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Beyond Neutrality: How Zero Rating Can (Sometimes) Advance User Choice, Innovation, and Democratic Participation

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BEYOND NEUTRALITY: HOW ZERO RATING CAN (SOMETIMES) ADVANCE USER CHOICE, INNOVATION, AND DEMOCRATIC PARTICIPATION

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ABSTRACT

Over four billion people across the globe cannot afford Internet access. Their economic disadvantages are compounded by their inability to utilize the communicative, educational, and commercial tools that most Internet users take for granted. Enter zero rating. Mobile Internet providers in the developing world now waive the data charges for services like Facebook, Wikipedia, or local job-search sites. Despite zero rating's apparent benefits, many advocates seek to ban the practice as a violation of net neutrality.

This Article argues that zero rating is defensible by net neutrality's own normative lights. Network neutrality is not about neutrality for its own sake, but about advancing consumer choice and welfare, innovation in the development of new services, and democratic participation in the public sphere. Analysis of zero rating should accordingly focus on the question of how it impacts these goals: we ought to embrace zero-rating programs that advance net neutrality's substantive goals and reserve our skepticism for those services that would sacrifice the network's generative potential to pursue mere short-term gains.

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INTRODUCTION

Internet access is prohibitively expensive for over four billion people across the globe.[1] Mobile Internet carriers throughout the developing world have taken steps to close this gap through the practice of "zero rating," where they permit their subscribers to access websites or applications from select edge providers at no charge.[2] Hundreds of millions of users now take advantage of zero-rated services like Facebook's Free Basics, which offers access to sites like Facebook, Google, and Wikipedia alongside localized resources ranging from Ebola health advisories to women's rights applications and job postings.[3] As of 2014, forty-five percent of mobile operators around the world offered at least one zero-rated application.[4]

Despite zero rating's popularity, net neutrality advocates have argued that the practice should be condemned as a violation of net neutrality's non-discrimination principle. Barbara van Schewick argues that "zero-rating is the next big threat to innovation and free speech online."[5] Susan Crawford

1. *See* U.N. INTERNATIONAL TELECOMMUNICATION UNION, ICT FACTS AND FIGURES 1 (2015), http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2015.pdf.

2. "Carriers," as referenced throughout this Article, are the companies that provide Internet access. Domestic examples include mobile carriers like AT&T and T-Mobile. "Edge providers" are the sites or applications that subscribers utilize once they are online, like Google or Twitter.

3. *See infra* Part I.A.2.

4. ALLOT COMMUNICATIONS, APP-CENTRIC OPERATORS ON THE RISE: ALLOT MOBILE TRENDS CHARGING REPORT H1/2014, at 1 (2014), http://www.allot.com/wp-content/uploads/RP_MobileTrends_Charging_Report_H1_2014_LR_Publish.pdf.

5. Joel Rose, *What Net Neutrality Rules Could Mean for Your Wireless Carrier*, NPR ALL TECH CONSIDERED (Feb. 25, 2015) (quoting van Schewick), http://www.npr.org/blogs/alltechconsidered/2015/02/25/388948293/what-net-neutrality-rules-could-mean-for-your-wireless-carrier. Professor van Schewick has also specifically criticized the FCC for its failure to regulate zero rating in the United States rules. BARBARA VAN SCHEWICK, ANALYSIS OF PROPOSED NETWORK NEUTRALITY RULES 7–9 (Feb. 18, 2015),

is adamant in her own rejection of the practice: "Zero-rating is pernicious; it's dangerous; it's malignant."[6] Advocacy groups and many in the popular press likewise call zero rating at best a "dangerous compromise."[7] And in May 2015, over sixty-five non-governmental organizations ("NGOs") joined an open letter to denounce Facebook's efforts to launch its Internet.org program to serve poor communities in India.[8] The Telecom Regulatory Authority of India ("TRAI") subsequently banned the program notwithstanding Facebook's mobilization of over a million users for a write-in campaign.[9]

Those who defend zero rating typically argue that its connectivity benefits justify the apparent departure from net neutrality. From their perspective, limited access is better than no access because it allows people to communicate and improve their lives using tools that would otherwise remain out of reach.[10] To the extent net neutrality would prohibit these arrangements, commentators have cast the issue as a "faceoff between

http://cyberlaw.stanford.edu/downloads/vanSchewick2015AnalysisofProposedNetworkNeutralityRules.pdf.

6. Susan Crawford, *Zero for Conduct*, MEDIUM.COM BACKCHANNEL (Jan. 7, 2015), https://medium.com/backchannel/less-than-zero-199bcb05a868. Crawford concludes that "[r]egulators around the world are watching how the U.S. deals with zero-rating, and we should outlaw it. Immediately." *Id.*

7. *See* Jeremy Malcolm, *Net Neutrality and the Global Divide*, ELECTRONIC FRONTIER FOUND. (July 24, 2014), https://www.eff.org/deeplinks/2014/07/net-neutrality-and-global-digital-divide; *see also, e.g.*, Raegan MacDonald, *Wikipedia Zero and Net Neutrality: Wikimedia Turns Its Back on the Open Internet*, ACCESS NOW (Aug. 8, 2014), https://www.accessnow.org/blog/2014/08/08/wikipedia-zero-and-net-neutrality-wikimedia-turns-its-back-on-the-open ("[Wikipedia] Zero clearly violates net neutrality and is an attack on the future of the open internet."). In one of the most provocative examples, technology scholar John Naughton asserted that "[b]y condoning zero-rating we will condemn [people] to a lifetime of servitude as one of Master Zuckerberg's sharecroppers." John Naughton, *If the Price of Giving Everyone Internet Access Is Total Domination by Facebook, It's Not Worth It*, THE GUARDIAN (Jan. 10, 2015), http://www.theguardian.com/technology/2015/jan/11/internet-access-developing-nations-facebook-domination.

8. *See* Cade Metz, *Backlash Against Facebook's Free Internet Service Grows*, WIRED (May 18, 2015), http://www.wired.com/2015/05/backlash-facebooks-free-internet-service-grows/; *see also Open Letter to Mark Zuckerberg Regarding Internet.org, Net Neutrality, Privacy, and Security* (May 18, 2015), https://www.facebook.com/notes/accessnoworg/open-letter-to-mark-zuckerberg-regarding-internetorg-net-neutrality-privacy-and-/935857379791271 [hereinafter Open Letter to Mark Zuckerberg].

9. *See* Prohibition of Discriminatory Tariffs for Data Services Regulations, 2016, Gazette of India, sec. B(4) (Feb. 8, 2016); Anuj Srivas, *What Facebook's Spat with TRAI Tells Us About the Ethics of Digital Lobbying*, WIRE (Jan. 15, 2016), http://thewire.in/2016/01/15/what-facebooks-spat-with-trai-tells-us-about-the-ethics-of-digital-lobbying-19316/. While Facebook claims that it mobilized over eleven million users, TRAI confirmed receipt of only 1.89 million emails. *See* Srivas, *supra*.

10. *See, e.g.*, Erik Moeller, *Wikipedia Zero and Net Neutrality: Protecting the Internet as a Public Space*, WIKIMEDIA BLOG (Aug. 1, 2014), http://blog.wikimedia.org/2014/08/01/wikipedia-zero-and-net-neutrality-protecting-the-internet/ (arguing that "ensuring free access to important resources like Wikipedia is a social justice issue").

human rights and network neutrality principles."[11] The debate, as it has developed so far, shines light on net neutrality's limitations as a policy lever for achieving distributive justice, and forces scholars and policymakers to consider how communications law should balance net neutrality's non-discrimination principle against competing priorities in communications law.[12]

This Article steps back from that debate to argue that zero rating is defensible even by net neutrality's own normative lights. Network neutrality is not about neutrality for its own sake, but about advancing consumer choice and welfare,[13] innovation in the development of new services,[14] and democratic participation in the public sphere.[15] Scholars may disagree about which of these factors to prioritize, but these goals share a common thread: each seeks to facilitate diverse contributions from the Internet's global audience in order to maximize the network's benefits for all its participants. Collectively, we can call these net neutrality's "generativity" goals, applying Jonathan Zittrain's term for a system with the capacity "to produce unanticipated change through unfiltered contributions

11. Alex Howard, *Zero Rating Poses a Conundrum for Net Neutrality Advocates Around the World*, TECHREPUBLIC (Jan. 23, 2015), http://www.techrepublic.com/article/zero-rating-poses-a-conundrum-for-net-neutrality-advocates-around-the-world/. Arturo Carrillo's forthcoming article develops a thoughtful human-rights approach to the question, asserting that net neutrality and connectivity of the sort provided by zero rating are both facets of the right to free expression. *See* Arturo J. Carrillo, *Having Your Cake and Eating It Too? Zero-Rating, Net Neutrality and International Law* at 35-38 (SSRN Elec. Library, Working Paper No. 2,746,447, Mar. 6, 2016), http://ssrn.com/abstract=2746447 (forthcoming 19 STAN. TECH. L REV. (2016)).

12. Olivier Sylvain offers an excellent account of net neutrality's distributive difficulties in his article *Network Equality*, 67 HASTINGS L.J. 443 (2016). As Ellen Goodman argues in her forthcoming analysis of zero rating, moreover, the debate has exposed the "edge-provider centrism" of net neutrality, or its preoccupation with edge providers' interests rather than those of users themselves. Ellen P. Goodman, *Zero Rating: Equality and Free Speech at the Other Edge* at 9 (Working Paper, Apr. 4, 2016), http://riipl.rutgers.edu/wp-content/uploads/goodman-zero-rating-draft-1.pdf (forthcoming COLO. TECH. L.J. (2017)).

13. *See, e.g.*, Barbara van Schewick, *Network Neutrality and Quality of Service: What a Nondiscrimination Rule Should Look Like*, 67 STAN. L. REV. 1, 16–17 (2015) (arguing net-neutrality rules are necessary to cover the full range of relevant economic and noneconomic concerns implicated by network discrimination).

14. *See, e.g.*, BARBARA VAN SCHEWICK, INTERNET ARCHITECTURE AND INNOVATION (2012); Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257, 294 (2007); Mark A. Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L. REV. 925, 931–32 (2001); Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH. L. 141, 145 (2003).

15. *See, e.g.*, DAWN C. NUNZIATO, VIRTUAL FREEDOM: NET NEUTRALITY AND FREE SPEECH IN THE INTERNET AGE (2009); Marvin Ammori, *First Amendment Architecture*, 2012 WIS. L. REV. 1, 7 (asserting "that network neutrality furthers free speech goals"); Jack M. Balkin, *The Future of Free Expression in a Digital Age*, 36 PEPP. L. REV. 427, 438 (2009); Susan P. Crawford, *The Internet and the Project of Communications Law*, 55 UCLA L. REV. 359, 391 (2007) ("The online world enables the creation of new relationships and thus new ideas that are key to our future economic growth.").

from broad and varied audiences."[16] In short, net neutrality's purpose is not to achieve neutrality per se, but to advance generativity.

Zero rating has real potential to advance these aspects of generativity. When users cannot otherwise afford access, zero rating can enhance user choice by offering users new options. It can spur innovation by creating platforms that connect developers to new markets and inducing them to create apps for poorer users whose needs would otherwise be ignored. And it can facilitate democratic participation not only by delivering users the tools to engage in free speech online, but also by increasing users' educational and economic prospects so as to give them a greater voice both online and off. Zero rating might even foment political and economic demand for full Internet access by showing underserved communities how the Internet is relevant to their lives.

Our analysis of zero rating should accordingly focus on the question of how it impacts generativity: we ought to embrace zero-rating programs that advance net neutrality's own normative goals and reserve our skepticism for those services that would sacrifice the network's generative potential to pursue mere short-term gains. Network management practices can be discriminatory yet generative at the same time. Take the example of spam and virus filtering: carriers routinely block these forms of malicious and unwanted content. One could argue that these filters violate net neutrality in their departure from strict nondiscrimination, despite their apparent benefits to users. But the practice is defensible in terms of its salutary effects for the Internet's generativity: removing the threat of malware frees users to engage with new apps and communities that they might have avoided in a less secure environment.

Regulators nonetheless face a difficult task in evaluating whether specific zero rating programs are generative. Zero rating is a new practice, and predictions are speculative: the critics hypothesize that carriers will deploy zero rating in ways that stifle innovation and free speech, while supporters hope that it will allow for new forms of human flourishing. Rather than indulge in speculation, policymakers ought to design policy experiments that will generate the information necessary to test these competing hypotheses and design appropriate regulations.

This Article proceeds in four Parts. Part I introduces existing zero-rating programs. These programs are not monolithic: while some platforms resemble walled gardens, others are open platforms structured to facilitate entry by third parties and promote users' free expression. This Part also

16. *See* JONATHAN ZITTRAIN, THE FUTURE OF THE INTERNET: AND HOW TO STOP IT 70 (2008). Jack Balkin draws a similar connection between these ideas: "[W]e best serve free speech values by decentralizing and promoting innovation, by letting lots of different people experiment with a wide variety of new ways of communicating, sharing information, associating, and building things together." Balkin, *supra* note 15, at 438.

develops a three-part framework for comparing programs based on (1) their payment structures; (2) their processes for selecting which edge providers to zero-rate; and (3) their communications modalities (i.e., the degree to which the services permit users to communicate with one another and the larger online world).

Part II assesses the net-neutrality objection. Zero rating's proponents have the better side of the argument as to the practice's short-term generativity benefits: it is hard to dispute that extending zero-rated services to people who otherwise lack Internet access is an improvement over the status quo. The more difficult question goes to its long-term effects. Zero rating might cannibalize demand for affordable, general-purpose Internet and thereby crowd out more generative alternatives for promoting access to underserved communities. Alternatively, it might serve as a stepping stone to broader reforms by introducing the Internet to constituents who are unfamiliar with its potential.

Part III delves into the question of regulatory design. At present there are more questions than answers regarding the costs and benefits of zero rating. Regulators therefore ought to experiment with policies designed to produce better information on zero rating and its role in telecommunications policy. Part IV continues the discussion with an exploration of specific policy interventions that regulators could test to mitigate zero rating's risks while promoting its generative potential.

