive Order 13616 in 2012 in order to promote broadband deployment in federal buildings and rights-of-way.²⁴⁰ The Order’s central objective is to coordinate procedures and policies across federal agencies that have substantial land ownership or management responsibilities in order to assure that, when

232. Modernizing the E-Rate Program for Schools and Libraries, WC Docket No. 13-184, Report and Order and Further Notice of Proposed Rulemaking (July 23, 2014).

233. MTS and WATS Market Structure, and Amendment of Parts 67 & 69 of the Commission’s Rules and Establishment of a Joint Board, 50 Fed. Reg. 939 (Jan. 8, 1985).

234. See Press Release, FCC, FCC Chairman Wheeler Seeks Comment on Modernizing Lifeline to Make 21st Century Broadband Affordable for Low-Income Households (May 28, 2015) (on file with author).

235. CONNECT AMERICA FUND, REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULEMAKING, WC DOCKET NO. 10-90 (Nov. 18, 2011).

236. Eighth Broadband Progress Report, *supra* note 19, at 10,345–46 ¶ 4.

237. *Id.*

238. Sean Buckley, *FCC’s Connect America Fund II Receives Mixed Response*, FIERCE TELECOM (Apr. 25, 2014), <http://www.fiercetelecom.com/story/fccs-connect-america-fund-ii-receives-mixed-response/2014-04-25>.

239. Eighth Broadband Progress Report, *supra* note 19, at 10,351–52 ¶ 12.

240. See Press Release, White House, Office of the Press Sec’y, Executive Order—Accelerating Broadband Infrastructure Deployment (June 14, 2012) (on file with author).

possible, federal resources are used to lay infrastructure in service of broad deployment.²⁴¹

All of these efforts appear to have had a positive effect on deployment and adoption rates. The postmortem has yet to be written on the ARRA's investment in broadband infrastructure, but that single intervention has gone further than most initiatives to bring high-speed broadband service to underserved communities. Clearly, however, fiscal policy interventions like these are not sustainable if they depend on shifting political winds. Something more will be needed in policy and law.

2. *Standardized Minimum Speed Thresholds*

Another way in which policymakers have promoted broader and more equal access is by requiring Internet access providers to supply a minimum quantum of transmission speed to qualify as a broadband provider. The threshold is a purely regulatory term of art, not an engineering concept. The agency has used it to create incentives for the deployment of broadband in high-cost and rural areas. The speed definition operates as a carrot rather than stick, because providers are entitled to some of the funding I identify above in Part IV.B.1 if they supply broadband service.

Pursuant to its obligation to “review and reset” the broadband standard periodically,²⁴² the FCC in January 2015 upgraded the threshold definition of broadband to 25 Mbps for downloads and 3 Mbps for uploads. This reform represents a substantial change from the 4/1 benchmark it set just in 2010 which, at the time, was a remarkable increase from the now laughable 200 kbs standard, which only supports applications like e-mail.²⁴³ Before 2010, when the FCC implemented the 4/1 standard, the speed benchmark was 200 kbps in both directions, which afforded little more than e-mail and the most elemental web surfing.²⁴⁴ The 2010 4/1 Mbps benchmark, on the other hand, enabled users to send and receive high-quality voice and video services.²⁴⁵

241. *Id.*

242. *Id.* at 10361 ¶ 20; FCC, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN 135 (2010).

243. Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, Amended by the Broadband Improvement Act, GN Docket No. 11-121, 25 FCC Rcd. 9556, 9559 ¶ 4 (2010).

244. The FCC revisits the benchmark every four years. Eighth Broadband Progress Report, *supra* note 19, at 10,361 ¶ 20; FCC, *supra* note 242, at 135.

245. For context: today, users need about 3 Mbps to 4 Mbps to support video chatting, 5 Mbps to stream high definition movies, and 10 Mbps to 20 Mbps to support digital software distribution. See generally Peter Bowen & Shawn Hoy, *OBI Broadband Performance* 9 (FCC, Technical Paper No. 4, 2011) (listing types of online content and services and the broadband data rates required by that content or service); *Help Center, Internet Connection Speed Recommendations*, NETFLIX, <https://help.netflix.com/en/node/306> (last visited Feb. 8, 2016).

