

THE MIXED BLESSING IN SUBSIDIZED INTERNET ACCESS

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This article offers an examination of current disputes about whether national regulatory authorities (NRAs) should permit broadband carriers and content providers, such as Facebook, to subsidize broadband access to a limited, “walled garden” of content. The subsidy makes it possible for sponsored data access without debiting a monthly data allowance. Wireless subscribers, with service caps typically set between 1–5 Gigabytes per month, can quickly exhaust their monthly allotment when streaming video content. Even so-called unlimited data plans in developed countries have monthly data thresholds that, if reached, trigger slower content delivery speeds and possibly degraded screen resolution of delivered video content.¹

Even though carriers and content providers serve profit-maximizing goals in zero-rating arrangements, the practice can have positive spillover effects, including more access by impoverished users, stimulated interest in diversifying uses of wireless handsets, and possible migration to broadband access options that equally support content consumption and creation. While carriers and content providers can migrate tentative, subsidized users into paying ones, zero-rating also provides first-time access opportunities, particularly for individuals least able to afford even extremely low-cost access options available in many lesser-developed countries. Additionally, zero-rating can stimulate interest by consumers financially able to afford unsubsidized access, but uninterested in or uninformed about the benefits.

There are ways for carriers and NRAs to limit subsidies in ways that accrue social benefits without creating an unlimited “free rider” opportunity for all wireless subscribers, regardless of ability to pay

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1. “On all T-Mobile plans, during congestion the top 3% of data users (>28GB/mo.) may notice reduced speeds until next bill cycle. Video typically streams on smartphone/tablet at DVD quality (480p). Tethering at Max 3G speeds.” *Introducing T-Mobile ONE*, T-MOBILE, <https://explore.t-mobile.com/t-mobile-one> [https://perma.cc/ML6Y-5J2D] (last visited Mar. 2, 2017).

for service. This article suggests that carriers should offer zero-rated opportunities on a conditional and promotional basis thereby making it more difficult for existing subscribers simply to use zero-rated access to avoid paying surcharges for exceeding data caps. Although NRAs should not micro-manage carriers' service pricing, establishing qualification rules for access to zero-rated services fits with other universal service initiatives that rely on well calibrated and targeted subsidies to simulate broadband service demand and supply.

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INTRODUCTION

Throughout the world, many Internet Service Providers (ISPs) have introduced broadband Internet access services that offer subscribers reduced out of pocket costs, or eliminate the costs entirely.² These subsidies, not mandated by governments, recently have triggered regulatory concerns about harmful impacts on the marketplace for Internet-delivered content.

Internet broadband subsidies have triggered disputes whether they benignly enhance the value proposition in broadband access, or result in harmful marketplace distortions where gatekeepers can

2. See Olivier Sylvain, *Network Equality*, 67 HASTINGS L.J. 443, 451–52 (2016).

favor specific sources of content:

On the one hand, evidence in the record suggests that these business models may in some instances provide benefits to consumers, with particular reference to their use in the provision of mobile services. Service providers contend that these business models increase choice and lower costs for consumers . . . [and] support continued investment in broadband infrastructure. . . . On the other hand, some commenters strongly oppose sponsored data plans, arguing that [it] “distorts competition, favors companies with the deepest pockets, and prevents consumers from exercising control over what they are able to access on the Internet” The record also reflects concerns that such arrangements may hamper innovation and monetize artificial scarcity.³

Broadband subsidies enhance the value proposition to prospective subscribers who lack discretionary funds, computer literacy, or sufficient interest. They also provide an attractive incentive for existing subscriber migration to a more expensive service tier offering faster data transmission speeds, higher allotment of content downloading and uploading, or a combination of the two. ISPs offer internal subsidies,⁴ but they also partner with advertisers, content creators, and content distributors.⁵

Two labels apply to most of the broadband access subsidy arrangements.⁶ First, the label “sponsored data” identifies the

3. *Protecting and Promoting the Open Internet*, GN Dkt No. 14-28, Report & Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd. 5601, 5666–67 (2015) [hereinafter *2015 Open Internet Order*]; see also *United States Telecom Ass’n. v. FCC*, 825 F.3d 674 (D.C. Cir. 2016).

4. For example, AT&T offers zero-rating of data traffic to broadband customers who also subscribe to the company’s DirecTV satellite television service. This arrangement eliminates surcharges imposed on customers who exceed their monthly data rate allowance. See *Internet Service*, AT&T, <https://www.att.com/internet/index.html> [https://perma.cc/VH9Z-6P8U] (last visited Feb. 27, 2017).

5. Facebook partners with ISPs in over 50 developing nations to provide wireless broadband access limited by a number of factors including which Internet sites are accessible. See *Free Basics Platform*, FACEBOOK, <https://info.internet.org/en/story/platform/> [https://perma.cc/6ABP-WP3B] (last visited Feb. 27, 2017).