I. ZERO RATING IN PRACTICE

Zero rating is not monolithic. Its implementations range from plans that offer free access to a single website to those that offer a comprehensive platform for mobile applications. And programs vary considerably depending on the degree of control that the carriers exercise in deciding which sites or services to feature. Understanding the specific user benefits and anti-competitive risks for each of these approaches is a prerequisite to effective zero-rating regulation. This Part accordingly details and compares both the structures and functional features of existing programs.

A. Zero-Rating Models

As of 2014, nearly one hundred different mobile Internet providers throughout the world offered some form of zero-rated service.[17] This Article identifies the primary approaches to zero rating by using the best-known programs as examples.

17. *See* ALLOT COMMUNICATIONS, *supra* note 4, at 1, 12.

1. Single-Website Plans

The simplest zero-rating plans offer just one website for free. This discussion focuses on three of these plans: Facebook Zero, the first zero-rated service; Wikipedia Zero, which demonstrates a more transparent approach; and Virgin Mobile's *a la carte* "Custom" plan in the United States.

a. Facebook Zero

Facebook Zero launched as the first zero-rated service in May 2010, offering free Facebook through more than fifty different mobile carriers across forty-five countries and territories.[18] It offers a simplified version of the Facebook site, one optimized for use on feature phones like those prevalent throughout the developing world.[19] One of the more noticeable differences between Facebook Zero and Facebook's standard interface is the lack of photos: Facebook Zero is by default text only.[20] Users who wish to view nontext content, for example to view profile pictures, must purchase a data subscription to download the images. Users who wish to follow external links to material not hosted on Facebook must likewise pay for data.[21]

Facebook has not made information regarding its business arrangements with mobile carriers available to the public. It is therefore difficult to verify whether Facebook compensates carriers for the bandwidth consumed by Facebook Zero, or whether the carriers instead offer Facebook Zero without compensation to attract new subscribers (or entice subscribers to pay for data so they can download photos and follow links to sites outside Facebook proper).[22] The idea that carriers might offer Facebook

18. *See* Matt Hicks, *Fast and Free Facebook Mobile Access with 0.facebook.com*, FACEBOOK BLOG (May 18, 2010), https://www.facebook.com/notes/facebook/fast-and-free-facebook-mobile-access-with-0facebookcom/391295167130; Christopher Mims, *Facebook's Plan To Find Its Next Billion Users: Convince Them the Internet and Facebook Are the Same*, QUARTZ (Sept. 24, 2012), http://qz.com/5180/facebooks-plan-to-find-its-next-billion-users-convince-them-the-internet-and-facebook-are-the-same/.

19. *See* Mims, *supra* note 18. Feature phones lack the processing power of today's smartphones yet still have the capacity to go online. *See id.* Offering Internet through these devices makes use of what limited infrastructure is already in place: more people in the developing world have access to mobile phones than to other staples of modern life such as toilets, let alone home computers or landline connections. *See Deputy UN Chief Calls for Urgent Action To Tackle Global Sanitation Crisis*, UNITED NATIONS NEWS CENTRE (Mar. 21, 2013), http://www.un.org/apps/news/story.asp?NewsID=44452.

20. Mims, *supra* note 18.

21. *Id.*

22. *Accord* Pedro Henrique Soares Ramos, *Towards a Developmental Framework for Net Neutrality: The Rise of Sponsored Data Plans in Developing Countries* at 8 & n.38 (SSRN Elec. Library, Working Paper No. 2,418,307, Mar. 31, 2014), http://ssrn.com/abstract=2418307; Mims, *supra* note 18.

Zero bandwidth for free is plausible in light of the disclosure that Facebook's more comprehensive zero-rating program—Facebook Free Basics—does not pay carriers.[23] It is also difficult to verify whether the parties impose any sort of exclusivity agreements on one another, such as restricting mobile carriers from zero-rating services that compete with Facebook, or restricting Facebook from partnering with other carriers in the same country or region.[24]

b. Wikipedia Zero

The Wikimedia Foundation launched Wikipedia Zero in 2012.[25] What began as an arrangement with a single mobile carrier—Orange Telecom—has grown to cover sixty-two countries through eighty-two different carriers, serving more than six hundred million subscribers.[26] Like Facebook Zero, Wikipedia Zero began as a text-only site, but the program has expanded to offer images and other multimedia content to Wikipedia Zero users.[27] Importantly, the full mobile version is designed to allow users to edit Wikipedia pages like any other user, allowing Wikipedia Zero's users to participate not only as readers but also as contributors.[28]

In an effort to maintain transparency and accountability, the Wikimedia Foundation has publicly posted the operating principles for Wikipedia Zero.[29] Several of these principles protect the user experience. The Wikimedia Foundation commits, for example, to providing the full version of the site to all users, to excluding mobile carriers from exercising editorial control, and to maintaining the confidentiality of records collected

23. *See infra* Part I.A.2.

24. Pedro Soares Ramos' study of Facebook Zero's existing partnerships suggests, however, that in Latin America, Facebook may have made exclusive arrangements with the mobile provider Claro. Ramos, *supra* note 22, at 8 n.38.

25. *See* Kul Wadhwa, *Free Mobile for Wikipedia Starts with Orange*, WIKIMEDIA BLOG (Jan. 24, 2012), http://blog.wikimedia.org/2012/01/24/free-mobile-for-wikipedia-starts-with-orange/.

26. Wikipedia Zero, WIKIMEDIA FOUNDATION, http://wikimediafoundation.org/wiki/Wikipedia_Zero (last visited Jan. 23, 2016).

27. I thank Yana Welinder, Legal Director of the Wikimedia Foundation, for this insight into the program's development.

28. *See* Samuel Gibbs, *Erik Möller: Wikipedia Can Be Read on Mobile for Free in Developing World*, GUARDIAN (Aug. 8, 2014), http://www.theguardian.com/technology/2014/aug/08/erik-moller-wikipedia-can-be-read-on-mobile-for-free-in-developing-world; *see also* Joe Sutherland, *Ram Prasad Joshi: Writing Wikipedia from the Western Hills of Nepal*, WIKIMEDIA BLOG (June 24, 2014), https://blog.wikimedia.org/2014/06/24/writing-wikipedia-from-the-western-hills-of-nepal/ (recognizing a Nepali man for contributing over 6000 edits to the Nepali Wikipedia using only a feature phone prior to the introduction of Wikipedia Zero).

29. Wikipedia Zero Operating Principles, WIKIMEDIA FOUNDATION, http://wikimediafoundation.org/wiki/Wikipedia_Zero_Operating_Principles (last visited Jan. 23, 2016); *see* Moeller, *supra* note 10.

by Wikipedia.[30] Other operating principles reduce the potential for Wikipedia Zero to distort the local mobile market: the Wikimedia Foundation disavows any exchange of payment and any exclusivity agreements.[31] In the same spirit, the Wikimedia Foundation prohibits carriers from using Wikipedia Zero as an enticement to purchase special service bundles.[32] Indeed, the Foundation requires that participating carriers allow all their subscribers to access Wikipedia Zero, even those subscribers who purchase no data plan at all.[33]

Wikipedia Zero is also noteworthy because would-be users have asserted grassroots demands for the service. In November 2012, students at Sinenjongo High School, in the economically poor South African township of Joe Slovo, launched a petition asking South African mobile providers to join the Wikipedia Zero project.[34] As the students explained, they lacked adequate computer facilities at school to conduct research or obtain supplemental reading materials.[35] They had no library at their school, and they could not reach their closest library after school before it closed each evening.[36] Yet ninety percent of them owned Internet-capable cell phones.[37] South African mobile provider MTN took up the students' cause by partnering with the Wikimedia Foundation to offer Wikipedia Zero.[38]

c. Virgin Mobile Custom

The single-website approach has also made inroads domestically. Virgin Mobile's "Custom" plan offers a special deal so that customers can sign up for unlimited access to Facebook, Twitter, Instagram, or Pinterest.[39]

30. Wikipedia Zero Operating Principles, *supra* note 29.

31. *Id.*

32. *Id.*; *see also* Yana Welinder & Carolynne Schloeder, *Chilean Regulator Welcomes Wikipedia Zero*, WIKIMEDIA BLOG (Sept. 22, 2014), http://blog.wikimedia.org/2014/09/22/chilean-regulator-welcomes-wikipedia-zero/.

33. *See* Wikipedia Zero Operating Principles, *supra* note 29.

34. *See* The 1 Generous Thing Mobile Providers Could Do to Help Kids All Over the World, CHANGE.ORG, https://www.change.org/p/the-1-generous-thing-mobile-providers-could-do-to-help-kids-all-over-the-world (last visited Jan. 23, 2016) [hereinafter Change.org Petition]; *see also* Moeller, *supra* note 10.

35. Change.org Petition, *supra* note 34.

36. *Id.*

37. *Id.*

38. Victor Grigas, *MTN South Africa Responds to Sinenjongo High School Open Letter and Launches Wikipedia Zero*, WIKIMEDIA BLOG (Mar. 18, 2014), http://blog.wikimedia.org/2014/03/18/mtn-south-africa-responds-to-sinenjongo-high-school-open-letter-and-launches-wikipedia-zero/.

39. *See* Issie Lapowsky, *Virgin Mobile's New Wireless Plan Is Like Netflix for Your Phone*, WIRED (July 31, 2014), http://www.wired.com/2014/07/virgin-mobiles-new-wireless-plan-is-like-netflix-for-your-phone/.

And this plan—which Virgin offers exclusively through Walmart[40]—appears to be aimed at lower-income users. There is an element of user choice—the user gets to pick which one of these sites to zero-rate, and can pay extra for access to more than one. But the user is limited to selecting from those sites that Virgin Mobile has included on its menu.

2. Website Bundles

Some zero-rating plans go beyond offering access to a single website and instead bundle together several preselected websites. Facebook's Free Basics—formerly Internet.org—is the most well-known of these, but other services like T-Mobile's domestic Music Freedom and Binge On plans operate on a similar model.

a. Facebook Free Basics

Free Basics offers a suite of zero-rated commercial sites alongside public information and NGO resources that vary from country to country. When the program launched as Internet.org in Zambia, for example, it offered not only access to Facebook, Google's search page, and Wikipedia, but also the option to browse local job listings, read UNICEF health advisories regarding Ebola, and connect with the Zambian women's rights network.[41] Following its Zambian launch in July 2014, the program has expanded to cover sixteen countries.[42]

In its first Internet.org incarnation, Facebook unilaterally selected sites for inclusion in the service through a closed process. Following heavy protests in India—where users' rights groups argued the service violated net neutrality[43]—Facebook changed tack and opened Internet.org to

40. *See Virgin Mobile USA Launches Virgin Mobile Custom—Fully Customizable Cell Phone Plan with Rich Parental Controls*, VIRGIN MOBILE NEWSROOM (July 30, 2014), http://newsroom.virginmobileusa.com/press-release/handsets/virgin-mobile-usa-launches-virgin-mobile-custom-%E2%80%93-fully-customizable-cell-pho.

41. *See* Mat Honan, *Facebook-Backed Nonprofit Brings Free Internet to Zambia*, WIRED (July 31, 2014), http://www.wired.com/2014/07/internet-org-zambia/; Guy Rosen, *Introducing the Internet.org App*, INTERNET.ORG (July 31, 2014), https://www.internet.org/press/introducing-the-internet-dot-org-app. Note that—although Wikipedia is included in the service—Wikipedia did not ask to be included. *See* Sriram Srinivasan, *I Think Wikipedia Should Be Objecting to How Internet.org Is Using Their Site*, THE HINDU (Feb. 11, 2015), http://www.thehindu.com/sci-tech/technology/internet/i-think-wikipedia-should-be-objecting-to-howinternetorgis-using-their-site/article6882515.ece (interviewing Ethan Zuckerman of the Center for Civic Media at MIT). Rather, Facebook made the unilateral decision to include it.

42. *See* Wikipedia, *Internet.org*, http://en.wikipedia.org/wiki/Internet.org (last visited Mar. 16, 2016) (detailing Internet.org's launch timeline).

43. *See, e.g.*, Mahesh Murthy, *Poor Internet for Poor People: Why Facebook's Internet.org Amounts to Economic Racism*, QUARTZ (Apr. 17, 2015), http://qz.com/385821/poor-internet-for-poor-people-why-facebooks-internet-org-amounts-to-economic-racism/; Matthew Wall, *Indian Companies Withdraw from Facebook's Internet.org*, BBC NEWS (Apr. 16, 2015), http://www.bbc.com/news/technology-32334181.

applications from any site or service that meets its participation guidelines. Specifically, Facebook invites applications from apps that encourage the user to explore the larger Internet, comply with efficiency guidelines (i.e., by avoiding bandwidth-intensive features), and meet a set of technical specifications.[44] Facebook also made clear that Internet.org did not pay carriers, deflecting any charges that Facebook bribed carriers for privileged access.[45] One year after launch, Facebook reported that more than half of people who tried Internet.org had purchased full Internet access within the first thirty days.[46]

As noted in the Introduction above, however, over sixty NGOs joined a letter denouncing the project even after Facebook opened the platform to new applications.[47] Among more general complaints about the limits of zero rating, the protestors objected that the name of the platform—"Internet.org"—misled users into thinking its limited offering was equivalent to the Internet.[48] They also objected to the content of the technical specifications, specifically Facebook's refusal to support encryption and secure-browsing technologies.[49] As the critics argued, Facebook's failure to support encryption rendered users' web traffic "vulnerable to malicious attacks and government eavesdropping."[50]

Facebook addressed these concerns when it renamed the program "Free Basics" in September 2015, jettisoning its potentially misleading name, and committed itself to supporting secure browsing "wherever possible."[51] TRAI nonetheless banned the service in February of this year.[52] Ongoing criticism focuses on the remaining defects in Facebook's

44. *See* Aman Shah & Nivedita Bhattacharjee, *Facebook Opens Internet.org to Developers Amid Open Web Debate in India*, REUTERS (May 4, 2015), http://www.reuters.com/article/2015/05/04/us-facebook-internet-idUSKBN0NP0ES20150504; *Internet.org Participation Guidelines*, FACEBOOK, https://developers.facebook.com/docs/internet-org/participation-guidelines (last visited Jan. 23, 2016).