Service providers are likely to take up the FCC's lead since consumers continue to demand faster broadband speeds to support new applications. Cloud storage, teleworking, gaming, and video streaming applications have become central to everyday life for many Americans,²⁴⁶ and all, one way or another, require or accommodate speeds that far exceed conventional consumer-grade service of just five years ago.

The new standard also better represents the current state of affairs since most providers purport to make at least 25 Mbps available to their subscribers. Generally, users who can afford it already have download speeds of 30 Mbps or higher. But, under the new definition, nearly twenty percent of homes in the United States would be in areas without such service.²⁴⁷ The majority of these areas are in rural areas.²⁴⁸

Google, meanwhile, has invested in fiber optic networks in a few major U.S. cities that support more or less one gigabit per second upload and download speeds, one thousand times faster than the current FCC benchmark for upload connections.²⁴⁹ The Google Fiber service, moreover, costs about as much if not a little bit more than the most basic broadband service elsewhere around the country. The company accordingly offers casual users the same service speed for which generally only the largest companies pay ten times the price.²⁵⁰

To be sure, some of the Google Fiber project is promotional gimmickry for the online search and advertising giant. On the other hand, the promise of new data capacity and fast transmission speed has spawned a niche market for innovative applications. The right question is not: why would anyone need "ultra high-speed" broadband? Rather, the better question is: which will be the next "killer application" to make us wish we all had such service? The robust competitive threat that Google Fiber poses could also motivate incumbents to invest more and improve service for consumers in the near future, at least in the markets in which Google has invested.

246. See EXEC. OFFICE OF THE PRESIDENT, *supra* note 12.

247. Jon Brodtkin, *Tons of AT&T and Verizon Customers May No Longer Have "Broadband" Tomorrow*, ARSTECHNICA (Jan. 28, 2015, 10:10 AM), <http://arstechnica.com/business/2015/01/tons-of-att-and-verizon-customers-may-no-longer-have-broadband-tomorrow/>. The FCC assumes that about seventeen percent of the population lacks access to this level of service, with over half of all rural Americans lacking access. See Press Release, FCC, FCC Finds U.S. Broadband Deployment Not Keeping Pace: Updates Broadband Speed Benchmark to 25 Mbps/3Mbps to Reflect Consumer Demand, Advances in Technology (Jan. 29, 2015) (on file with author).

248. Press Release, *supra* note 247.

249. Minnie Ingersoll & James Kelly, *Think Big with a Gig: Our Experimental Fiber Network*, GOOGLE BLOG (Feb. 10, 2010), <http://googleblog.blogspot.com/2010/02/think-big-with-gig-our-experimental.html>.

250. Farhad Manjoo, *What Do You Do with the World's Fastest Internet Service?*, SLATE (Mar. 12, 2013), http://www.slate.com/articles/technology/technology/2013/03/google_fiber_review_nobody_knows_what_to_do_with_the_world_s_fastest_internet.html.

In any event, Google Fiber is just the beginning. Further improvements beyond one gigabit per second are on the horizon. Recently, for example, engineers discovered a method by which existing copper phone lines could actually support broadband speeds of up to ten gigabits per second at a fraction of the cost of current service.²⁵¹ XG-Fast, as it is called, will enable providers to supply much faster service at far cheaper cost than they do today with existing fiber optic transmission technologies. The researchers behind this finding expect that users will begin to benefit from the discovery within the next year.

XG-Fast represents the state of the art in transmission speed. In its most recent action, the agency explicitly asserted that it was merely upgrading the definition in order to meet consumer demand for new services that require more generous speed thresholds. In fact, providers around the country already had been providing speeds well over 25 Mbps.²⁵² The new standard just keeps the FCC up to speed on current services already available to most Americans. On this reasoning, the agency surely will have to reform the standard before long yet again.