6. Zero-rating refers to “commercial arrangements and unilateral decisions by network operators pursuant to which [specific] Internet Protocol (IP)-delivered traffic is exempted from usage-based pricing.” ERIK STALLMAN & R. STANLEY ADAMS, *ZERO RATING: A FRAMEWORK FOR ASSESSING BENEFITS AND HARMS 2* (2016), https://cdt.org/files/2016/01/CDT-Zero-Rating_Benefits-Harms5_1.pdf; see also ROSLYN LAYTON & SILVIA MONICA ELALUF-CALDERWOOD, *ZERO RATING: DO HARD RULES PROTECT OR HARM CONSUMERS AND COMPETITION? EVIDENCE FROM CHILE, NETHERLANDS AND SLOVENIA* (2015), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2587542 [https://perma.cc/598R-BGH2]; Carolina Rossini & Taylor Moore, *Exploring Zero-Rating Challenges: Views From Five Countries* (July 2015); *The Impacts of Emerging Mobile Data Services in Developing Countries*, ALLIANCE FOR AFFORDABLE INTERNET, <http://a4ai.org/the->

subsidy source as a third party, not the carrier or consumer who is willing to pay for the exemption of specific types of content from debiting a monthly data plan. Such underwriting parallels media advertising where consumers have “free rider” opportunities to receive content without buying the promoted goods and services.⁷ Advocates for sponsored data arrangements frame the subsidies as offering consumer welfare enhancements without any significant distortion of marketplace competition.⁸ The second term “zero-rating” highlights cost-saving opportunities available to consumers who can conserve their monthly data allotment by not having it debited when accessing content available from specific providers. Other subsidy arrangements exist, but do not snugly fit within either the sponsored data or zero-rating categories. These subsidies offer promotions designed primarily to induce existing subscribers to use more expensive tiers of service,⁹ to download and use specific software and applications,¹⁰ or to buy specific equipment, such as a game console.¹¹

Subsidy opponents have predicted significant distortions to the marketplace of ideas, harm to the level of innovation, and the potential for less competition.¹² They worry that subsidies will bolster the market dominance of incumbent carriers and a small number of content providers by creating irresistible incentives for consumers to favor subsidized content and to rely on deep-pocketed carriers able to offer the most generous discounts, or bundles of services that combine content and carriage.¹³

impacts-of-emerging-mobile-data-services-in-developing-countries/
[https://perma.cc/5NAM-D3BN] (last visited Apr. 5, 2017). The term-sponsored data represents the same arrangement with emphasis on the subsidy mechanism used.

7. See Chris Jay Hoofnagle & Jan Whittington, *Free: Accounting for the Costs of the Internet's Most Popular Price*, 61 UCLA L. REV. 606, 624 (2014) (“For example, consumers may be able to play free trials of games by logging in as guests. Banner ads on websites arguably convey no costs if they are easy enough to ignore. In these cases, the free offer *ex ante* may remain free *ex post*. In these situations, loss leaders can be lost, and free riders can ride free.”).

8. See, e.g., Fanny Gunnarsdóttir, *Data Wants to be Free: So Sponsor It*, 3 ERICSON BUS. REV., no. 3, 2015, at 2.

9. See FACEBOOK, *supra* note 5.

10. See, e.g., *Sponsored Data*, AT&T, <https://www.att.com/att/sponsoreddata/en/index.html#tab1> [https://perma.cc/UHD4-VHJB] (last visited Apr. 5, 2017).

11. Kyle Orland, *Comcast: Xbox 360 On Demand Streams Won't Count Against Data Caps*, ARS TECHNICA (Mar. 26, 2012, 12:54 PM), <http://arstechnica.com/gaming/2012/03/comcast-xbox-360-on-demand-streams-wont-count-against-data-caps/> [https://perma.cc/ZP9E-9W7U].

12. Davey Alba, *Big AT&T Deal Proves It's Time to Stop 'Zero-Rating'*, WIRED (Nov. 3, 2016, 7:00 AM), <https://www.wired.com/2016/11/att-time-warner-deal-shows-time-stop-zero-rating/> [https://perma.cc/C3D6-6FT4]; *Zero-Rating Plans Are a Serious Threat to the Open Internet*, NEW AMERICA (Mar. 28, 2016), <https://www.newamerica.org/oti/blog/zero-rating-plans-are-a-serious-threat-to-the-open-internet/> [https://perma.cc/42FC-BTUD].

13. See Emily Hong, *A Zero Sum Game? What You Should Know About Zero-Rating*, NEW AMERICA (Feb. 4, 2016), <https://www.newamerica.org/weekly/109/a-zero-sum->

Empirical evidence provides some support for this argument. The most popular subsidy arrangements come from major incumbent content providers, such as Facebook, offering a limited “walled garden” of content.¹⁴ To the extent that new consumers embrace broadband services and remain willing to make do with a curated sliver of content, then incumbents can extend their market penetration while handicapping the prospects for market entrants lacking funds to pay for free or low cost access to their content. On the other hand, broadband subsidies can enhance societal welfare by stimulating demand for broadband service by individuals uninterested in such access, or lacking sufficient discretionary income.¹⁵ Many sponsored data plans offer access to information services such as Wikipedia¹⁶ and “e-government” services,¹⁷ thereby promoting widespread use and creating incentives for people to acquire computers and master their use.¹⁸

I. ZERO-RATING IN THE CONTEXT OF THE BROADER DEBATE ABOUT GOVERNMENT INTERVENTION TO PROMOTE AN OPEN INTERNET

Broadband access subsidies have become part of the larger debate about Internet neutrality and openness.¹⁹ Zero-rating

game-what-you-should-know-about-zero-rating/ [https://perma.cc/UW76-G6PK]; The Editorial Board, *Why Free Can Be a Problem on the Internet*, N.Y. TIMES (Nov. 14, 2015), http://www.nytimes.com/2015/11/15/opinion/sunday/why-free-can-be-a-problem-on-the-internet.html?_r=0 [https://perma.cc/4K5H-DTYQ].