45. Murthy, *supra* note 43. Query, however, whether wealth transfers from a major U.S. firm like Facebook to developing-world Internet providers might help fund the expansion of local telecommunications infrastructure. *See infra* Part IV.B.3.

46. *One Year In: Internet.org Free Basic Services*, FACEBOOK NEWSROOM (July 26, 2015), http://newsroom.fb.com/news/2015/07/one-year-in-internet-org-free-basic-services/.

47. *See* Metz, *supra* note 8.

48. *See* Open Letter to Mark Zuckerberg, *supra* note 8; *see also id.* (objecting that the program acts as a walled garden, creates risks for free expression, and threatens to narrow the digital divide by creating a two-tiered Internet).

49. *See id.*

50. *Id.*

51. Jessi Hempel, *Facebook Renames Its Controversial Internet.org App*, WIRED (Sept. 24, 2015), http://www.wired.com/2015/09/facebook-renames-controversial-internet-org-app.

52. *See supra* note 9 and accompanying text.

security protocol[53] and on the potential for Facebook to abuse its position by surveilling the traffic routed through the Free Basics program.[54]

b. T-Mobile Music Freedom

In the United States, T-Mobile has unveiled two zero-rated service bundles. The first, Music Freedom, offers unlimited access to popular music services including Spotify, Pandora, and Apple's new "Apple Music" without having to worry about data caps.[55] While T-Mobile retains the discretion to choose which streaming services to include, in effect it has exempted all the major streaming services from data charges and now waives data charges for thirty-three different services.[56] The second, Binge On, takes a similar approach to video streaming. At launch it offered unlimited access to twenty-four different video sites, including Netflix, Hulu, and ESPN (though YouTube is conspicuously absent).[57] Streaming sites that wish to join the program must comply with technical requirements including a downgrade in video quality to a less bandwidth-intensive resolution.[58]

The reaction to Music Freedom was more positive than for Binge On. Commenting specifically on these programs, Professor Barbara van Schewick argued that Music Freedom might be a permissible form of zero rating; even though the service discriminates in favor of music streaming relative to other data, the competitive harm is mitigated because T-Mobile refuses to discriminate between music-streaming applications.[59] Following

53. *See* Access Team, *Free Basics vs. Basic Internet Freedom: Three Questions for Mark Zuckerberg*, ACCESS NOW (Sept. 24, 2015), https://www.accessnow.org/free-basics-vs-basic-internet-freedom-three-questions-for-mark-zuckerberg/; Eben Moglen & Mishi Choudhary, *Fictional Internet Policy Is Bad for India, Good Only for Facebook*, TECH2 (Sept. 28, 2015), http://tech.firstpost.com/news-analysis/fictional-internet-policy-is-bad-for-india-good-only-for-facebook-282664.html ("No one using 'Free Basics' will ever be able to assure herself that the bank or store or government services website she thinks she's using is genuine, because the architecture still breaks the 'authentication' pathway between the user and the remote system.").

54. *See* Moglen & Choudhary, *supra* note 53 ("[T]he poor will be comprehensively surveilled by Facebook, losing any shred of personal privacy, while the rich using the real Internet do not route all their traffic through Facebook.").

55. *See* Jon Brodkin, *Apple Music Exempted from T-Mobile's Data Limits and Throttling*, ARS TECHNICA (July 28, 2015), http://arstechnica.com/business/2015/07/apple-music-exempted-from-t-mobiles-data-limits-and-throttling/; Marcus Wohlsen, *Free Mobile Data Plans Are Going to Crush the Startup Economy*, WIRED (Aug. 1, 2014), http://www.wired.com/2014/08/free-mobile-data-plans-are-going-to-crush-the-startup-economy/.

56. Brodkin, *supra* note 55.

57. Nick Statt, *T-Mobile Will Let You Stream Netflix and HBO Without Using Up Your Data*, VERGE (Nov. 10, 2015), http://www.theverge.com/2015/11/10/9704482/t-mobile-uncarrier-binge-on-netflix-hbo-streaming.

58. *See id.*

59. *See* VAN SCHEWICK, *supra* note 5, at 9 (arguing that, while zero-rating programs that discriminate within a class should be banned, those like Music Freedom that neither discriminate nor charge the edge provider could be evaluated instead on a case-by-case basis).

the later release of Binge On, however, Professor van Schewick argued that the program creates barriers to innovation because it effectively forces new entrants to the video streaming market to strike a deal with T-Mobile and comply with its technical requirements.[60]

3. Sponsored Data

The sponsored-data paradigm is one where a party pays the data charges for delivery of its own content. AT&T pioneered the idea through its U.S. "sponsored-data" plan in January 2014: its model allows marketers to pay the data charges associated with app trials or video advertisements and thereby avoid consuming subscribers' monthly data allotments.[61]

mCent pushed the model in a more ambitious direction when it launched its own sponsored-data program in the developing world later in 2014.[62] Major online firms like Amazon and Twitter now pay the data charges for mCent users to either view advertisements or use free versions of their apps, as do several regional competitors and smaller developers.[63] But the companies are obliged to pay for more than just their own data: every time a user views an ad or downloads a sponsored app, the sponsor pays for a data credit that the user can use to browse any site on the Internet.[64] The user who views a one megabyte ad, for example, could earn two megabytes to be applied towards browsing other parts of the web.[65] Just one year after launch, mCent had already partnered with 237 mobile carriers around the globe, and in the process had become one of India's largest platforms for advertising apps, second only to Facebook.[66]

In another variant on the sponsored-data approach, firms have begun to propose zero-rated applications platforms. Imagine a version of Apple's App Store or Google's own Android market where developers could simply pay the data charges so that users could download and use their apps for

60. *See* Marguerite Reardon, *Is T-Mobile's Unlimited Video Streaming Actually Good for Consumers?*, CNET (Nov. 13, 2015) (quoting van Schewick), http://www.cnet.com/news/is-t-mobiles-unlimited-video-streaming-service-really-good-for-consumers/.

61. *AT&T Introduces Sponsored Data for Mobile Data Subscribers and Businesses*, AT&T (Jan. 6, 2014), http://www.att.com/gen/press-room?pid=25183&cdvn=news&newsarticleid=37366.

62. *See* Parmy Olson, *This App Is Cashing in on Giving the World Free Data*, FORBES (July 29, 2015), http://www.forbes.com/sites/parmyolson/2015/07/29/jana-mobile-data-facebook-internet-org/; David Talbot, *Facebook's Controversial Free-App Plan Gets Competition*, MIT TECH. REV. (May 6, 2015), http://www.technologyreview.com/news/537201/facebooks-controversial-free-app-plan-gets-competition/.

63. *See* Olson, *supra* note 62.

64. *See id.*

65. *Id.*

66. Janelle Nanos, *Mobile App Marketplace Jana Pushes Deeper into the Developing World*, BOSTON GLOBE (May 6, 2015), http://www.betaboston.com/news/2015/05/06/with-a-new-loyalty-program-mobile-app-marketplace-jana-pushes-deeper-into-the-developing-world/.

free. Google announced its plans for this sort of platform last year,[67] and Microsoft Research has independently developed bill-splitting technologies that would facilitate this sort of zero rating.[68] These platforms seem to follow in AT&T's footsteps by requiring developers to pay only for their own data, rather than following mCent's model in also subsidizing general-use Internet. This approach might make the platform more affordable for small developers, albeit at the expense of providing users with wider access.

The mCent approach to sponsored data is interesting not only because it subsidizes general-use Internet access, but also because it facilitates two types of disintermediation. First, if the service is open to any developer willing to pay its own data charges, then the zero-rating operator essentially plays no gatekeeping role. Although wealthy firms and monetizable apps are at an advantage, this approach removes the uncertainties and transaction costs associated with zero-rating models that rely on the carrier's discretion.[69] Second, this model is one that cuts across carriers. With conventional approaches to zero rating, Carrier X might offer one package (say, Facebook Zero) while Carrier Y offered another (say, zero-rated Twitter). For better or worse, the carriers would leverage these programs as part of their marketing campaign and low-income consumers would be splintered in their access to one service or the other. But, as mCent's founder Nathan Eagle has stated, the major strength of the program is that it cuts across Internet providers: mCent has already developed the

67. *See* Amir Efrati, *Google's Next Bid to Lower Mobile Data Costs: Zero Rating*, INFORMATION (Feb. 13, 2015), https://www.theinformation.com/articles/Google-s-Next-Bid-to-Lower-Mobile-Data-Costs-Zero-Rating.

68. *See* Himanshu Raj, Stefan Saroiu, Alec Wolman & Jitendra Padhye, *Splitting the Bill for Mobile Data with SIMlets*, Proceedings of the 14th Workshop on Mobile Computing Systems and Applications (Feb. 26, 2013), http://research.microsoft.com/apps/pubs/default.aspx?id=197588.

69. This leveling of the playing field matters because—per the conventional net-neutrality debate—scholars point to the transaction costs and uncertainties associated with carriers' gatekeeping as a major impairment to entry and innovation. *See, e.g.*, Lemley & Lessig, *supra* note 14, at 945 ("Innovators are likely to be cautious about how they spend their research efforts if they know that one company has the power to control whether that innovation will ever be deployed."). One might object of course that favoritism towards monetizable apps damages the environment for innovation and free speech by small players. *See, e.g.*, VAN SCHEWICK, *supra* note 5, at 8 (calling for a ban on all zero-rating schemes that require edge-provider payments). These concerns are mitigated somewhat by a program like mCent that also subsidizes data that can be used at any site. Recall also that websites have always had to pay overhead. Former start-ups like Facebook, which failed to make a profit for the first six years of business, and nonprofits like Wikipedia, which has declined to serve advertisements on its site, have successfully raised the funds to pay for servers, staff, and other overhead even during lean times. *See* David Sarno, *Facebook Reports Milestones in Cash Flow, Users*, L.A. TIMES (Sept. 16, 2009), http://articles.latimes.com/2009/sep/16/business/fi-facebook-staff16; Alana Semuels, *Wikipedia's Tin-Cup Approach Wears Thin*, L.A. TIMES (Mar. 10, 2008), http://articles.latimes.com/2008/mar/10/business/fi-wikipedia10. Accordingly, the question for sponsored data is whether it changes overhead costs so much as to make existing funding structures inadequate.

infrastructure to manage payments to over two hundred different mobile carriers.[70]

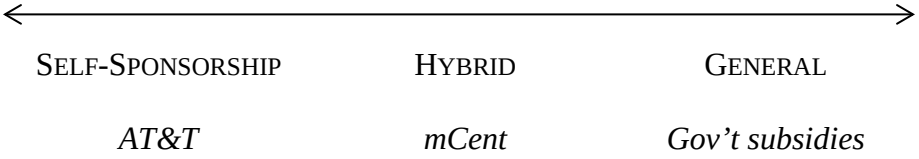
B. Frameworks for Comparison

To understand the structural differences between zero-rating programs, it is helpful to delineate the services into the single-website, bundled, and sponsored-data categories outlined above. But to evaluate the impact of these programs, one must also consider their functional differences in terms of their sponsorship models, site selection processes, and communications modalities.

1. Sponsorship Models

The platforms' sponsorship and payment systems vary in the degree of user choice they allow. Programs like AT&T's sponsored data or Google's proposed app store involve self-sponsorship, where the edge provider pays for its own data and users can visit only the sponsored site. The mCent platform engages in hybrid-sponsorship, where the edge provider pays for its own data (or advertising space) while also subsidizing data that users can apply towards the sites of their choice. One can also imagine general sponsorship, where a benefactor pays for Internet use without promoting its own services. The United States models this approach through its Lifeline program, where the government subsidizes telephone service for low-income people.[71] The following figure arranges these approaches on a spectrum of increasing user choice:

Figure 1: Sponsorship Models. *Arranged in order of increasing user choice.*



Of course, many plans involve no payments. Wikipedia Zero and Facebook Free Basics, for example, do not pay for traffic to their sites. Mobile carriers instead deploy these services as either pro bono efforts or marketing strategies. Plans like these are effectively a form of targeted sponsorship—akin to self-sponsorship—where the carrier absorbs the charges for sites it has partnered with.

70. *See* Talbot, *supra* note 62.

71. *See* Crawford, *supra* note 15, at 392 & nn.146–49.

2. Site Selection

The platforms also differ in their processes for selecting which sites to include, and these processes vary in their degree of openness to new entrants versus centralized control by the intermediary. Platforms sometimes handpick the sites according to their own interests and inclinations, like carriers do when choosing to zero-rate a single site like Facebook or Wikipedia, or like Facebook itself did in selecting which sites to include in the original incarnation of Internet.org. Other times, platforms adopt a set of standards, limiting their discretion to discriminate between sites. Self-sponsorship programs feature straightforward selection standards where they zero-rate any edge provider willing to pay; Free Basics has adopted a standard with both hard rules (compliance with technical specifications) and fuzzier guidelines (encouraging the exploration of the wider Internet). And programs like mCent give the user complete freedom to select any site using data credits earned through the platform. The following figure depicts these options:

Figure 2: Site-Selection Models. *Arranged in order of increasing openness to new sites and services.*

PLATFORM'S DISCRETION	SELECTION STANDARDS	USER'S CHOICE
Old Internet.org; most single-website plans	*Free Basics; sponsored data*	*mCent; most data credits*

3. Communications Modality

Finally, zero-rating platforms differ in the communications modalities they facilitate. Some platforms offer only "one-to-many" communications, where the site conveys information to the user but offers no tools for the user to speak on her own behalf. The music- and video-streaming programs available through T-Mobile fit this model, as do several discrete offerings on Free Basics, such as BBC News or local weather reports. When commentators warn that zero rating will lead consumers back to a broadcast model of telecommunications, they highlight the possibility that mobile

carriers will zero-rate only the one-to-many sites that that are most willing to pay to reach their audience.[72]

Other platforms offer "one-to-one" communications, where the user can speak directly to other users. Instant-messaging and email applications like those available through Free Basics are the clearest examples of such services, and instant-messaging services like WhatsApp have also enjoyed success with zero-rating.[73] Sites operating in this modality are more interactive than one-to-many sites, but they offer little more than the digital version of the telephone or the SMS text message.