But the reform does more than keep up with current trends in service and new applications. The agency explicitly concluded that the speed upgrade would also reduce disparities experienced by underserved communities. After all, more than half of rural inhabitants lack access to high-speed broadband service.²⁵³ Current high-speed broadband service, it explained, is too valuable to be available to only a portion of potential users. The agency explicitly invoked its responsibility under Section 706 to “expand robust broadband to all Americans in a timely way” to justify the benchmark reform.

There are notable regulatory consequences of the agency’s reform of the broadband speed benchmark. As noted above, the agency subsidizes providers to improve and more widely deploy broadband infrastructure. Only companies that provide broadband as the agency defines it could be entitled to such support. Support like this could make it easier for smaller emergent high-speed providers to enter markets in which incumbents have failed to provide high-speed service. In these

251. See Brian Fung, *This Practically Ancient Internet Technology Supports Speeds 1,000 Times the National Average*, WASH. POST (July 10, 2014), <http://www.washingtonpost.com/blogs/the-switch/wp/2014/07/10/this-practically-ancient-internet-technology-supports-speeds-1000-times-the-national-average/>.

252. Today, users generally require about 3 to 4 Mbps to support video chatting and 5 Mbps to stream high definition movies. See Bowen & Hoy, *supra* note 245; *Help Center, Internet Connection Speed Recommendations*, *supra* note 245. Users need at least 15 Mbps download speed to perform “basic functions plus more than one high demand application running at the same time.” Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, GN Docket No. 14-126, Tenth Broadband Progress Notice of Inquiry 7 (2014).

253. Press Release, *supra* note 247.

ways, the standard is another lever on which the agency can rely to assure delivery of high quality service to all Americans.

3. *The Same Rules for Wireless Devices*

A third way by which federal policymakers have redressed racial, ethnic, and class disparities in broadband use is by requiring mobile providers to adhere to the same rules that fixed providers must follow. The Open Internet Rules do this by banning discrimination based on the device users rely on to connect to the Internet.

Over half of Internet traffic travels over wireless networks. And more people today are relying on very high-quality wireless services to receive and transmit high-quality content and applications. Where, in 2010, about 200,000 Americans subscribed to the fastest mobile broadband services, today, more than 120 million do, and almost 300 million users subscribe to some high-speed mobile network service.²⁵⁴ Today, distinguishing wireless service from fixed service makes little sense; they all comprise broadband service.

Recognizing as much, the FCC decided to address its final rules to all broadband providers—fixed and wireless—and, accordingly, extended protection to all users in equal measure no matter which devices they use to go online. This is a shift from the agency's proposal in May 2014 to impose fewer requirements on mobile providers. The argument then, as it was four years before, was that wireless service was in its infancy and that service rules would impede innovation.

The FCC's Open Internet Rules reflect the important recognition among policymakers that, while wireless transmission speeds are closing in on fixed broadband speeds, different communities gain access to the Internet in different ways. That is, while mobile broadband use rates have climbed steadily across demographic groups from about thirty percent in 2010 to around fifty-five percent today, it remains the primary way of going online for a disproportionately higher number of rural residents and low income users, as well as Blacks and Latinos. Nearly two-thirds of Latinos rely on mobile connections to go online. And, according to some research, Blacks and Latinos have been early adopters of mobile technology, or at least are more likely to own a smartphone than Whites.²⁵⁵ The new rules accordingly redress another piece of disparity by recognizing that different communities access the Internet

254. See Edward Wyatt, *F.C.C. Revisits Net Neutrality Exemption for Mobile Broadband*, N.Y. TIMES (Sept. 15, 2014), http://www.nytimes.com/2014/09/16/technology/fcc-revisits-net-neutrality-exemption-for-mobile-broadband.html?_r=0.