14. David Talbot, *Facebook and Google Create Walled Gardens for Web Newcomers Overseas*, MIT TECH. REVIEW (Mar. 21, 2013), <http://www.technologyreview.com/news/512316/facebook-and-google-create-walled-gardens-for-web-newcomers-overseas> [https://perma.cc/6CEE-WGLC] (“The idea is that once these new users get some experience in a walled garden of Facebook or Google they will want more Internet access and pay for it, making the carriers’ initial investment worthwhile.”).

15. See J. Scott Marcus, *New Network Neutrality Rules in Europe: Comparisons to Those in the U.S.*, 14 COLO. TECH. L.J. 259, 279 (2016).

16. *Wikipedia Zero*, WIKIMEDIA FOUNDATION, https://wikimediafoundation.org/wiki/Wikipedia_Zero [https://perma.cc/VYQ5-Y8PP] (last visited Feb. 27, 2017) (“We estimate that more than 309 million people can now access Wikipedia free of data charges. Our goal is to work with every mobile operator on the planet.”).

17. For example, the Facebook Free Basics platform provides zero-rated access in many developing countries to web sites offering information on health, business development, and childcare.

18. See, DARRELL M. WEST, CTR. FOR TECH. INNOVATION AT BROOKINGS, *DIGITAL DIVIDE: IMPROVING INTERNET ACCESS IN THE DEVELOPING WORLD THROUGH AFFORDABLE SERVICES AND DIVERSE CONTENT* (2015), <https://www.brookings.edu/research/digital-divide-improving-internet-access-in-the-developing-world-through-affordable-services-and-diverse-content/> [https://perma.cc/KBF6-GHTX].

19. See Justin S. Brown & Andrew W. Bagley, *Neutrality 2.0: The Broadband Transition to Transparency*, 25 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 639 (2015); Rob Frieden, *What’s New in the Network Neutrality Debate*, 2015 MICH. ST. L. REV. 739 (2015); Barbara van Schewick, *Network Neutrality and Quality of Service: What a Nondiscrimination Rule Should Look Like*, 67 STAN. L. REV. 1 (2015); Marvin Ammori,

opponents consider subsidies an attractive Trojan horse that inspires interest in accessing the Internet, but only in ways that perpetuate the status quo and favor powerful incumbents.²⁰ The emphasis on market domination and societal control ignores how zero-rating can promote universal broadband access. Broadband subsidy advocates believe zero-rating absolutely generates consumer welfare enhancements, despite the fact that underwriters fully expect to accrue a return on their investment.²¹

Both sides might offer valid points. Ventures such as Facebook are for-profit and have plenty to gain by mining the data of subscribers and by extending their penetration of largely untapped markets in the longer term. On the other hand, subsidies providing even limited and curated Internet access deliver opportunities for unconnected people that might not otherwise exist.

This article examines the opportunities and threats presented by subsidized broadband Internet access. It also considers the different reasons nations have outlawed such options even though it appears that near term welfare enhancements can accrue, particularly in lesser-developed nations. Although ISPs and content providers have self-serving goals in offering subsidies, the practice can have positive spillover effects including more access by impoverished users and more interest in using broadband access to create and consume content. Sponsored data plans provide first-time access opportunities, particularly for individuals least able to afford even extremely low cost wireless handset and broadband access options available in many lesser-developed countries. Additionally, zero-rating can stimulate interest by consumers who are financially able to afford unsubsidized access, but are uninterested in, or uninformed about the benefits.

The Case for Net Neutrality: What's Wrong with Obama's Internet Policy, 93 FOREIGN AFFAIRS, July-Aug. 2014, at 62; Tejas N. Narechania & Tim Wu, *Sender Side Transmission Rules for the Internet*, 66 FED. COMM. L.J. 467 (2014); Adam Candeub & Daniel McCartney, *Law and the Open Internet*, 64 FED. COMM. L.J. 493 (2012); Philip J. Weiser, *The Next Frontier for Network Neutrality*, 60 ADMIN. L. REV. 273, 280 (2008); Christopher S. Yoo, *Network Neutrality and the Economics of Congestion*, 94 GEO. L.J. 1847, 1901 (2006); Christopher S. Yoo, *Beyond Network Neutrality*, 19 HARV. J.L. & TECH. 1 (2005); Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. TELECOM. & HIGH TECH. L. 141 (2003).

20. See Prabir Purkayastha, *The Trojan Horse of Free Basics*, NEWSCLICK INDIA (Jan. 7, 2016), <http://newsclick.in/international/trojan-horse-free-basics> [https://perma.cc/SQ93-UVW9] ("Who has decided what constitutes what is a free and a basic Internet? Mr. Zuckerberg? . . . Instead of accepting the Trojan horse of Free Basics, we need to create the right set of policies so that data services are cheap and easily accessible.")

21. See Oscar Saenz De Miera Berglind, *The Effect of Zero-Rating on Mobile Broadband Demand: An Empirical Approach and Potential Implications*, 10 INT'L J. OF COMM. 18, 29 (2016); see also, Augusto Preta & Peng Peng, *Discrimination and Neutrality on the Internet: the Zero Rating Case*, ACADEMIA, http://www.academia.edu/24293750/Discrimination_and_Neutrality_on_the_Internet_the_Zero_Rating_Case [https://perma.cc/SA5W-PL4Z] (last visited Feb. 8, 2017).