Finally, some platforms offer "many-to-many" communications, where any user can post information for the rest of the world to see. This form of communication—where practically anyone can become her own broadcaster—is one of the Internet's unique strengths as a communications medium.[74] Facebook offers this potential: any user can generate a personal profile, a site for a cause or event, or a blog post to share with the rest of the world.[75] Zero-rated Facebook users are limited, however, in their inability to share pictures or video without paying for data. Wikipedia Zero likewise offers the potential for many-to-many communications by allowing any user to create or edit an encyclopedia entry. The following figure depicts the three modalities:

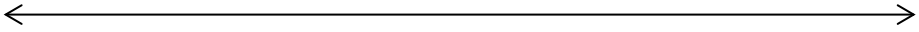
72. *See, e.g.*, Crawford, *supra* note 6 (arguing that with zero rating "vertical discrimination will become the norm: the Internet as cable TV").

73. *See* Carolina Rossini & Taylor Moore, EXPLORING ZERO-RATING CHALLENGES: VIEWS FROM FIVE COUNTRIES 40, 55 (July 2015), https://www.publicknowledge.org/documents/exploring-zero-rating-challenges-views-from-five-countries.

74. As the Supreme Court articulated nearly two decades ago, "Through the use of chat rooms, any person with a phone line can become a town crier with a voice that resonates farther than it could from any soapbox. Through the use of Web pages, mail exploders, and newsgroups, the same individual can become a pamphleteer." Reno v. Am. Civil Liberties Union, 521 U.S. 844, 870 (1997).

75. *See* Crawford, *supra* note 15, at 363 n.12 (identifying the rise of social networks as "[p]erhaps the most striking (and concrete) example" of the kinds of complex human connection facilitated by the Internet).

Figure 3: Communications Modalities. *Arranged in order of increasing potential for user participation.*



ONE-TO-MANY/BROADCAST	ONE-TO-ONE	MANY-TO-MANY
Music streaming, news, weather reports	*Emails and instant messages*	*Blogging and other user-generated content*

* * *

The three-part framework outlined above offers two analytic strengths. First, it provides a metric for assessing a program's relative generativity, as well as the relative weight of the net neutrality objection, as applied to that program. On each axis, the objection should diminish as the program moves down the spectrum: the risks are fewest when a site cannot pay for special privileges; when the platform does not play a major gatekeeping role; and when users are free to develop and share their own content. Second, considering these features in concert allows us to predict the overall impact of a zero-rating plan. A system that combined self-sponsorship with the carrier's discretion to charge different rates to different edge providers is one that could devolve into a payola scheme. Or, consider a program where the government subsidized several one-to-many news and educational sites. That program might provide a valuable *information* service—educating and informing the public much as state-supported broadcasters like the BBC have done for nearly a century. It might even be generative to the extent it developed users' capabilities to participate in the public sphere. But it would not provide a *communications* service with the interactive features of the open Internet.

Criticism of zero rating must take account of these different permutations in order to home in on the practice's actual challenges and opportunities. Left to their own devices, carriers might pursue zero-rating plans that maximized their private benefits at the expense of the public. But to allow zero rating does not mean allowing self-interested carriers to operate in a regulatory vacuum. Short of banning zero rating—as many critics advocate—the law could intervene to steer carriers towards arrangements that serve the public-interest goals of communications law and away from those that harm it. The following discussion will unpack the critics' main arguments against zero rating while showing, contrary to these objections, that zero rating has the potential to advance the generativity goals that animate network neutrality.

II. THE NET NEUTRALITY OBJECTION

Network neutrality is a policy designed to secure the benefits of a free and open Internet. In broad strokes, it prohibits Internet carriers from discriminating in their treatment of content from different edge providers. It can thereby preserve user choice regarding which sites and applications to use, encouraging competition between edge providers. It can likewise encourage innovation by allowing diverse and numerous developers to bring their services to the public without having to seek the permission of the carriers. And it can facilitate democratic participation in the public sphere by affording users with opportunities to speak or to otherwise empower themselves, regardless of whether the carrier agrees with the users' speech. While commentators might differ in the weight they assign to each of these goals, collectively these outcomes are crucial to the Internet's generativity.[76]

The objection to zero rating is that it gives carriers the power to dictate which sites and services will be available to the millions of people who rely on zero-rated platforms for Internet access.[77] Carriers could exercise this power to constrain user choice to a narrow menu, and in so doing they could undermine the openness that makes the Internet innovative and participatory. The force of this objection is blunted, however, insofar as it neglects the problem that makes zero rating so appealing: poorer communities throughout the developing world lack Internet access. While zero-rated access may be less generative than affordable access to the entire Internet, it generally provides greater user choice—and greater possibilities for innovation and democratic engagement—than no access at all.

A. Walled Gardens: User Choice Under Limited Competition

Critics warn that zero-rated services sacrifice the open Internet for a walled garden.[78] The Internet as we know it today is a diverse platform where the user can choose from millions of competing sites and services or even launch one of her own. Many commentators worry that zero rating will, by contrast, limit users to just the handful of sites and services the

76. *See supra* notes 13–16 and accompanying text.

77. *See* Barbara van Schewick & Morgan N. Weiland, *New Republican Bill Is Network Neutrality in Name Only*, 67 STAN. L. REV. ONLINE 85, 89–90 (2015). As Susan Crawford puts it, "Can you imagine trying to launch a competitor to Facebook in a country where most of your potential customers will have to pay data charges for your service—while the incumbent Facebook is exempt?" Crawford, *supra* note 6.

78. *See, e.g.*, Crawford, *supra* note 6 ("Saying that walled gardens are 'good enough' for poorer people is clearly destructive."); Malcolm, *supra* note 7 ("Although it may seem like a humane strategy to offer users from developing countries crumbs from the Internet's table in the form of free access to walled-garden services, such service may thrive at the cost of stifling the development of low-cost, neutral Internet access . . . .").

carrier has selected, with deleterious effects for consumer welfare, free expression, and innovation.

The walled-garden concern stems from an analysis of carriers' incentives. All else being equal, we might assume that carriers would prefer to zero-rate sites that are profitable—including sites they own and those willing to pay for preferential treatment.[79] Canadian cable and Internet provider Bell Mobility offers a ready example of this temptation. Bell provides general Internet access, but for a time it offered a special data plan to users who wanted to use Bell's own video-streaming service.[80] For five dollars per month, subscribers could watch up to ten hours of content without incurring data charges.[81] Regulators ultimately prohibited this arrangement because Bell discriminated heavily in favor of its own content; by some estimates "customers [were] charged up to 800% more for all other forms of video and other Internet-based data," making alternative services like Netflix or YouTube much more expensive per megabyte.[82]

Carriers do, of course, zero-rate sites that are in high demand among users but not directly profitable. The carrier might choose to zero-rate Facebook or Wikipedia, for example, as a marketing strategy in order to attract customers even without demanding any payments. But this possibility does little to address the concern that carriers will deploy zero rating in ways that distort the market towards established, popular sites.

Zero rating can also skew edge providers' own incentives: the carrier's walled garden is the edge provider's captive audience. On the open Internet, Facebook could hypothetically only demand so much from its users before they threatened to leave for a competing social network. Not so if Facebook is the only site the user and her friends can afford to visit. This worry might be ameliorated to the extent that the zero-rated site committed to provide the same quality of service to all users, ensuring that zero-rated users would benefit from the site's efforts to please customers with other options.[83] The suspicion nonetheless lingers that edge providers will find ways to segment their user base and serve poorer people an inferior experience with more advertisements, less privacy and security, or a less robust set of communications tools. The case in point being

79. *See generally* Crawford, *supra* note 15, at 372 ("Both telephony and cable companies have become anxious to ensure that they have the ability to 'monetize' their Internet access networks by discriminating in favor of the voice and other applications they provide."); Brett M. Frischmann & Barbara van Schewick, *Network Neutrality and the Economics of an Information Superhighway: A Reply to Professor Yoo*, 47 JURIMETRICS J. 383, 410–16 (2007) (detailing carriers' incentives to discriminate in favor of vertically integrated services).

80. Bell Mobility Inc., Canadian Radio-Television and Telecommunications Commission Decision 2015-26 at ¶ 46 (Jan. 29, 2015), http://www.crtc.gc.ca/eng/archive/2015/2015-26.pdf.

81. *Id.* at ¶ 6.

82. *Id.* at ¶ 37.

83. Recall that Wikipedia Zero has committed itself to offering the same site to all users. *See supra* note 30 and accompanying text.

Facebook's prior refusal to support encryption on Internet.org: as gatekeeper of an applications platform, Facebook prohibited other sites and services from implementing features that would better protect users' privacy.[84]

The walled-garden critique highlights serious dangers, but it paints with too broad a brush. Whether zero rating allows for user choice or advances consumer welfare depends on the baseline for comparison; a walled garden will usually prove better than no garden at all, and it is difficult to maintain that someone who otherwise lacks Internet access experiences less choice as a result of gaining the option to browse articles on Wikipedia or send messages on Facebook. For the walled-garden argument to have real bite, one has to argue that zero rating displaces opportunities for users to gain access to the wider Internet.[85]

Differences between zero-rating programs also bear on whether the walled-garden critique carries weight. On one end of the spectrum, walled-garden problems loom large if the carrier selects edge providers behind closed doors on the basis of undisclosed criteria. The specter of payola and sweetheart deals, moreover, suggests that the carrier may select sites that advance its private interests regardless of the effects on consumers or competition. Bell Mobility demonstrated these risks when it offered its own online video data at one price but charged eight times as much for competing services like Netflix and YouTube.[86] On the other hand, some zero-rating programs have no walls to speak of. Consider mCent: the user may apply data credits to use any site or app she chooses.

The problem of constrained user choice online is also not unique to the zero-rating context. Successful edge providers often rely on network effects to attract and retain users. Facebook is attractive because of the size and breadth of the existing user base; Google optimizes its algorithms by analyzing billions of web searches each day; and Wikipedia features a wide range of high-quality articles because of the combined talent and efforts of its volunteer editors.[87] These network effects create a positive feedback loop where the edge provider is attractive as the result of its users, which allows the site to attract new users, which makes the site even stronger. Some platforms are also sticky in that they make it difficult for users to transfer to another service. Facebook is once again a prime example.[88] One

84. *See supra* notes 48–50 and accompanying text.

85. Part II.D, *infra*, considers this argument.

86. *See supra* notes 80–82 and accompanying text.

87. *See* Spencer Weber Waller, *Antitrust and Social Networking*, 90 N.C. L. REV. 1771, 1787–88 (2012).

88. *See, e.g.*, James Grimmelmann, *Saving Facebook*, 94 IOWA L. REV. 1137, 1192–95 (2009) (detailing this concern while articulating the privacy risks of a more open system); Yana Welinder, *A Face Tells More than a Thousand Posts: Developing Face Recognition Privacy in*

can leave Facebook easily enough, but Facebook does not provide tools for the user to transfer her contact list, photos, and other content she has generated. Likewise, Facebook is not interoperable with other social networking sites or messaging services. So the ex-Facebook user cannot send messages to her Facebook friends from the Google+ social network.

Together, the network effects and these sticky features help to insulate incumbent edge providers against competitors even without the benefits of fast lanes, free lanes, or other formal departures from neutrality.[89] Given these constraints on competition, the "open" Internet may already resemble a walled garden more than we would care to admit. Reformers who sought to ban zero rating without addressing these other factors might therefore sacrifice the potential benefits of zero rating without meaningfully enhancing user choice.

B. Innovation

One key strength of net neutrality's nondiscrimination principle is that innovators can offer new services without seeking permission from an Internet carrier.[90] This approach disallows the sort of protectionism that might prevail if carriers could ban applications that went against their business interests—it stops phone operators from limiting voice-over-IP services like Skype that compete with phone service; likewise, it stops cable Internet carriers from discriminating against Netflix, YouTube, and other competitors in the market for video programming. It also means that entrepreneurs are all but guaranteed the chance to compete in the market without the risk of a premature veto by a mobile executive, preserving their incentives to develop new services.[91] Critics predict that zero rating would introduce gatekeepers with this sort of veto power and thereby stifle innovation.

Social Networks, 26 HARV. J.L. & TECH. 165, 219 (2012) ("The threat of losing the online identities that users have built up over the years further contributes to user lock-in.").

89. Speaking to lock-in's deleterious effects on competition, Lilian Edwards and Ian Brown conclude that lock-in effects explain why "users will put up with a bad deal rather than make the effort to replicate all their personal data and 'friends' connections elsewhere." *Data Control and Social Networking: Irreconcilable Ideas?*, *in* HARBORING DATA: INFORMATION SECURITY, LAW, AND THE CORPORATION 202, 226 (Andrea M. Matwyshyn ed., 2009).

90. *See* sources cited *supra* note 14.

91. *See* VAN SCHEWICK, *supra* note 14, at 348 ("[A]rchitectures that force innovators to contract or otherwise coordinate with a network provider before they can innovate . . . constrain independent innovators' ability and incentives to start a new project."); Lemley & Lessig, *supra* note 14, at 945 ("Innovators are likely to be cautious about how they spend their research efforts if they know that one company has the power to control whether that innovation will ever be deployed.").