255. AARON SMITH, PEW RESEARCH CTR., SMARTPHONE OWNERSHIP (2013); see also U.S. DEP'T OF COMMERCE, NAT'L TELECOMMS. & INFO. ADMIN., EXPLORING THE DIGITAL NATION: EMBRACING THE MOBILE INTERNET (2014).

with different devices. Consider, moreover, that the FCC is considering applying the 25 Mbps speed threshold to wireless.²⁵⁶

4. *Community Broadband for Everyone*

Finally, the fourth way in which federal policymakers have helped to redress broadband service disparities is by supporting efforts to operate or otherwise support broadband service by municipal governments. Private providers are an essential piece of the federal government's advocacy of deployment and adoption. But they are not the only ones capable of delivering high-speed service to residents. Local governments across the country, too, have been developing or supporting broadband in their communities in cooperation with local anchor institutions and major stakeholders.²⁵⁷ Widely touted projects in Chattanooga, Tennessee and Wilson, North Carolina, for example, provide extremely high-speed one gigabit service to their residents at relatively competitive subscription rates.²⁵⁸ The former repurposed existing electricity infrastructure in ways that have since inspired other cities and towns.²⁵⁹ These services now are so fast and reliable that they rival anything else offered by local providers at the same rate, and has even drawn the interest of neighboring rural communities.

Policymakers at the local and federal levels today advocate community broadband projects because those are generally the most effective ways of diversifying service options in communities with just one or two providers.²⁶⁰ Municipal service creates competition for broadband where there sometimes is little to none. Competition in the local market for service, they argue, stimulates innovation and investment in broadband infrastructure and generally inures to the benefit of local residents irrespective of how isolated their region may be. And, indeed, there are strong indications already that in every locality in which cities and towns have pursued municipal projects alone, or in partnership with a major stakeholder like Google Fiber, service providers have responded by offering comparable or near-comparable service.²⁶¹

256. See Press Release, FCC, FCC Launches Inquiry for Annual Broadband Progress Report (Aug. 6, 2015) (on file with author).

257. See Sylvain, *supra* note 108; SHARON E. GILLET ET AL., TELECOMMUNICATIONS POLICY RESEARCH CONFERENCE, LOCAL GOVERNMENT BROADBAND INITIATIVES II (Sept. 18, 2003).

258. Nestor Davidson & Olivier Sylvain, *Cross Country: An Old Tobacco Town Battles over Smokin' Fast Broadband*, WALL ST. J. (Sept. 5, 2014, 6:38 PM), <http://www.wsj.com/articles/nestor-davidson-and-olivier-sylvain-an-old-tobacco-town-battles-over-smokin-fast-broadband-1409956682>.

259. See, e.g., DAVID TALBOT ET AL., BERKMAN CTR., HOLYOKE: A MASSACHUSETTS MUNICIPAL LIGHT PLANT SEIZES INTERNET ACCESS BUSINESS OPPORTUNITIES (2015).

260. Jon Brodtkin, *Fed Up, US Cities Take Steps to Build Better Broadband*, ARSTECHNICA (Oct. 27, 2014, 6:00 AM), <http://arstechnica.com/business/2014/10/fed-up-us-cities-try-to-build-better-broadband/>.

261. See Jeff Baumgartner, *AT&T Takes on Google Fiber in K.C.*, MULTICHANNEL NEWS (Feb. 17, 2015, 9:36 AM), <http://www.multichannel.com/news/technology/att-takes-google-fiber-kc/388021>.

Consistent with this vision, the President announced a new program late in 2014, BroadbandUSA, to promote municipal broadband by offering technical assistance to interested communities and publishing guidelines on infrastructure planning, financing, construction, and operations.²⁶² In this regard, their advocacy of municipal broadband coheres with the broad policy objective of the Open Internet Rules to promote deployment.

Local projects to provide broadband service could remedy racial, ethnic, and income disparities because those factors are so closely related to residency.²⁶³ But such laws face a significant obstacle in states that prohibit or significantly curtail municipalities' legal authority to enter the market for service. At least nineteen states have such laws.²⁶⁴ Proponents of these restrictions argue, among other things, that municipal participation in the market for broadband service would undermine competition rather than encourage it because governments do not have to bear the same risks or pay the same operational costs and taxes as private corporations. They also argue that some municipal broadband projects are mismanaged.