This article also conditionally supports zero-rating plans, particularly in lesser-developed countries and proposes limited and well-calibrated government oversight to ensure that subsidies primarily support universal access initiatives over merely providing ways for existing subscribers to conserve their data plans and avoid overcharges, or throttled service, when carriers deliberately slow data transmission speeds or degrade video screen resolution during peak demand times and after subscribers exceed a monthly data allowance. Government regulatory authorities should apply the same qualification requirements used to target existing universal telephone service subsidies. This calibration will conserve funds and limit marketplace distortions.

II. A FAIR AND OPEN INTERNET MARKETPLACE

Advocates for network neutrality have emphasized the need for National Regulatory Authorities (NRAs) to impose nondiscrimination requirements on ISPs to prevent the carriers from creating fast and slow broadband traffic lanes based on corporate affiliation and to prevent the option to pay surcharges for preferential delivery of content. Rather than interconnect, switch, and route traffic on an unbiased “best efforts” basis, network operators can opt to block and drop content packets, or intentionally slow traffic on the false claim of network congestion.

The Federal Communications Commission (FCC) has expressed concern that without muscular, common carrier regulatory oversight, ISPs would create fast lanes²² offering “better than best efforts” traffic prioritization at a surcharge, while relegating everyone else to intentionally slow lanes²³ that are possibly unable to handle even ordinary traffic volumes.²⁴ The potential marketplace distortion lies in the expectation that ISPs can exploit market power, particularly for the last mile delivery of content to retail broadband subscribers.²⁵ Content providers and distributors, unable or unwilling to pay surcharges, would

22. *2015 Open Internet Order*, *supra* note 3, at 5690 (“Some edge and transit providers assert that large broadband Internet access service providers are creating artificial congestion by refusing to upgrade interconnection capacity at their network entrance points for settlement-free peers or CDNs, thus forcing edge providers and CDNs to agree to paid peering arrangements.”).

23. *Id.* at 5608.

24. See S. DEREK TURNER, NET NEUTRALITY: INVESTMENT AND ECONOMICS 3–4 (2010), https://www.savetheinternet.com/sites/default/files/resources/Net_Neutrality_Investment_and_Economics.pdf [<https://perma.cc/TWL2-3L9V>].

25. See *Verizon v. FCC*, 740 F.3d 623, 645–46 (D.C. Cir. 2014) (“Broadband providers have . . . powerful incentives to accept fees from edge providers, either in return for excluding their competitors or for granting them prioritized access to end users.”); *2015 Open Internet Order*, *supra* note 3, at 5608 (“[G]iven the dangers, there is no room for a blanket exception for instances where consumer permission is buried in a service plan—the threats of consumer deception and confusion are simply too great.”).

experience artificial congestion and quality of service degradation, which in turn would deteriorate consumers' quality of experience. Bear in mind that video content consumers have very low tolerance for any form of network performance decline that prevents the seamless display of "must see" or "mission critical" content.

NRAs, such as the FCC, anticipate ISPs price and quality of service discrimination that could harm competition and consumers rather than provide different service tiers and price points. With an eye toward foreclosing harm, the FCC relies on *ex ante* safeguards to prevent and sanction anticipated market distortions rather than using *ex post* remedies if and when such abuses occur.²⁶ *Ex ante* and *ex post* remedies have costs, particularly when they fail to detect and remedy a marketplace distortion—a false negative—and when they identify and sanction reasonable price and quality of service discrimination—a false positive.²⁷

Rigid *ex ante* safeguards make it difficult for NRAs to assess whether an access pricing arrangement harms content competition and consumers, or provides customized solutions at a premium price to defray the higher costs incurred in providing better quality of service. The FCC prohibits ISPs from blocking traffic, throttling delivery speeds, and demanding surcharges for prioritizing traffic.²⁸ While such practices typically evidence unreasonable discrimination, the possibility exists that some forms of preferred status provide lawful and desirable enhancements, particularly when real network congestion increases the odds for degraded network performance and consumer dissatisfaction.

A near absolute or complete prohibition on traffic prioritization precludes last mile ISPs from offering enhanced routing of certain traffic streams prone to congestion such as video streaming of a movie, or a live sporting event carried by a broadcast or cable television network.²⁹ Similarly, the prohibition possibly prevents specific content providers and distributors from securing better and more traffic interconnection opportunities like that achieved by Netflix with Comcast when the parties settled a compensation and traffic exchange dispute that already had triggered consumer

26. See Jasper Sluijs, *Network Neutrality Between False Positives and False Negatives: Introducing a European Approach to American Broadband Markets*, 62 FED. COM. L.J., no. 1, 2010, at 77.

27. See Rob Frieden, *Ex Ante Versus Ex Post Approaches to Network Neutrality: A Comparative Assessment*, 30 BERKELEY TECH. L.J. 1561 (2015).

28. *2015 Open Internet Order*, *supra* note 3, at 5603 "[W]e adopt carefully-tailored rules that would prevent specific practices we know are harmful to Internet openness . . . as well as a strong standard of conduct designed to prevent the deployment of new practices that would harm Internet openness."