1. Barriers to Entry

Zero rating poses the greatest threat to innovation where the platform owner handpicks which services to include. There are many reasons to question the effectiveness of this gatekeeping model for innovation online. Given the heterogeneity of users' preferences—and the reality that it is difficult to identify the most socially desirable services in advance—the most effective approach to innovation on the Internet is arguably the one that allows the greatest diversity of contributors.[92] The gatekeeper model stifles this sort of diversity: the transaction costs of negotiating with a gatekeeper and the risk that the carrier will arbitrarily reject the application for reasons other than its merit would discourage third parties from investing their time or money in developing new apps.[93] Even a sponsored-data system, where the entrepreneur merely had to pay for the data associated with her app, might deter innovators who were uncertain as to whether their offering would be profitable enough to cover the costs of entry.[94]

Higher barriers to entry are particularly troubling to those who wish to promote entry by local developers. Some scholars and neutrality advocates argue that the ideal telecommunications policy for the developing world would be one where locally developed alternatives to Facebook and Wikipedia could rise and flourish.[95] Zero rating seems to interfere with this goal insofar as established U.S. companies—like those that have so far had the greatest success in zero-rating their services—are systematically better equipped than local startups to meet carriers' demands.[96]

Despite these concerns, zero rating may nonetheless hold the potential to foster greater diversity in the marketplace for app innovation in the developing world. To be sure, developers who operate in a zero-rated market must negotiate whatever barriers the platform has put in place,

92. *See* VAN SCHEWICK, *supra* note 14, at 351.

93. *See supra* note 91.

94. This concern is not limited to the developing world. Commentators also worry that offerings like T-Mobile's Music Freedom and Verizon's Custom may create obstacles to market entry in the United States. *See* Wohlsen, *supra* note 55.

95. *See, e.g.*, Ramos, *supra* note 22 (exploring the complications that zero rating raises for local software developers in developing markets).

96. The same strengths, however, also better equip U.S. edge providers to enter the market and compete even in the absence of zero rating. As Anupam Chander chronicles in his recent book, *The Electronic Silk Road*, the success of U.S. edge providers is attributable to speech-protective laws, users' trust in the security of U.S.-based servers relative to servers housed elsewhere (at least prior to Edward Snowden's revelations regarding NSA surveillance), and the abundance of venture capital and software engineering talent in Silicon Valley. *See* ANUPAM CHANDER, THE ELECTRONIC SILK ROAD: HOW THE WEB BINDS THE WORLD TOGETHER IN COMMERCE 55–58, 194 (2013). Encouragement of local innovation would have to go beyond a ban on zero rating to consider strategies to replicate these factors for local developers. For example, a region that sought to jumpstart local development might affirmatively zero-rate local developers' apps to give them a fighting chance against U.S. edge providers.

incurring transaction costs as well as potential data sponsorship costs. But in the absence of zero rating, developers may have overlooked these markets entirely because the populations were offline. Zero-rating schemes might therefore contribute to the diversity of apps by bringing these markets into existence and encouraging developers to consider the needs of users who would otherwise be ignored.

Centralized zero-rated applications platforms—like mCent or Facebook Free Basics—may also offer unexpected advantages to new developers. Platforms like these reduce transaction costs relative to a system where each app developer has to negotiate with carriers directly. The transaction costs imposed by the gatekeepers are also offset by benefits that arise from the creation of standardized markets where users and developers can come together. On this point, the history of the iPhone's app store is instructive. Jonathan Zittrain and other commentators warned that widespread adoption of the iPhone would undermine the generativity of the open Internet because the iPhone was a closed system where Apple could unilaterally exclude third-party apps.[97] In practice, however, Apple allowed many third-party developers onto the iPhone and paved the way for a thriving market in smartphone apps.[98] By decreasing the transaction costs for developers to offer their products to users, moreover, the model has arguably lowered barriers to entry and made it easier than ever before for third-party software developers to reach an audience. The iPhone proved itself drastically more generative than the non-smartphones it replaced. Zero-rated access, despite its introduction of gatekeepers, has similar potential to spur a new ecosystem for apps that serve the needs of poor communities.

2. The Generative Social Layer

We do the Internet a disservice if we locate its innovative potential exclusively in the development of new apps. Susan Crawford challenged her fellow communications law scholars nearly a decade ago to move past

97. *See* ZITTRAIN, *supra* note 16, at 2 ("Whereas the world would innovate for the Apple II, only Apple would innovate for the iPhone.").

98. *See* James Grimmelmann & Paul Ohm, *Dr. Generative or: How I Learned to Stop Worrying and Love the iPhone*, 69 MD. L. REV. 910, 923 (2010) ("The iPhone is a hotbed of creative tinkering; people are doing amazing things with it."). Over one million third-party apps now compete for recognition in the bustling market for iPhone apps. *See* Sarah Perez, *iTunes App Store Now Has 1.2 Million Apps, Has Seen 75 Billion Downloads to Date*, TECHCRUNCH (June 2, 2014), http://techcrunch.com/2014/06/02/itunes-app-store-now-has-1-2-million-apps-has-seen-75-billion-downloads-to-date/. Because the iPhone is so adaptable that it can compete with devices as varied as MP3 players, portable gaming consoles, and video cameras, it also forces other device manufacturers to innovate or else fall into obsolescence. *See* Grimmelmann & Ohm, *supra*, at 924 ("Just as the Internet forced 'any organization offering entertainment or information' to rethink its business, the iPhone is doing the same for anyone making computer hardware or software." (footnote omitted)).

their preoccupation with apps to examine the kinds of complex communications the network is capable of facilitating.[99] Even if our metric is economic growth, she explains, the key innovations often occur at the social layer of the network:

> The human relations made possible by the Internet are capable of producing enormously diverse ideas (ideas in the form of new niches, new roles, and new understandings of information) and allowing them to be disseminated on a large scale, thus triggering crucial economic growth that will benefit society as a whole.[100]

In other words, the value of the network may emerge as a consequence of the network's capacity to match people with socially productive ideas and resources that they could not have found via other communication modalities.[101] This metric—which accounts for the economic benefits to the user—may be particularly appropriate in speaking about the good that competing approaches to Internet access might do for low-income people in the developing world.

Zero rating is poised to facilitate these sorts of complex interactions: popular zero-rated services like Facebook and Twitter provide extremely powerful communications tools.[102] There is little doubt, moreover, that users on zero-rated platforms will find new ways to interact and communicate beyond what the platform owners intend. Thrifty users in India already leverage "free" telephone service—by making a call but disconnecting before anyone answers—as a code to perform such varied communicative tasks as expressing affection to a loved one or requesting a bank balance.[103] With respect to zero rating itself, creative Wikipedia Zero users in Angola have already found ways to pass messages or even pirate

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99. *See* Crawford, *supra* note 15, at 380 ("[T]he application-layer perspective misses what is most important about online communications: complex human relationships.").

100. *Id.* at 364.

101. Note the resemblance between this way of thinking about the value of the network and Yochai Benkler's description for why peer-production is such a productive modality:

> It is not only, or even primarily, that more people can participate in production. The widely distributed model of information production will better identify who is the best person to produce a specific component of a project . . . . With enough uncertainty as to the value of various productive activities and enough variability in the quality of information inputs and human creative talent vis-à-vis any set of production opportunities, coordination and continuous communications among the pool of potential producers and consumers can generate better information about the most valuable productive actions and the best human agents available at a given time.

Yochai Benkler, *Coase's Penguin, or, Linux and* The Nature of the Firm, 112 YALE L.J. 369, 414 (2002) (emphasis omitted).

102. *Cf.* Crawford, *supra* note 15, at 363 n.12 (identifying the rise of social networks as "[p]erhaps the most striking (and concrete) example" of the kinds of complex human connection facilitated by the Internet).

103. A.A.K., *Marketing a Missed Call*, ECONOMIST (Aug. 17, 2013), http://www.economist.com/blogs/schumpeter/2013/08/mobile-advertising-india.

entire films using free Wikipedia bandwidth.[104] The following Part examines zero rating's pitfalls and promises at the social layer in greater depth by reference to its impact on democratic participation.

C. Democratic Participation

A third objection to zero rating stems from its effects on democratic participation, or users' opportunities for free expression and their ability to prepare for engagement in the public sphere through education and related avenues of self-empowerment. From this perspective, one risk of zero rating is that carriers might prioritize sponsored commercial messages over users' own speech. T-Mobile's Binge On service calls this concern to mind in featuring commercial content from networks like HBO while excluding platforms like YouTube that are more open to users' personal expression.[105] A related concern is that platforms like Facebook's Free Basics might dampen expression by abusing their central location in the network. Because programs like Free Basics direct all their users' traffic through Facebook's servers, Facebook has the opportunity to engage in comprehensive surveillance of its users' online activities.[106] This becomes a problem for democratic participation when we consider the capacity for online surveillance to normalize behavior and dull cultural and political engagement.[107]

The analysis of this problem nonetheless follows the same basic pattern as the more general discussion of walled gardens above.[108] The major zero-rating programs in the developing world tend to provide communicative services that enhance users' prospects to participate in the larger public sphere. Consider the much-criticized Facebook Zero program. Despite being limited to just one text-based site, it provides users with a suite of tools that allow them to send messages; create groups and events to explore cultural, political, or economic interests; and connect with other users across the globe.[109] Indeed, one of the attractions of a platform like

104. Jason Koebler, *Angola's Wikipedia Pirates Are Exposing the Problems with Digital Colonialism*, MOTHERBOARD (Mar. 23, 2016), http://motherboard.vice.com/read/wikipedia-zero-facebook-free-basics-angola-pirates-zero-rating.

105. *See supra* note 57 and accompanying text.

106. *See* Moglen & Choudhary, *supra* note 53.

107. *See* JULIE E. COHEN, CONFIGURING THE NETWORKED SELF: LAW, CODE, AND THE PLAY OF EVERYDAY PRACTICE 151 (2012) (tracing the relationship between privacy and artistic and intellectual engagement); Neil M. Richards, *Intellectual Privacy*, 87 TEX. L. REV. 387, 404 (2008) ("Thoroughgoing surveillance, whether by public or private actors, has a normalizing and stifling effect.").

108. *See supra* Part II.A.

109. These platforms can be especially potent in promoting free speech and democratic participation. Recall the instrumental role that platforms like Facebook and Twitter have played in exposing state brutality and facilitating political uprising under oppressive political regimes. *See, e.g.*, Rebecca J. Rosen, *So, Was Facebook Responsible for the Arab Spring After All?*,

Facebook is that it leaves space for users to share their own thoughts and to post information from other sites.[110]

Zero rating's appeal from the perspective of democratic participation, moreover, is not limited to its communications tools. Programs like Wikipedia Zero educate people about the world; women's rights apps like those featured on Facebook Free Basics help people overcome subordination on the basis of gender; and a zero-rated mobile banking app could help disadvantaged users achieve greater financial stability. Tools like these have the potential to empower more of the world's population to participate in political, economic, and cultural life, both online and off. The critics' argument cannot be that zero-rated services like these fail to enhance users' participatory opportunities; the real objection must be that they threaten to displace other, better approaches for bringing underserved communities into the public sphere.

Centralized surveillance presents its own thorns. To be sure, users in the developed world routinely trade their privacy in exchange for "free" services from firms like Facebook and Google.[111] And it is not immediately apparent why pervasive monitoring by a firm like Facebook is more dangerous than the same sort of surveillance conducted by local mobile carriers; a wealthy global firm based in the United States might be more willing than a local firm to resist illegitimate government requests for consumers' records.[112] But one need not be an apologist on private surveillance to defend zero rating: we should insist on regulation that protects user privacy on zero-rated platforms.[113]

D. The Future of the Internet

Zero rating's short-term benefits are difficult to dispute. The practice might nonetheless be problematic, some argue, because it threatens to erode

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ATLANTIC (Sept. 3, 2011), http://www.theatlantic.com/technology/archive/2011/09/so-was-facebook-responsible-for-the-arab-spring-after-all/244314/.

110. *Cf.* ZITTRAIN, *supra* note 16, at 95 (arguing that even a "closed" blog is generative in its content because users enjoy "the opportunity to configure a blog for nearly any purpose—group commentary, seeking help finding a lost camera, expressing and then sorting and highlighting various political opinions"); Salil K. Mehra, *Paradise Is a Walled Garden? Trust, Antitrust, and User Dynamism*, 18 GEO. MASON L. REV. 889 (2011) (arguing that the goal in regulating "walled gardens" is to protect user dynamism).

111. *See generally* Chris Jay Hoofnagle & Jan Whittington, *Free: Accounting for the Costs of the Internet's Most Popular Price*, 61 UCLA L. REV. 606 (2014) (describing and criticizing this fixation on free services).

112. Recall for example Google's resistance to the U.S. government's subpoena for search data to be used for law-enforcement purposes. *See* Gonzales v. Google, Inc., 234 F.R.D. 674 (N.D. Cal. 2006).

113. *See infra* Part IV.A.4.

the foundations of the open Internet.[114] Critics warn that zero rating might cannibalize the political will and resources that would go towards other options. Global pressure to close the digital divide is mounting: developing nations like Kenya have begun to devote resources towards bringing telecommunications infrastructure to underserved rural areas;[115] NGOs and universities are pushing for the United Nations to recognize access to information as both a human right and a cornerstone for sustainable development;[116] and private companies like Facebook and Google explore high-tech solutions like delivery of Wi-Fi by drone or high-altitude balloon.[117] For governments, NGOs, or private actors to devote resources to a problem, however, there must be a critical mass of constituents (or customers) to demand these efforts. The concern with zero rating is that people might be placated by walled-garden access. Already the critics worry that many first-time Internet users are confusing access to Internet.org or even Facebook alone as access to *the* Internet, which may lull them into thinking the fight is won.[118] Popular will might fizzle out if the trend continues.