In any case, the FCC recently approved an application from Wilson and Chattanooga to preempt state laws in North Carolina and Tennessee that prevent them from offering broadband service to local residents.²⁶⁵ Over the objection of providers from all over the country, the agency cited its authority under Section 706 of the amended Communications Act to remove barriers to infrastructure development.²⁶⁶ Congress, too, may intervene. The Senate is currently considering a bill that would amend the Communications Act to bar states from blocking municipal broadband.²⁶⁷ The FCC's action here is in furtherance of competition in the market for broadband service. But it also advances the distributional concerns at the heart of the Communications Act to the extent it assumes all communities have a stake in ensuring its residents have high quality access to broadband.

262. See Press Release, White House, Office of the Press Sec'y, Fact Sheet: Broadband That Works: Promoting Competition and Local Choice in Next-Generation Connectivity (Jan. 13, 2015) (on file with author).

263. Crow, *supra* note 21.

264. Sylvain, *supra* note 108, at 795.

265. See Press Release, FCC, FCC Finds FCC Grants Petitions to Preempt State Laws Restricting Community Broadband in North Carolina, Tennessee (Feb. 26, 2015) (on file with author).

266. 47 U.S.C. § 1302(a) (2015). The agency might also rely on its authority under a separate provision of the Communications Act under Title II to ensure that states do not impose rules that "prohibit or have the effect of prohibiting the ability of any entity to provide" service. 47 U.S.C. § 253 (1996).

267. Brian Fung, *Cory Booker's Introducing a Bill to Help Cities Build Their Own, Public Internet Services*, WASH. POST (Jan. 21, 2015), <http://www.washingtonpost.com/blogs/the-switch/wp/2015/01/21/cory-bookers-introducing-a-bill-to-help-cities-build-their-own-public-internet-services/>.

C. NEW POSSIBILITIES

A reorientation toward redressing disparities in broadband deployment, adoption, and use could have significant implications for policymakers and scholars in a variety of other policy areas and ways today. The next Subparts briefly explore some of these implications in the specific contexts of housing and disparate law enforcement and surveillance.

1. *Housing and Broadband Use Patterns*

Consider housing policy. The intersection of residential segregation and broadband use has not been significantly studied by social scientists, legal scholars, or policymakers. But this intersection should be studied because such service patterns also track longstanding patterns of racial segregation in housing and, accordingly, correspond with the very problems to which fair housing laws are addressed.²⁶⁸ Indeed, in the wake of the Supreme Court's recent decision to affirm disparate impact rules under the Fair Housing Act,²⁶⁹ federal officials have recently elaborated existing rules against housing segregation and expanded the number of resources they will devote to enforce such rules in recognition that residential housing patterns entrench a range of other structural disadvantages.²⁷⁰

So, apart from attending to policy interventions that promote the same treatment of wireless and wired devices or that protect municipal broadband, federal communications policymakers could also help to redress racial disparities in Internet access and use by aligning federal civil rights laws addressed to residential housing patterns with residential broadband service patterns.²⁷¹ Current statutory and regulatory authorities do not provide legal remedies to broadband subscribers against providers. Yet, fair housing laws suggest that, first, authorities should provide legal remedies, and, second—and just as importantly—that local, state, and federal agencies might be complicit in furthering disparities in access along racial lines if they do not act to prevent it. Government policies on municipal franchising of cable broadband service, for example, arguably frustrate nondiscrimination norms in fair housing law if they further entrench racial disparities. This intuition

268. See *supra* Part II.B.1.

269. See Texas Dep't of Hous. & Cmty. Affairs v. Inclusive Cmty. Project, 135 S. Ct. 2507 (2015).

270. See Julie Hirschfeld Davis & Binyamin Appelbaum, *Obama Unveils Stricter Rules Against Segregation in Housing*, N.Y. TIMES (July 8, 2015), <http://www.nytimes.com/2015/07/09/us/hud-issuing-new-rules-to-fight-segregation.html>.