29. See Rob Frieden, *Network Neutrality and Consumer Demand for "Better Than Best Efforts" Traffic Management*, 26 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 71 (2015).

irritation.³⁰

Ex ante safeguards prevent or substantially burden the offering of reasonable, premium service options that enhance the quality of experience for broadband consumers and offer a higher quality of service to content providers. *Ex ante* regulation can impose unneeded remedies for specialized service arrangements, but *ex post* remedies may arrive too late, well after the harm, so that monetary damages or other sanctions prove inadequate.

On three occasions, the FCC has opted to apply *ex ante* regulatory oversight.³¹ The FCC's 2015 initiative reclassified broadband Internet access as common carriage thereby securing jurisdiction to apply muscular *ex ante* measures. In 2016, an appellate court approved the FCC's reclassification of broadband access opting not to second-guess the Commission's new rationales for expanding its regulatory reach.

Reclassification offered the FCC an opportunity to establish clear jurisdiction to apply common carrier regulatory oversight of ISPs. However, it also generated vigorous opposition to the FCC's initiative even though the Commission volunteered to forbear from applying many regulations absent compelling circumstances.³²

The FCC has emphasized the need for narrowly crafted rules designed to “prevent specific practices we know are harmful to Internet openness—blocking, throttling, and paid prioritization— as well as a strong standard of conduct designed to prevent the deployment of new practices that would harm Internet openness.”³³ The Commission emphasized that ISPs have both the incentive and

30. See generally Drew Fitzgerald & Shalini Ramachandran, *Netflix-Traffic Feud Leads to Video Slowdown*, WALL ST. J. (Feb. 18, 2014), <https://www.wsj.com/video/netflix-traffic-feud-leads-to-showdown/25B992B2-6382-4070-BD18-6FC9B8F7BE3E.html> [<https://perma.cc/5JDZ-VABX>]; Steven Musil, *Netflix Reaches Streaming Traffic Agreement with Comcast*, CNET (Feb. 23, 2014, 10:03 AM), <https://www.cnet.com/news/netflix-reaches-streaming-traffic-agreement-with-comcast/> [<http://perma.cc/WY88-7EW8>].

31. *Formal Complaint of Free Press and Public Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer Applications*, File No. EB-08-IH-1518, Memorandum Opinion and Order, 23 FCC Rcd. 13,028 (2008); *Preserving the Open Internet*, WC Dkt. No. 07-52, Report & Order, 25 FCC Rcd. 17,905 (2010) [hereinafter *2010 Open Internet Order*]; *2015 Open Internet Order*, *supra* note 3.

32. *2015 Open Internet Order*, *supra* note 3, at 5603 (“[W]e concurrently exercise the Commission’s forbearance authority to forbear from application of 27 provisions of Title II of the Communications Act, and over 700 Commission rules and regulations.”). The new Republican majority of FCC Commissioners will seek to eliminate, or substantially reduce network neutrality regulations. Ajit Pai, Commissioner, FCC, Remarks Before The Free State Foundation’s Tenth Anniversary Gala Luncheon (Dec. 7, 2016), <https://www.fcc.gov/document/commissioner-pai-remarks-free-state-foundation-luncheon> [<https://perma.cc/7QRP-JE93>] (“[P]roof of market failure should guide the next Commission’s consideration of new regulations. . . . On the day that the Title II Order was adopted, I said that ‘I don’t know whether this plan will be vacated by a court, reversed by Congress, or overturned by a future Commission. But I do believe that its days are numbered.’”).

33. *2015 Open Internet Order*, *supra* note 3, at 5603.

ability to leverage access in ways that can thwart the virtuous cycle of innovation and investment in the Internet ecosystem:

The key insight of the virtuous cycle is that broadband providers have both the incentive and the ability to act as gatekeepers standing between edge providers and consumers. As gatekeepers, they can block access altogether; they can target competitors, including competitors to their own video services; and they can extract unfair tolls.³⁴

The FCC considers it essential that ISPs not have the ability to exploit Internet access in anticompetitive ways that would reduce demand for Internet services.³⁵ In implementing that value, the Commission established a clear, ISP nondiscrimination rule in the 2015 Open Internet Order:

Any person engaged in the provision of broadband Internet access service, insofar as such person is so engaged, shall not unreasonably interfere with or unreasonably disadvantage (i) end users' ability to select, access, and use broadband Internet access service or the lawful Internet content, applications, services, or devices of their choice, or (ii) edge providers' ability to make lawful content, applications, services, or devices available to end users. Reasonable network management shall not be considered a violation of this rule.³⁶

The nondiscrimination rule establishes an expectation that ISPs operate as neutral conduits for content without the ability to favor or disfavor content. On the one hand, nondiscrimination rules work to prevent ISPs from providing preferential and superior handling of traffic generated by a corporate affiliate, or a third party willing to pay a surcharge. On the other hand, the rules largely prevent ISPs from providing upstream content providers with opportunities to secure expedited treatment of traffic that may need comparatively better processing to ensure superior quality of service. While the rules create the risk of sanctions for generating artificial congestion to extort higher payments from content providers, they also may sanction benign or desired enhancements when actual congestion could otherwise result in degraded service.

The nondiscrimination rule and prohibition on prioritizing

34. *Id.* at 5608.

35. *Id.* at 5629.