Critics also flag the possibility that zero rating will become the new normal for Internet access. Much as domestic consumers overwhelmingly

114. *See, e.g.*, Crawford, *supra* note 6 ("[T]he cost of such services is the future of the Internet. Those users may never move to 'real' Internet access, satisfied with their 'free' access to a walled garden of chosen services."); MacDonald, *supra* note 7 ("[O]ffering services that don't count against data caps . . . tips the balance in favour of zero-rated services, effectively salting the earth of low-cost net neutral alternatives in the future."); Malcolm, *supra* note 7 (arguing that zero-rated services may come "at the cost of stifling the development of low-cost, neutral Internet access in those countries for decades to come").

115. *See* Rebecca Wanjiku, *Kenya Starts Universal Service Fund Implementation*, IT WORLD (Aug. 13, 2014), http://www.itworld.com/article/2693785/networking-hardware/kenya-starts-universal-service-fund-implementation.html.

116. *See* LYON DECLARATION ON ACCESS TO INFORMATION AND DEVELOPMENT, http://www.lyondeclaration.org/ (last visited Mar. 17, 2016).

117. *See* Yael Maguire, *Announcing the Connectivity Lab at Facebook*, FACEBOOK CODE (Mar. 27, 2014), https://code.facebook.com/posts/1461780544052806/announcing-the-connectivity-lab-at-facebook/ (describing Facebook's efforts to deploy Internet through solar-powered drones and infrared lasers); *Project Loon*, GOOGLE, http://www.google.com/loon/ (last visited Jan. 24, 2016) ("Project Loon is a network of balloons traveling on the edge of space, designed to connect people in rural and remote areas, help fill coverage gaps, and bring people back online after disasters."); *see also* David Reed, Jennifer Haroon & Patrick S. Ryan, *Technologies and Policies to Connect the Next Five Billion*, 29 BERKELEY TECH. L.J. 1205 (2014) (cataloging other technological proposals to extend Internet access).

118. *See, e.g.*, Open Letter to Mark Zuckerberg, *supra* note 8. On this point, zero rating's critics sometimes point to survey data showing that many people in Indonesia and Nigeria are confused. Leo Mirani, *Millions of Facebook Users Have No Idea They're Using the Internet*, QUARTZ (Feb. 9, 2015), http://qz.com/333313/milliions-of-facebook-users-have-no-idea-theyre-using-the-internet/. These users say they use Facebook, but that they do not use the Internet. *Id.* This data may be troubling as a window into Facebook's capture of users' attention, or into users' Internet literacy (anyone using Facebook is technically also using the Internet). But counter to the proposition for which it is often cited, this data also demonstrates that users correctly recognize that Internet access is *not* equivalent to mere Facebook use.

prefer free services online (despite paying with our attention when we view advertisements, or with our data when we consent to Orwellian "privacy policies"),[119] users who become acclimated to zero rating may come to expect it from all of their services. Consumer demand, in other words, might militate in favor of zero rating as a permanent solution rather than as an interim measure to address disparities in Internet access.

Even if we set our sights on affordable, neutral access as the end goal, however, zero rating could lend a crucial stepping stone. For starters, it could generate the grassroots political and economic demand to push for more comprehensive reforms. One of the greatest barriers to Internet adoption, besides price, is that people lack information about the Internet and how it might be relevant to their lives.[120] At the same time, poor communities in the developing world are often risk-averse when outsiders try to introduce new goods or services.[121] The opportunity costs of investing time and money into something untested can be prohibitive. Zero rating provides a free sample that can encourage people to actually try the services.[122] And in bringing a critical mass of local users onto the same platform—say, Facebook—zero rating could demonstrate in a concrete way how the service would be useful.

Sponsored data plans might be especially useful for development purposes. In regions where few people can afford to pay for their own data traffic, edge providers who sponsor their own data can provide a revenue stream for improving the communications infrastructure. The funding could lead to more reliable signals, better coverage for rural areas and other remote communities, faster speeds, or perhaps even cheaper data prices. In weak markets the carriers will likely be tempted to pocket the revenues

119. *See* Hoofnagle & Whittington, *supra* note 111.

120. *See* RAUL L. KATZ & TAYLOR A. BERRY, DRIVING DEMAND FOR BROADBAND NETWORKS AND SERVICES 29–31 (2014).

121. Ahmed Mushfiq Mobarak, Puneet Dwivedi, Robert Bailis, Lynn Hildemann & Grant Miller, *Low Demand for Nontraditional Cookstove Technologies*, 109 PROC. NAT'L ACAD. SCI. 10815 (2012) (documenting low-income people's reluctance to invest in new technologies even when they are marketed as more efficient or healthier than traditional alternatives).

122. Many scholars have rightly identified the seductive power of "free" goods and services as creating problems for consumer law. *See, e.g.*, Hoofnagle & Whittington, *supra* note 108; Kristina Shampanier, Nina Mazar & Dan Ariely, *Zero as a Special Price: The True Value of Free Products*, 26 MARKETING SCI. 742 (2007); John M. Newman, *Antitrust in Zero-Price Markets: Foundations*, 164 U. PA. L. REV. 149 (2015). The zero price may nonetheless be capable of doing some good in getting people to try services that they subsequently come to find beneficial. *See* Daniel A. Lyons, *Innovations in Mobile Broadband Pricing*, 92 DENV. U. L. REV. 453, 487 (2015) ("[S]uch programs help introduce people to the Internet . . . helping ensure that if they continue to decline full Internet access, it is not because of lack of familiarity with the product."). Insofar as the zero price induces people to use Internet services frequently, moreover, it may help facilitate the positive externalities or "spillovers" that scholars associate with many Internet platforms. *See generally* Frischmann & Lemley, *supra* note 14.

rather than invest them in infrastructure, but we ought not concede this loss without first considering corrective regulation.[123]

Carriers' own incentives also work in favor of the open Internet. Recall that edge providers like Facebook (with Free Basics) pay nothing for the data they consume. The carrier hopes to recoup some of the costs by using the zero-rated service as an enticement to attract new subscribers. But once a user joins the network, the carrier only makes money on the deal if it can convince people to pay for data to visit sites outside the zero-rated plan. Insofar as these carriers might be preying on the infirmities of low-income people to subscribe to services they do not need, they ought to be admonished.[124] But it is hard to make out a net neutrality problem: the carriers' goal is to convince users to subscribe to data plans for the full Internet. If the users can actually afford the plans and enjoy the use of the network, then the carrier's incentives and the public good will have aligned.

* * *

As the iPhone demonstrates, the future of the Internet is notoriously difficult to predict.[125] Drawing on familiar net neutrality arguments, zero rating's critics raise sobering objections to carriers' discrimination between sites and the potential consequences for user choice, innovation, and users' participation in the public sphere. But zero rating may prove generative for communities who otherwise lack Internet access, and it might even increase political demand for affordable data. Any attempt to predict zero rating's likely outcomes is constrained by the lack of information to confirm, rebut, or guide the analysis. In the face of these unknowns, regulators should neither ban the practice nor allow it to proceed unrestricted. As the next Part argues, the better course is to pursue regulatory designs that generate better information on zero rating and its place in telecommunications policy.

III. REGULATORY DESIGN FOR ZERO RATING

Zero rating poses novel questions for communications law, but it also presents challenges that are all too familiar for the modern administrative state. Lawmakers must decide how to treat an emerging business model with limited information about either the practice's costs and benefits or the likely effects of possible regulation. I argue that, in these circumstances, regulators should pursue experimental—and experimentalist—modes of

123. Part IV.B.3, *infra*, returns to these regulatory possibilities.

124. *See supra* note 122.

125. *See supra* notes 97–98 and accompanying text.

regulation so as to better identify the advantages and drawbacks of different approaches to zero rating.

A. Experimental Regulation

All regulation is to some degree a policy experiment: enactment of the regulation gives us the opportunity to observe the law's effect on the world.[126] But not all these experiments yield actionable results. Even if we can discern the law's effects, we often have little information on whether alternative laws would be better or worse.[127] And political will to revisit the law may be lacking even if it proves ineffective.[128] Experimental regulation, as a mode of lawmaking, seeks to conduct policy experiments that better isolate the effects of the regulation in question; provide some means of comparing the outcomes of different interventions; and include mechanisms that allow policymakers to act on the basis of their findings. The following discussion examines how regulators might utilize controlled experiments and "experimentalist" regulation to pursue these policy-learning goals in the context of zero rating.[129]

1. Controlled Policy Experiments

Randomized, controlled experiments are the gold standard for discerning the effects of competing policies.[130] Regulators might therefore wish to engage in controlled experiments to test different rules for zero rating. They might, for example, investigate whether requiring zero-rating platforms to supplement their walled gardens with a few megabytes of unrestricted data—like mCent already does—impacts users' browsing habits, the costs of entry for new services, or the development of users' educational, economic, or political capabilities. Along similar lines, states might wish to commission studies directly on the effect of contentious zero-

126. *See generally* Yair Listokin, *Learning Through Policy Variation*, 118 YALE L.J. 480, 491 (2008) ("A policy's performance in one period yields information about its probable performance in the next period.").

127. *See* Michael Abramowicz, Ian Ayres & Yair Listokin, *Randomizing Law*, 159 U. PA. L. REV. 929, 938–39 (2011).

128. *See id.* at 985–87; Listokin, *supra* note 126, at 539–46.

129. For an introduction to experimental regulation, see SOFIA RANCHORDÁS, CONSTITUTIONAL SUNSETS AND EXPERIMENTAL LEGISLATION: A COMPARATIVE PERSPECTIVE 212 (2014); Abramowicz et al., *supra* note 127; and Listokin, *supra* note 126. On experimentalist regulation—an administrative regime where local units make autonomous decisions subject to common coordination and monitoring—see, for example, Michael C. Dorf & Charles F. Sabel, *A Constitution of Democratic Experimentalism*, 98 COLUM. L. REV. 267 (1998); and Charles F. Sabel & William H. Simon, *Minimalism and Experimentalism in the Administrative State*, 100 GEO. L.J. 53 (2011). Lisa Ouellette has done an extraordinary job demonstrating the strengths and weaknesses of each approach in her recent article applying these frameworks to patent law. *See* Lisa Larrimore Ouellette, *Patent Experimentalism*, 101 VA. L. REV. 65 (2015).

130. Abramowicz et al., *supra* note 127, at 933.

rating platforms: they could, for example, test Facebook's claim that Free Basics users are more likely than their peers to subscribe to a data plan for full Internet access.[131]

There are limits, however, to what regulators can hope to achieve through controlled experiments in the telecommunications sector. One set of limits arises from the ethical and political concerns that come from treating people as guinea pigs.[132] These concerns loom especially large in studies of low-income people, who may lack the political clout to protect themselves against abusive studies. Indeed, if an experimental design arbitrarily denied benefits to some people, it might exacerbate the ill effects of the digital divide for that group.[133] Generally, however, a carefully designed and administered study will be able to overcome ethical concerns. While a study might seem to arbitrarily withhold benefits—giving some the benefit of free Internet while denying it to others—it does so for the future benefit of the participants as well as the wider community. When the study causes no lasting harm but has the potential to deliver future benefits to the study population itself, conducting the experiment is more ethical than prolonging the status quo.[134]

Another set of problems is administrative in nature: temporal and geographic constraints make it difficult to implement controlled experiments on Internet policy.[135] Temporally, an effective study in the telecommunications space must be concluded relatively quickly. As a study drags on, the data may become skewed by participant attrition, spillovers in access and information from others who are not participating in the same study, or larger trends in the deployment and use of the Internet.[136] Given how quickly the market for online sites and services changes, moreover, the

131. There is a surprising dearth of published social-science research on the effects of zero rating on users despite the fact that Facebook Zero launched over five years ago. One notable exception is Amba Kak's recently published master's dissertation, which studied the attitudes of low-income urban youth in Delhi with respect to zero rating and other low-cost data plans. *See generally* AMBA KAK, THE INTERNET UN-BUNDLED: LOCATING THE USER'S VOICE IN THE DEBATE ON ZERO RATING (2015), http://www.savetheinternet.in/files/amba-kak-thesis.pdf. Her study found that this audience saw zero-rated plans as inferior to full access and gravitated towards all-access data plans "even when the latter are more costly or for shorter duration." *Id.* at 49.

132. *See* Abramowicz et al., *supra* note 127, at 963–67; Ouellette, *supra* note 129, at 94.

133. *See* Sylvain, *supra* note 12, at 28 (describing the distributional welfare effects of unequal access to the network over time).

134. *Accord* Ouellette, *supra* note 129, at 94 ("While any randomized policy experiment should be sensitive to ethical concerns, especially when human lives are at stake, I think that it is, if anything, unethical *not* to pursue such experiments."). Likewise, in the sphere of domestic lawmaking, Judge Henry Friendly once upheld states' authority to conduct randomized policy experiments as consistent with our normative commitment to allowing the states to act as laboratories of democracy. *See* Aguayo v. Richardson, 473 F.2d 1090, 1109 (2d Cir. 1973).

135. *See generally* Abramowicz et al., *supra* note 127, at 957–60.

136. *See id.*

results of a controlled experiment today might tell us little about how to regulate the market tomorrow.

Geographically, it can be difficult for regulators operating *within* a given jurisdiction to segregate populations or its industries into comparable study groups.[137] In other words, it may not be feasible to instruct Facebook to treat different groups of subscribers differently within a given jurisdiction due to the lack of comparable populations or the likelihood of spillovers if participants live in overlapping communities. Where geographic factors make it difficult for regulators to subject different groups of users to different rules, they might instead consider subjecting different zero-rating platforms to different rules. This approach, however, raises predictable problems of its own because observed differences between the platforms may be due to users' selection of the program they view as most the attractive ex ante or due to differences inherent in the platforms. To make the point more concretely: Free Basics and Wikipedia Zero are different enough as programs that one would expect them to lead to different outcomes even if regulators subjected them to the *same* experimental treatment.

States might cooperate and attempt to conduct policy experiments *between* jurisdictions, but this strategy carries its own comparability problems: different social and economic conditions between nations can complicate regulators' attempts to isolate the effects of any given policy intervention. Indeed, as a political matter we might expect that most states will prefer regulatory strategies tailored to their perceived local needs. Experimentalism provides an avenue for states to pursue tailored regulation while still generating useful policy information.