271. Here and elsewhere, I have written about the significant correlation between geography and the quality of broadband service. See Sylvain, *supra* note 108.

would have much to learn from and contribute to the rich scholarship on redressing inequality in housing policy.²⁷²

The U.S. Department of Housing and Urban Development (“HUD”) seems to appreciate the important overlap between housing patterns and broadband access levels. In the past year, it has initiated an endeavor in collaboration with nonprofits and private actors to extend affordable broadband access to families living in HUD-assisted housing in twenty-seven cities and one tribal area across the country.²⁷³ HUD has launched, moreover, a related demonstration project to measure the reach and impact of broadband connectivity in public housing.²⁷⁴

2. *Disparate Law Enforcement Surveillance and Broadband Use*

Such an approach might also cause scholars and policymakers to more consistently examine the ways in which the scope of privacy protection varies among the demographic groups, tracking the historically entrenched demographic fault line of race, for example. Scholars might begin to study, for example, how, if at all, race, ethnicity, and class interact with electronic surveillance practices of mobile device by law enforcement. Media reports already strongly suggest that the public social media accounts of prepubescent, teenage, and young adult Black men are disproportionately surveilled by law enforcement officials.²⁷⁵

Focus on these questions and patterns would have much to learn from scholarship on privacy law and the disparate uses of networked devices.²⁷⁶ In any event, findings on these questions could have implications for a whole set of scholarly and regulatory interventions.

D. EQUALITY’S LIMITS

In spite of the substantial gains that the equality framing offers, full and equal user participation has its limits and pitfalls, too. First, Congress’s charge to the FCC to ensure reasonably comparable service to all Americans does not require that all Americans actually do the same things or even good things when they go online. Nor must users be equally entrepreneurial or sociable once they are online. Rather, as ambitious as the goal of universality is, the statutory command is limited

272. See, e.g., Olatunde C.A. Johnson, *Beyond the Private Attorney General: Equality Directives in American Law*, 87 N.Y.U. L. REV. 1339, 1339 (2012).

273. Press Release, U.S. Dep’t of Housing & Urban Dev., President Obama and Secretary Castro Announce Initiative to Extend High Speed Broadband Access for Students in HUD-Assisted Housing (July 15, 2015) (on file with author).

274. Housing and Urban Development Notice, 80 Fed. Reg. 18248 (Apr. 3, 2015).

275. Rose Hackman, *Is the Online Surveillance of Black Teenagers the New Stop-and-Frisk?*, GUARDIAN (Apr. 23, 2015, 8:00 AM), <http://www.theguardian.com/us-news/2015/apr/23/online-surveillance-black-teenagers-new-stop-and-frisk>.

276. See, e.g., Napoli & Obar, *supra* note 18, at 326.

to ensuring that high-quality broadband service is available to all Americans.²⁷⁷

For starters, users will have to go online. Many, however, just choose to stay disconnected out of defiance. There is little that communications policy can do on its face to require engagement. Indeed, there are good reasons users might choose not to be engaged, in so far as that choice is well informed.

It is not at all clear, moreover, that everyone who is underserved or unserved will do much once they are online. We already know, for example, that users have varying degrees of “digital readiness.” According to one prominent report, nearly one-third of Americans self report low levels of knowledge of and confidence in using computers or finding information online.²⁷⁸ Around twenty percent of Americans, moreover, report low levels of digital readiness even though they have broadband at home.²⁷⁹ And about one-eighth of American households do not subscribe to broadband because they do not think the Internet is relevant to their lives.²⁸⁰ So, irrespective of the range of new applications and services that will be at their disposal, particularly after the FCC implements the reforms I outline above, many users will continue to stay disconnected.