36. *Id.* at 5609. The FCC defines reasonable network management practice as one having "a primarily technical network management justification, but does not include other business practices. A network management practice is reasonable if it is primarily used for and tailored to achieving a legitimate network management purpose, taking into account the particular network architecture and technology of the broadband Internet access service." *Id.* at 5611.

traffic also generate uncertainty about what ISPs can and cannot do to tier and differentiate service. For example, the FCC has expressed concerns about zero-rated wireless traffic generated by a corporate affiliate and subset of competing content providers.³⁷ Such arrangements can reduce consumers' out of pocket costs, but may distort the competitive marketplace for different types of content by making zero-rated content comparatively more attractive simply because downloading it does debit a monthly data cap.

The FCC also clarified and strengthened its requirement that ISPs operate with transparency³⁸ so that both retail broadband subscribers and upstream carriers and sources of content understand the manner in which they can acquire broadband services.³⁹ However, the FCC specified that its Internet access requirements only apply to the retail practices of ISPs, *vis a vis* downstream end users, and not to the terms and conditions of interconnection between ISPs and other upstream carriers and sources of content.⁴⁰

The FCC now considers ISPs as gatekeepers standing between end users who rely on common carriage, telecommunications services, while upstream content applications are treated as information services.⁴¹ Although the Commission determined that the common carrier classification applies to both upstream and downstream interconnections,⁴² it will refrain from applying the access restrictions on upstream interconnection unless and until

37. See WIRELESS TELECOMMUNICATION BUREAU, POLICY REVIEW OF MOBILE BROADBAND OPERATORS' SPONSORED DATA OFFERINGS FOR ZERO RATED CONTENT AND SERVICES 11 (Jan. 11, 2017), http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0111/DOC-342987A1.pdf [<https://perma.cc/P74Y-M2RM>] ("While this dynamic environment has benefited consumers, these business arrangements may raise many of the same economic and public policy issues involving network owners that the Commission has long considered.") [hereinafter WIRELESS BUREAU ZERO-RATING REPORT].

38. The enhanced transparency requirements include the duty to disclose prices, including the full monthly subscription charge, other fees and data caps and downloading allowances. Additionally, ISPs must report on actual network performance and disclose network practices, including congestion management, application-specific behavior, device attachment rules and security. See *2015 Open Internet Order*, *supra* note 3, at 5672–78.

39. *Id.* at 5609 ("A person engaged in the provision of broadband Internet access service shall publicly disclose accurate information regarding the network management practices, performance, and commercial terms of its broadband Internet access services sufficient for consumers to make informed choices regarding use of such services . . .").

40. *Id.* at 5684 ("[B]roadband Internet access service does not include virtual private network (VPN) services, content delivery networks (CDNs), hosting or data storage services, or Internet backbone services (to the extent those services are separate from broadband Internet access service).").

41. *Id.* at 5615 ("[T]his Order concludes that the retail broadband Internet access service available today is best viewed as separately identifiable offers of (1) a broadband Internet access service that is a telecommunications service . . . and (2) various "add-on" applications, content, and services that generally are information services.").

42. See *id.* at 5610.

anticompetitive conduct arises.⁴³ Similarly, the FCC specified that it will not apply its open Internet access rules on data services provided by upstream ISPs and Content Distribution Networks (CDNs), whose traffic traverse the same networks used for Internet access.⁴⁴ The FCC has created regulatory uncertainty about the scope and reach of its oversight by establishing different regulatory triggers and evaluative criteria.⁴⁵

The FCC emphasized that while subjecting ISPs to Title II⁴⁶ common carrier oversight it will use statutory authority quite narrowly, as evidenced by the decision to forbear⁴⁷ from applying “27 provisions of Title II of the Communications Act, and over 700 Commission rules and regulations.”⁴⁸ The Commission recognized the need to explain how the new requirements satisfy pressing needs, but did so in a narrow and calibrated manner, in light of virulent opposition from most ISPs and two Republican Commissioners.⁴⁹ The Order reports that:

There will be fewer sections of Title II applied than have been applied to Commercial Mobile Radio Service (CMRS), [the regulatory classification for wireless voice telecommunications service] where Congress expressly required the application of Sections 201, 202, and 208, and permitted the Commission to forbear from others. In fact, Title II has never been applied in such a focused way.⁵⁰

The FCC opted not to construct an order applying Section 706 of the Communications Act⁵¹ as the sole foundation for creating

43. *Id.* at 5611 (“[W]e find that the best approach is to watch, learn, and act as required, but not intervene now, especially not with prescriptive rules.”).

44. *Id.* at 5684, para. 190 (“We adopt our tentative conclusion . . . that broadband Internet access service does not include virtual private network services, content delivery networks, hosting or data storage services, or Internet backbone services. . . . The Commission has historically distinguished these services from ‘mass market’ services.”). However, the Commission stated that it does have jurisdiction to resolve carriage disputes between CDNs and downstream ISPs providing content delivery to broadband subscribers. *Id.* at 5610 (“[C]ommercial arrangements for the exchange of traffic with a broadband Internet access provider are within the scope of Title II, and the Commission will be available to hear disputes raised under sections 201 and 202 on a case-by-case basis . . .”).

45. *Id.* at 5611. (“The Commission expressly reserves the authority to take action if a service is, in fact, providing the functional equivalent of broadband Internet access service or is being used to evade the open Internet rules.”).

46. *See* 47 U.S.C. §§ 201–276 (2012).