2. Experimentalism

Experimentalism is an approach to policy learning where several jurisdictions simultaneously coordinate their activities yet retain autonomy to select their own policies.[138] In an experimentalist approach to zero rating, each jurisdiction would select the legal rules it thought best achieved the goals of telecommunications policy. To promote policy learning, these states would pre-commit themselves to monitoring the effects of local policy decisions, sharing the results, and defending their choice to select one policy over another.[139] The resulting scheme would allow each jurisdiction to pursue its choice of policies—and even to tailor the rules to local needs and opportunities—while still offering the informational

137. *See id.* at 960.

138. *See generally* Sabel & Simon, *supra* note 129.

139. *See id.* at 78 (designating a range of governance regimes as "experimentalist to the extent that they are designed to achieve local adaptation and aggregate learning by combining discretion with duties to report and explain, and by pooling information").

benefits of comparing the results of different approaches. This approach would also mitigate some of the geographic difficulties of experimentation by allowing treatments to take place at the national level.

The experimentalist mode is particularly promising for zero rating for two reasons. First, requiring states to articulate and justify their decisions would have the discursive benefit of creating a forum for regulators to develop the values and norms that ought to guide Internet policy.[140] Net neutrality debates have sidestepped difficult normative questions about priorities because advocates could historically claim that nondiscrimination rules advance user choice, innovation, and free speech simultaneously. Zero rating now poses harder questions. Regulators must ask, for example, whether a "neutral" applications platform that only the wealthy can use is as generative as a platform where developers can pay to sponsor low-income users' data consumption. This process could lead to a richer understanding of what the goals of net neutrality and indeed communications law more generally ought to be.

Second, zero rating poses a multitude of questions that require immediate attention even though the potential solutions are untested. As Michael Dorf and Charles Sabel have argued, experimentalism is efficient as a means of identifying dead ends among several competing regulatory alternatives—multiple jurisdictions can try different approaches and compare their successes and failures—and might provide just the winnowing tool that regulators need.[141]

B. Overcoming Regulatory Inertia

Policy experimentation is useful only so long as suboptimal policies can subsequently be reversed—the public would otherwise be forced to bear the burden of failed policies indefinitely.[142] Regulators who seek to operationalize a policy-learning approach must therefore build flexibility into the system so that they can update and, if necessary, reverse their policies as their information improves. Zero rating presents three potential reversibility problems.

The first is the general inertia that can beset any bureaucratic system. The telecommunications regulator—be it the legislature acting directly or an administrative agency—may neglect to revisit the issue except in case of emergency given the many other demands on its attention. One prescription for dealing with this sort of inertia is to enact sunset laws that terminate the existing rule and require the decisionmaker to revisit the issue

140. *See* Ouellette, *supra* note 129, at 73 (arguing that "experimentalism's most important strengths may be its ability to improve the *inputs* (what policies should be tested?) and the *metrics* (what does it means for a policy to 'work'?)").

141. *See* Dorf & Sabel, *supra* note 129, at 316.

142. *See* Listokin, *supra* note 126, at 546–53.

after an initial period of data collection.[143] Regulators might go even further by making their policy experiments self-executing.[144] The conventional sunset provision allows decisionmakers to proceed however they would like at the time the sunset triggers. The self-executing provision, by contrast, is one that would either "specify ex ante the policy effects of particular results, or, . . . could require independent decisionmakers in an administrative agency to make policy changes based on the experiment."[145] The idea is that such a provision would pre-commit lawmakers to actually act on the results of what they learn.

A second reversibility problem is visible through the lens of public-choice theory.[146] Zero-rating programs already have the support of powerful firms like Facebook who have concrete stakes in the success of the programs. When a program like Free Basics is successful, moreover, it may give hundreds of thousands of constituents—if not millions—a stake in the program's continued viability. The convergence of corporate and popular interests into one coalition might discourage regulators from acting in a way that interferes with previously authorized zero-rating programs even if the data suggested the need for new policies. These concerns should not be overstated: recall that TRAI banned Free Basics in India even after receiving over one million emails from subscribers who supported the program.[147] The need to hedge against the potential popularity of temporarily authorized zero-rating programs nonetheless gives regulators even greater reason to commit ex ante to sunset clauses and self-executing regulatory designs.

This concern with the entrenchment of popular sites also connects with the third reversibility problem, that of favored edge providers' first-mover advantages.[148] Sites like Facebook grow stronger and more appealing with each new user due to the operation of network effects. Some of these sites also employ lock-in tactics to prevent users from moving their contacts and other user-generated content to a competitor.[149] Sites like these may accordingly be able to translate their initial successes under a permissive zero-rating regime into permanent competitive advantages that will persist regardless of the future course of regulation. Regulators who wish to

143. *See* RANCHORDÁS, *supra* note 129, at 212 (arguing that "sunset clauses and experimental regulations allow the legislators and regulators to rethink the necessity of particular rules and their contents in light of their effects"); Listokin, *supra* note 126, at 536 (arguing that sunset clauses reduce the costs of policy reversal).

144. *See* Abramowicz et al., *supra* note 127, at 985–87.

145. *Id.* at 985.

146. For an introduction to the role of firms' and individuals' per capita stakes in determining their political involvement, see NEIL K. KOMESAR, IMPERFECT ALTERNATIVES: CHOOSING INSTITUTIONS IN LAW, ECONOMICS, AND PUBLIC POLICY 67–75 (1994).

147. *See supra* note 9 and accompanying text.

148. *See supra* notes 87–89 and accompanying text.

149. *See supra* note 88 and accompanying text.

counter this sort of market inertia should employ procompetitive regulations, including measures to thwart lock-in. The next Part turns to specific interventions that regulators should consider.

IV. REGULATORY INTERVENTIONS

A. Addressing Risks

As the foregoing discussion shows, zero rating presents many risks and complications. Besides zero rating's potential to distort competition and create substantive obstacles for users and innovators, these programs may entrench themselves in ways that render subsequent regulation ineffective. This Article offers a series of proposals—and sometimes counterproposals—through which regulators can confront these risks as they engage in policy experimentation.

1. Transparency

Regulators should issue transparency rules for zero rating. Transparency is already a fixture of domestic net neutrality rules.[150] In the face of blocking, throttling, and other discriminatory traffic-management practices, transparency plays an important information-forcing role.[151] When a consumer has trouble loading a site like Netflix, it is difficult for her to determine whether the malfunction is due to a problem with Netflix's servers, general problems with her Internet service provider, or the result of intentional throttling by the ISP. Regulators likewise have limited resources to ferret out each ISP's traffic management practices with respect to various edge providers. Transparency rules put the onus on the carrier to disclose these practices and may play a prophylactic role in steering carriers away from practices that would incur public backlash.

Transparency for zero rating would take a different form. Unlike throttling, there is no "secret" zero rating. Carriers will by default disclose which sites they are zero-rating: they advertise the free services to attract customers. There is, however, widespread secrecy in the arrangements between carriers and edge providers.[152] As a precondition of allowing a zero-rating program, regulators could require the programs to disclose

150. The D.C. Circuit Court retained the FCC's transparency rule even when it struck down other parts of the prior net-neutrality regime in *Verizon v. F.C.C.*, 740 F.3d 623, 659 (D.C. Cir. 2014), and the FCC's latest open Internet order imposes further disclosures on Internet carriers. *See* Protecting and Promoting the Open Internet, GN Docket No. 14-28, FCC 15-24 at ¶ 163–184 (Fed. Commc'ns Comm'n March 12, 2015).

151. *See* Frank Pasquale, *Beyond Innovation and Competition: The Need for Qualified Transparency in Internet Intermediaries*, 104 NW. U. L. REV. 105 (2010) (cataloguing the problems that arise when network management practices are insulated from scrutiny).

152. Wikipedia Zero and Facebook's Free Basics—in its most recent incarnation—are notable for their greater transparency. *See supra* Parts I.A.1 and I.A.2.

whether the edge provider is paying for data (and whether it offers the same data prices to competing edge providers and consumers themselves), their criteria for choosing which sites to zero-rate, and other key terms of the arrangement. These disclosures would have two benefits. First, disclosure of this information to regulators and the public would expose sweetheart deals and self-dealing to immediate scrutiny and discourage firms from pursuing them in the first place. Second, these disclosures would be a small step towards leveling the playing field between newcomers and incumbent edge providers. Basic information on the carriers' pricing and selection would make it more feasible for new edge providers to enter into their own zero-rating deals at competitive rates.

2. Promoting Competition

The key complaints against zero rating relate to its effects on competition: it could worsen the user experience by insulating edge providers from competition and it could damage innovation and entrepreneurship by erecting barriers to entry in zero-rated markets. Several tools are available to regulators who wish to address these concerns.

a. Fair Advertising

Regulators should prohibit unfair and deceptive advertising with respect to zero rating. Chile has begun to address this problem through a prohibition on zero-rated social networks.[153] Mobile carriers in Chile advertised free access to Facebook and other social networks, but they charged a premium for these plans: consumers paid extra for their supposedly "free" service while competing carriers who did not engage in the same marketing strategies lost customers.[154] In the United States, the Federal Trade Commission ("FTC") has expressly condemned marketing like this as deceptive.[155] Recent research in behavioral science confirms the wisdom of this approach; the offer of "free" service is seductive and interferes with consumers' ability to shop for the deal that best serves their needs.[156]

153. *See generally* Circular 40 of the Chilean Subsecretary of Telecommunications (Apr. 14, 2014), http://www.subtel.gob.cl/transparencia/Perfiles/Transparencia20285/Normativas/Oficios/14oc_0040.pdf.

154. *See id.*; Welinder & Schloeder, *supra* note 32.

155. Guide Concerning Use of the Word "Free" and Similar Representations, 36 Fed. Reg. 21,517 (Nov. 10, 1971).

156. To illustrate the point, consider a study where researchers offered participants the opportunity to buy either a $10 or $20 Amazon gift certificate. *See* Shampanier et al., *supra* note 122. When the $10 certificate was priced at $1 (netting a gain of $9) and the $20 certificate was priced at $8 (netting a gain of $12), over 60% of participants chose the more net-beneficial $20

Chile nonetheless went further than necessary to remedy the problem by preemptively banning all zero-rating of social networking sites.[157] This approach may be worthy as a policy experiment; it will be interesting to see whether non-social-network zero-rating programs (like Wikipedia Zero and mCent) are able to find more mobile partners without competition from Facebook, and to see how the exclusion shapes outcomes. But if people find value in the communicative tools of a site like Facebook—and there are many reasons to think they do—then regulators should also consider a more reserved approach. They could ban the misleading advertisements without specifically banning free social networks by following the FTC's approach and allowing carriers to advertise a service as "free" only if the service is offered at its customary price.[158]

b. Nondiscriminatory Pricing

Reasonable minds differ on whether edge providers should ever be permitted to pay to zero-rate their own services. It is more difficult to maintain, however, that mobile providers should be permitted to offer a better price to a preferred edge provider than to their other customers. For example, if the mobile carrier offers a better price to Facebook than to Google, Twitter, or a newcomer, then the carrier overtly distorts the market for Facebook's competitive benefit. Discriminatory pricing also allows carriers to shore up their walled gardens: carriers could offer reasonable rates to its paid zero-rating partners but charge artificially high prices to consumers who wanted to purchase general data plans.[159] As the prices for general Internet access rose, more consumers would opt for the zero-rated plans.

Regulators therefore ought to generally prohibit carriers from offering preferred edge providers cheaper data than they offer to competing edge providers or the general public.[160] Unpaid zero-rating presents a special

certificate. *Id.* at 752. When researchers dropped the price of the $10 certificate to $0 (for gains of $10) and the price of the $20 certificate to $7 (for gains of $13), 100% of the participants chose the free certificate. *Id.*

157. *See supra* note 153.

158. *See* Guide Concerning Use of the Word "Free" and Similar Representations, 36 Fed. Reg. 21,517.

159. Barbara van Schewick articulates this problem in her analysis of zero rating:

> ISPs would have an incentive to lower monthly bandwidth caps or increase the per-byte price for unrestricted Internet use in order to make it more attractive for application providers to pay for zero-rating, harming users and providers of applications that do not pay for exclusion from the cap.

VAN SCHEWICK, *supra* note 5, at 8.

160. Christopher Marsden offers a similar proposal in arguing that regulators ought to require carriers to offer "fair, reasonable, and non-discriminatory" conditions to all edge providers so as to avoid problematic exclusivity agreements. *See* Christopher T. Marsden, *Zero Rating and Mobile Net Neutrality*, *in* NET NEUTRALITY COMPENDIUM: HUMAN RIGHTS, FREE COMPETITION AND

case of the problem. If carriers offered some zero-rated content for free (say Facebook's Free Basics and Wikipedia Zero), but charged other edge providers for the privilege (say mCent), then the carriers would effectively charge mCent a higher price. Preferential treatment of this sort ought to be scrutinized carefully, but it might nonetheless be justified in limited circumstances where the subsidy goes towards services that advance substantive telecommunications policy goals like education.[161]

c. Payment Bans

Regulators could take the simpler and more aggressive route of prohibiting edge providers from paying to zero-rate any data. Under this rule, wealthier edge providers—who are usually powerful incumbents—could not bribe their way into privileged access to developing markets. Nonetheless, this rule is at best incomplete as a solution to favoritism for wealthy incumbents, and at worst counterproductive.

The rule is incomplete because it does not account for the nonpayment incentives that lead carriers to favor one edge provider over another. Carriers might for example favor their own services and therefore give free access only to a social network or news site that shared common ownership.[162] Meeting this problem would require additional rules against self-dealing. Carriers might also tend to favor powerful incumbents because of their popular appeal: marketing campaigns will have more traction if they advertise free Facebook and free Wikipedia than if they advertise an obscure startup. And in practice we see that carriers are in fact willing to offer Free Basics and Wikipedia Zero without demanding any payments.