For those who do choose to connect, however, it is not at all clear that they will have the ambition to do more than interact in the most superficial or ephemeral ways. And, in any event, dangers await users nearly everywhere online. To begin, there are myriad incursions on privacy and consumer sovereignty that all users experience when they go online.²⁸¹ But, in addition to these routine costs of online participation, historically disadvantaged groups are likely to confront a variation of the same obstacles and problems they experience in the physical world. The forms of racial bias in real estate and on the job market in the physical world, for example, are also likely to appear on the Internet. Consider Airbnb, the social networking service that enables people to rent out their homes to strangers. White users of the service generally earn twelve percent more than Black users.²⁸² Or consider that, a couple years ago,

277. It is worth noting here that the Departments of Agriculture and Commerce have launched training and grant programs for people and institutions interested in improving digital readiness. See *Community Connect Grants*, U. S. DEP'T OF AGRIC., <http://www.rd.usda.gov/programs-services/community-connect-grants> (last visited Feb. 8, 2016); see also DIGITALLITERACY.GOV, <http://www.digitalliteracy.gov> (last visited Feb. 8, 2016).

278. HERRIGAN, *supra* note 123, at 2.

279. ZICKUHR & SMITH, *supra* note 22.

280. *Id.*; see also *supra* Part II.B.1.

281. PASQUALE, *supra* note 93, at 143–45; Ohm, *supra* note 92.

282. Benjamin Edelman & Michael Luca, *Digital Discrimination: The Case of Airbnb.com*, (Harvard Bus. Sch., Working Paper 14-054). Rating systems on share sites like Airbnb and Uber, for example,

search terms on Google that included Black-identified names generated advertisements suggestive of an arrest of a person with that name at an alarmingly high rate.²⁸³ Or consider that new forms of Internet data mining might introduce new forms of employment discrimination—discrimination that is not easily accounted for under existing civil rights laws.²⁸⁴ Or consider that baseball cards or iPhones sell for significantly more when the hand showcasing the items in the listing photograph on an online shopping forum is White rather than Black.²⁸⁵ We might also suspect that improvements in broadband access could increase opportunities for law enforcement, insurance companies, creditors, and others to survey or collect information about historically disadvantaged communities in ways that perpetuate existing biases and structures of discrimination.

All of these developments suggest that the pivot toward distributional concerns and equality in broadband policymaking could not have come any sooner. Presumably it means that policymakers will now attend to disparity and discrimination online in the same ways they have in the physical world.²⁸⁶ These developments also suggest an agenda for scholarship in communications and information law that is far less preoccupied with innovation for its own sake.

CONCLUSION

Communications scholars and policymakers have been myopically focused on promoting Internet innovation. They do so at the expense of the core distributional objectives of communications law. It is time they break free from their innovation fixation, and do the hard work of considering how everyone, including and especially members of historically marginalized groups, engage and participate in the Internet's rich affordances. Scholars and policymakers must now ensure that law and policy affirmatively further substantive broadband equality. This Article provides a theoretical and positive legal roadmap for this work, which is an essential first step in redressing ongoing racial and income disparities that continue to mark our society.

might also skew against Blacks. See Nancy Leong, *The Sharing Economy Has a Race Problem*, SALON (Nov. 2, 2014, 3:58 AM), http://www.salon.com/2014/11/02/the_sharing_economy_has_a_race_problem/.

283. See Latanya Sweeney, *Discrimination in Online Ad Delivery* 4 (Harvard Univ., 2013), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2208240.

284. See Solon Barocas & Andrew D. Selbst, *Big Data's Disparate Impact*, 104 CALIF. L. REV. (forthcoming 2016) (on file with author).

285. See IAN AYRES ET AL., RACE EFFECTS ON EBAY 22–23 (Sept. 27, 2011), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1934432&download=yes; see also Jennifer L. Doleac & Luke C.D. Stein, *The Visible Hand: Race and Online Market Outcomes*, 123 ECON. J. F469, F490–91 (2013).

286. Cf. Keats Citron, *supra* note 29, at 66.