47. The FCC has the authority to streamline the scope of its Title II oversight by forbearing from applying many common carrier requirements. 47 U.S.C. § 160(a) (2012).

48. *2015 Open Internet Order*, *supra* note 3, at 5603.

49. *See id.* at 5616 (“[W]e simultaneously exercise the Commission’s forbearance authority to forbear from 30 statutory provisions and render over 700 codified rules inapplicable, to establish a light-touch regulatory framework tailored to preserving those provisions that advance our goals of more, better, and open broadband.”).

50. *Id.* at 5612.

51. 47 U.S.C. § 1302 (2012).

narrowly calibrated non-common-carrier rules applicable to ISPs in their capacity as information service providers. The Commission interpreted the Circuit Court of Appeals for the District of Columbia as limiting the scope and efficacy of Section 706 based on the court's determination that the FCC could not impose common carrier duties, even though the court acknowledged that ISPs performed a traffic carriage function for upstream sources of content, commonly referred to as edge providers:

[A]bsent a classification of broadband providers as providing a “telecommunications service,” the Commission could only rely on section 706 to put in place open Internet protections that steered clear of regulating broadband providers as common carriers per se. Thus, in order to bring a decade of debate to a certain conclusion, we conclude that the best path is to rely on all available sources of legal authority—while applying them with a light touch consistent with further investment and broadband deployment. Taking the Verizon decision's implicit invitation, we revisit the Commission's classification of the retail broadband Internet access service as an information service and clarify that this service encompasses the so-called “edge service.”⁵²

The FCC established “clear, bright-line rules”⁵³ prohibiting ISPs from blocking lawful traffic, deliberately slowing traffic down absent legitimate network management requirements and offering to managed and deliver traffic on a preferential basis, commonly known as “paid prioritization.”⁵⁴ The Commission's ban on traffic blocking uses clear-cut language:

A person engaged in the provision of broadband Internet access service, insofar as such person is so engaged, shall not block lawful content, applications, services, or non-harmful devices, subject to reasonable network management.⁵⁵

The FCC also established an absolute ban on throttling absent legitimate network management requirements:

52. *2015 Open Internet Order*, *supra* note 3, at 5614.

53. *Id.* at 5647 (“We accordingly adopt bright-line rules banning blocking, throttling, and paid prioritization by providers of both fixed and mobile broadband Internet access service.”).

54. *Id.* at 5607–08.

55. *Id.* at 5607. The FCC did opt to eliminate rules that would establish a baseline, minimum broadband access standard. It acknowledged practical and technical difficulties associated with setting any such minimum level of access. Additionally the Commission concluded that the no blocking and throttling rules would “allow broadband providers to honor their service commitments to their subscribers without relying upon the concept of a specified level of service to those subscribers or edge providers” *Id.* at 5650.

A person engaged in the provision of broadband Internet access service, insofar as such person is so engaged, shall not impair or degrade lawful Internet traffic on the basis of Internet content, application, or service, or use of a non-harmful device, subject to reasonable network management.⁵⁶

To prevent ISPs from dividing the Internet into fast lanes offered at a premium with slow lanes constituting an inferior baseline, the FCC prohibits paid prioritization:

A person engaged in the provision of broadband Internet access service, insofar as such person is so engaged, shall not engage in paid prioritization. ‘Paid prioritization’ refers to the management of a broadband provider’s network to directly or indirectly favor some traffic over other traffic, including through use of techniques such as traffic shaping, prioritization, resource reservation, or other forms of preferential traffic management, either (a) in exchange for consideration (monetary or otherwise) from a third party, or (b) to benefit an affiliated entity⁵⁷

In addition to the specific prohibitions on blocking, throttling, and paid prioritization, the FCC established a general prohibition on ISP practices that would unreasonably interfere with, or disadvantage, downstream consumers, and upstream edge providers of content, applications and services. The Commission will consider on a case-by-case basis whether an ISP has engaged in a practice “that unreasonably interfere[s] with or unreasonably disadvantage[s] the ability of consumers to reach the Internet content, services, and applications of their choosing or of edge providers to access consumers using the Internet.”⁵⁸ The Commission will apply a more open-ended evaluation than its previously proposed legal standard prohibiting commercially unreasonable practices contained in its 2014 Open Internet

56. *Id.* at 5607.

57. Although one can anticipate instances where a broadband subscriber would want ISPs to provide higher quality of service to reduce the potential for degraded service in the delivery of “must see” video content, the FCC largely forecloses this option. ISPs cannot offer paid prioritization, even at the voluntary request or approval of subscribers based on the Commission’s apprehension that ISPs would abuse the opportunity by imbedding blanket authorization in subscription service agreements. *Id.* at 5608 (“[T]here is no room for a blanket exception for instances where consumer permission is buried in a service plan—the threats of consumer deception and confusion are simply too great.”). However, the FCC will allow exceptions on an *ad hoc* basis using rigorous criteria. *Id.* at 5658 (“The Commission may waive the ban on paid prioritization only if the petitioner demonstrates that the practice would provide some significant public interest benefit and would not harm the open nature of the Internet.”). Note that the FCC “anticipate[s] granting such relief only in exceptional cases.” *Id.* (citing extremely bandwidth intensive telemedicine applications as an example worthy of an exception).

58. *Id.* at 5659.