The payment ban could also be counterproductive from the perspective of giving new entrants a chance in the market. While wealthy incumbents might benefit the most from a pay-to-play system, this system gives newcomers more of a chance to compete than one where the carrier selects sites based solely on whether they are already popular. When edge

THE FUTURE OF THE INTERNET 241, 254–55 (Luca Belli & Primavera De Filippi eds., 2016). Limited exceptions could be made for arrangements where the carrier could demonstrate that it was in fact cheaper to deliver one edge provider's data than another. For example, if Facebook installed special connections to the carrier's network—akin to a peering arrangement, *see* Timothy B. Lee, *Comcast's Deal with Netflix Makes Network Neutrality Obsolete*, WASH. POST: THE SWITCH (Feb. 23, 2014), https://www.washingtonpost.com/news/the-switch/wp/2014/02/23/comcasts-deal-with-netflix-makes-network-neutrality-obsolete/—and if these special servers reduced the carrier's cost of data delivery per megabyte, then the carrier might be permitted to pass these savings back to Facebook in the form of a cheaper rate. The key regulatory intervention under these circumstances would be to require that the carrier give equal access to edge providers who wished to install special servers like these.

161. *See infra* Part IV.B.1.

162. Recall Canadian cable and Internet provider Bell Mobility's more favorable treatment of its own streaming video service. *See supra* notes 79–80 and accompanying text.

providers pay, moreover, they infuse the system with funds that can go towards subsidizing other sites—as in the mCent model—or towards improving the carrier's communications infrastructure. These subsidies would therefore also pave the way for new entrants to compete. Rather than banning payment, regulators ought to consider whether there are ways to channel payment towards promoting greater access. We return to this possibility below with respect to the funding of network infrastructure.[163]

d. Mandatory Interoperability

Social networking sites are sticky. As noted above, Facebook makes it hard for non-Facebook users to enjoy the benefits of its large network by refusing to make its messaging software interoperable with other social networks, and it makes it hard for current users to leave because it lacks tools to export content that the user has generated.[164] Regulators might therefore be concerned that to allow zero-rated Facebook is to give Facebook a permanent competitive advantage.

Regulators could mitigate the stickiness of these sites by imposing interoperability requirements as a quid pro quo for authorization to zero-rate. For markets where the accumulation of network effects and the operation of lock-in mechanisms raise anticompetitive concerns—as they do for social networking sites—the regulators could require the platform to allow messaging to competing platforms. They could also require the platforms to provide tools to export one's contacts and other content, much like domestic phone companies allow you to transfer your phone number when you switch to a new service provider. Zero-rating platforms that refused to implement these features could either be banned or subject to stricter oversight than those that accommodated the interoperability norm.

3. Disintermediation of Gatekeepers

Another approach to confront the risks of zero rating is to constrain gatekeepers' discretion to pick winners and losers on their platform. mCent, and now Facebook's Free Basics, are already experimenting with disintermediated models of zero rating. The platforms select which sites to zero-rate by reference to either objective criteria (such as payment in the case of mCent)[165] or subjective standards (such as Facebook's allowance of low-bandwidth sites that encourage use of the wider Internet).[166]

Regulators could encourage zero-rating platforms to disintermediate by offering more favorable legal treatment to those who do it. While it is

163. *See infra* Part IV.B.3.
164. *See supra* notes 88–89 and accompanying text.
165. *See supra* notes 62-66 and accompanying text.
166. *See supra* note 44 and accompanying text.

difficult to develop ex ante rules specifying how disintermediation should look for different sorts of platforms, the adoption of transparent and impartial standards for choosing sites to zero-rate could presumptively insulate platforms from charges of anticompetitive behavior.

Disintermediated platforms can of course present lock-in risks. Critics worry that Free Basics will lead to a world where Facebook is the main portal through which people access mobile apps and other sites.[167] As discussed above, where lock-in is a risk, regulators could require the platform to provide transfer mechanisms, for instance, to allow the user to continue using her favorite apps on another platform even if she chooses to divorce herself from Facebook's ecosystem.

4. Privacy and Security

Finally, zero rating presents questions of privacy and security. While these concerns are general to all services on the Internet, zero rating's critics warn that the concentration of millions of users on just a few zero-rated platforms creates an especially attractive cache of data for those who might abuse it.[168] We could push back on this objection: millions of people in the developed world after all have entrusted their sensitive data to Facebook or Gmail, calling into question whether concentration by zero-rating is such a distinct problem.[169] And we might trust Facebook or Google to be more technically savvy in designing a secure system, or more legally resolute in resisting data requests from the government or the carrier, than a local startup with fewer financial or legal resources.[170]

The point remains that the users of zero-rating platforms may have few alternatives but to put their trust in whatever sites that platform makes available. The fiduciary duties that many cyberlaw scholars would impute to parties like Facebook and Google are therefore especially appropriate here given the users' heightened vulnerabilities.[171] We should accordingly censure Facebook for its failure to fulfill this duty when it refused to support secure browsing on Internet.org.[172] Regulators ought to formalize the duty by requiring zero-rated platforms to implement industry-standard protections for both security and privacy.

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167. *See, e.g.*, Moglen & Choudhary, *supra* note 53.

168. *See, e.g.*, Open Letter to Mark Zuckerberg, *supra* note 8 (arguing that Internet.org is "making it easier for governments and malicious actors to surveil user traffic" because it "provides only a handful of applications and services"); Malcolm, *supra* note 7 (arguing that on a limited platform "the task of filtering and censoring content suddenly becomes so much easier").

169. *See supra* note 111 and accompanying text.

170. *See supra* note 112 and accompanying text.

171. *See* Jack Balkin, *Information Fiduciaries in the Digital Age*, BALKINIZATION (Mar. 5, 2014), http://balkin.blogspot.com/2014/03/information-fiduciaries-in-digital-age.html.

172. *Accord* Open Letter to Mark Zuckerberg, *supra* note 8.

Privacy and security also raise a unique concern in the zero-rating context because the greatest threats to user data may sometimes come from the state itself. Intelligence agencies around the world would like nothing better than to tap into Facebook and Google to augment their surveillance capabilities.[173] Privacy and security are therefore areas where zero-rating reformers should push for either international governance or industry self-regulation—at least as a complement to local regulation—to account for local governments' potential conflicts of interest.

B. Pursuing Opportunities

Despite all its risks, regulators must not lose sight of zero rating's potential to advance generativity and related goals of telecommunications policy. Effective zero-rating policy should therefore go beyond the mitigation of risks to support affirmative measures to secure the benefits of the network to low-income users.

1. Developing Human Capabilities

The Internet has tremendous potential to promote human flourishing.[174] At present, when people cannot afford to access the Internet their disadvantages are compounded because they cannot connect with the same economic prospects, educational experiences, and opportunities to participate in cultural and political life as those who are wealthier.[175] This means that people who cannot afford Internet access are less able to develop the full range of capabilities necessary to achieve their potential to flourish as individuals and as communities.

Zero rating could play a salutary role by subsidizing tools that could enhance people's capabilities. Regulators should therefore adopt regulatory approaches that leave room for carriers to zero-rate services that advance basic human rights and freedoms. There is room for experimentation in defining what this approach entails and developing proper guidelines for the selection of sites, but regulators could begin by seeking ways to provide access to education (through sites like Wikipedia and distance-learning services), economic opportunity (through job-search sites and mobile

173. *See* CHANDER, *supra* note 96, at 197 (describing the risk that repressive regimes will attempt to co-opt corporations within their borders into becoming the surveillance arm of the state); Jack M. Balkin, *Old-School/New-School Speech Regulation*, 127 HARV. L. REV. 2296 (2014) (explaining how the modern surveillance state co-opts online speech platforms).

174. *See, e.g.*, CHANDER, *supra* note 96, at 196 ("The Internet offers a global information platform that should increase what Martha Nussbaum and Amartya Sen call human capabilities, perhaps especially so for people in repressive societies.").

175. *See* Sylvain, *supra* note 12, at 27–30 (detailing this problem among domestic users with disparate access to the network).

banking), and health (through sites like Free Basics' Ebola advisories and resources for expectant mothers, or through telemedicine).

In the absence of satisfactory provisioning of these services by carriers, the state should also consider a more active role. Where the revenues are available, governments might simply subsidize data for poorer citizens.[176] As a less costly alternative, states might choose to sponsor specific services—or mandate that carriers offer them for free—to promote equal access to certain basic opportunities. In doing so these governments would follow the path blazed by resources BBC and by U.S. public broadcasting in carving out a free space within the communications medium to serve the public interest.[177]

2. Demonstrating the Possibilities

Zero rating could also act as the bridge to introduce people to the Internet who might otherwise lack the resources or interest to explore it. As discussed above, one major barrier to Internet adoption besides price is lack of awareness as to its benefits.[178] Using zero rating as a free introduction provides the means not only to dismantle this barrier, but also to plant the seeds of grassroots demand for affordable Internet access.

One crucial caveat here is that to increase demand for the larger Internet, zero-rating programs must be structured to show users that there is a wealth of content outside the zero-rated walled garden. Most zero-rating programs do this already to some degree. mCent goes furthest in providing free data that can be used to browse any site. Wikipedia Zero does this only insofar as Wikipedia pages heavily link to outside websites (which the user cannot visit without paying). Social networks like Facebook also feature links to outside articles. For their part, the carriers are motivated to select

176. Recall the U.S. government's efforts to fund telephone service through the Lifeline program. *See supra* note 71 and accompanying text.

177. Neutrality advocates might bristle at this proposal insofar as it simply invites the state—rather than the carrier—to exercise the gatekeeping role. Cyber libertarians have long attempted to break the Internet free from state influence, see John Perry Barlow, *A Declaration of the Independence of Cyberspace*, ELECTRONIC FRONTIER FOUND. (Feb. 8, 1996), https://www.eff.org/cyberspace-independence, and contemporary scholars of all stripes remain skeptical of the state's competence any time it chooses to back specific firms. *Cf.* Amy Kapczynski, *Intellectual Property's Leviathan*, 77 LAW & CONTEMP. PROBS. 131 (2014) (exploring this sort of skepticism of the state on both sides of contemporary intellectual-property debates). But allowing states to favor education, jobs, and health sites is an extension of the state's traditional role in governing school curriculums, administering social welfare programs, and mounting public health campaigns. The state may not execute these roles perfectly, but these are by and large public goods that private markets tend to undersupply if left to their own devices. If the objection were that states can never be trusted to make Internet policy, moreover, then efforts to regulate or ban zero rating would face an even more fundamental problem insofar as it appeals to these supposedly incompetent or captured actors.

178. *See supra* notes 120–122 and accompanying text.

programs that make the Internet attractive so that they can convert zero-rating customers into paying data-plan subscribers.

Regulators who seek to promote this feature of zero rating could set minimum thresholds of outside exposure as a prerequisite to the approval of zero-rating plans. Setting the right threshold is an empirical question: it may be that outside links are sufficient to entice users to demand greater access, or it may be that they need to actually see the other sites through a subsidy like the one provided by mCent. If that were the case, regulators might require all zero-rated platforms to provide a modicum of unrestricted access. States should also experiment with non-zero-rating approaches to building Internet awareness: they might for example fund Internet access for schools and libraries. Even if these modest measures were insufficient to secure the benefits of the Internet to marginalized users, they could lay the groundwork for users to demand more comprehensive solutions.

3. Funding Network Infrastructure

One obstacle to the widespread deployment of affordable Internet access is the expense of building the network in the first place.[179] To offer high-speed Internet to a large number of people, mobile providers typically invest in expensive capital projects like cellphone towers. In turn, the mobile providers price their data plans at a level sufficient to allow them to recoup these costs while still making a profit. The user is the one who foots the bill for the network's capacity.

Other models are available. States could of course subsidize these projects and require the carrier to pass the savings to the consumer. The appeal of zero rating is that it offers a means by which comparable subsidies could come instead from the private sector. When a platform like mCent pays to sponsor data, it steps in to pay the expense of building and maintaining the network in place of the consumer. The benefits of sponsored data could therefore go beyond short-term access to include the potential long-term benefits that come from financing network infrastructure.

Mobile carriers might simply pocket the proceeds of zero rating rather than invest them in their infrastructure. In a reasonably competitive market this may not be a problem; carriers with competition will face market pressure to improve their services with the resources at their disposal. Where regulators were concerned that zero rating provided large revenues but the competitive pressures for reinvestment were lacking, they could

179. *Cf.* Gary S. Becker, Dennis W. Carlton & Hal S. Sider, *Net Neutrality and Consumer Welfare*, 6 J. COMPETITION L. & ECON. 497, 513 (2010) (connecting carriers' revenue opportunities to their incentives to invest in infrastructure); Frischmann & van Schewick, *supra* note 79, at 423–24 (recognizing that for users to enjoy any of the benefits of the network, Internet carriers must have sufficient incentives to develop and maintain the network).

consider setting minimum performance standards to ensure that carriers kept pace with industry-standard network speeds and prices. Alternatively, the state could tax sponsored-data revenues and apply the proceeds directly towards building infrastructure or subsidizing data plans for low-income citizens.

V. CONCLUSION

Net neutrality, as a debate, has been incredibly generative in identifying the user choice, innovation, and democratic participation goals that should guide communications law and policy. The zero-rating debate poses new challenges. We must now identify the policies that best secure these capabilities to the billions of people not yet online.

While many scholars and advocates argue zero rating should be uniformly rejected as a violation of net neutrality, this Article has advanced an alternative position. Deployed responsibly, zero rating could provide access to platforms that embody the generative and participatory features of the open web. It might even cultivate the economic and political demand necessary to make affordable Internet access a reality for the developing world. Much work remains to be done, however, to investigate whether zero rating can actually realize this potential. Diligent regulators must likewise compare the prospects for zero rating against those of alternative strategies for closing the digital divide, like direct state subsidies in data and infrastructure, or investment in new technologies for data transmission. This Article provides a framework through which scholars, advocates, and policymakers can begin to identify zero rating's proper role in communications law and policy.