NPRM.⁵⁹ The FCC concluded that it should “adopt a governing standard that looks to whether consumers or edge providers face unreasonable interference or unreasonable disadvantages, and makes clear that the standard is not limited to whether a practice is agreeable to commercial parties.”⁶⁰

The FCC reported that it would use a “no-unreasonable interference/disadvantage”⁶¹ standard to evaluate controversial subjects including the lawfulness of sponsored data arrangements where an ISP accepts advertiser payment in exchange for an agreement not to meter and debit the downstream traffic delivery.⁶² The Commission also will use this standard to consider the lawfulness of data caps that tier service by the amount of permissible downloading volume. In both instances, the FCC sees the potential for an ISP to create artificial scarcity to extract higher revenues, by favoring corporate affiliates and third parties willing to pay a surcharge. Additionally, the Commission worries that data caps have the potential for disadvantaging competitors by creating disincentives for consumers to try new video programming options, particularly if a zero-rated ISP option exists. On the other hand, the Commission also recognizes that tiered services can promote innovation and new customized services.

The 2015 Open Internet Order expresses the view that reclassifying Internet access as a telecommunications service provides the strongest legal foundation for the Open Internet regulations, coupled with a secondary reference to Section 706 of the Telecommunications Act of 1996 and Title III, which addresses the use of radio spectrum and applies common carriage regulation to wireless voice carriers.⁶³ By using the stronger Title II

59. *Id.* at 5665 (“Based on the record before us, we are persuaded that adopting a legal standard prohibiting commercially unreasonable practices is not the most effective or appropriate approach for protecting and promoting an open Internet.”).

60. *Id.* at 5661–65. The FCC identified a number of factors it will consider in future evaluations. These include an assessment whether a practice allows end-user control and is consistent with promoting consumer choice, its competitive effect, whether consumers and opportunities for free expression are promoted or harmed, the effect on innovation, investment, or broadband deployment, whether the practice hinders the ability of end users or edge providers to use broadband access to communicate with each other and whether a practice conforms to best practices and technical standards adopted by open, broadly representative, and independent Internet engineering, governance initiatives, or standards-setting organization. *See id.*

61. *Id.* at 5609. Thus, the Order adopts the following standard “[T]he provision of broadband Internet access service . . . shall not unreasonably interfere with or unreasonably disadvantage (i) end users’ ability to select, access, and use broadband Internet access service or the lawful Internet content, applications, services, or devices of their choice, or (ii) edge providers’ ability to make lawful content, applications, services, or devices available to end users.”).

62. *Id.* at 5667–68 (“[W]e will look at and assess such practices under the no-unreasonable interference/disadvantage standard, based on the facts of each individual case, and take action as necessary.”).

63. *Id.* at 5720 (“We ground the open Internet rules . . . in multiple sources of legal authority—section 706, Title II, and Title III of the Communications Act.”).

foundation, the FCC asserts that it can establish clear and unconditional statutory authority, but also use the flexibility contained in Title II to forbear from applying most common carrier requirements not relevant to modern broadband service, as occurs for wireless telephone service. However, with a Title II regulatory foundation, the Order makes it possible for the FCC to create an open Internet conduct standard that ISPs cannot harm consumers or edge providers with enforcement tools available to sanction violations.⁶⁴

While the debate over network neutrality has become quite contentious and hyperbolic,⁶⁵ the three core requirements imposed by the Order have generated much popular support.⁶⁶ With the common carrier reclassification, the FCC considers it lawful to impose explicit requirements that ISPs not block legal content, applications, services, or non-harmful devices; throttle, impair, or degrade lawful Internet traffic on the basis of content, applications, services, or non-harmful devices; or offer paid prioritization that would favor some lawful Internet traffic over other lawful traffic in exchange for additional compensation or based on corporate affiliation.

The Order addresses the need for ISPs to manage their networks and to offer specialized services not available to all users, but without creating a loophole for practices that violate network neutrality. Coupled with requirements that ISPs operate transparently in terms of how they provide service, the FCC will permit deviations from absolute neutrality on a case-by-case basis taking into consideration the engineering attributes of the technology used as well as the rationale supporting the legitimacy of the practice.

On appeal to the District Court of Appeals for the District of Columbia, the FCC defended its legal right to reclassify services in light of changed circumstances. The Commission convinced the court that the Communications Act authorizes service reclassifications, or lacks specificity, thereby allowing an expert regulatory agency to clarify ambiguities. By a 2-1 vote, reflecting

64. With an eye toward providing timely, certain and flexible enforcement of its open Internet rules, the FCC announced its intention to use advisory opinions similar to those issued by the Department of Justice's Antitrust Division. *Id.* at 5706 ("Advisory opinions will enable companies to seek guidance on the propriety of certain open Internet practices before implementing them, enabling them to be proactive about compliance and avoid enforcement actions later . . . we believe that they will reduce the number of disputes by providing guidance to the industry.")

65. *See, e.g., 2015 Open Internet Order, supra note 3*, at 5921 (dissenting statement of Commissioner Ajit Pai) ("So why is the FCC changing course? . . . Is it because we now have evidence that the Internet is not open? No. . . . We are flip-flopping for one reason and one reason alone. President Obama told us to do so.")

66. *See, e.g., Doug Aamoth, John Oliver's Net Neutrality Rant Crashes FCC Servers*, TIME (June 3, 2014), <http://time.com/2817567/john-oliver-net-neutrality-fcc/> [<https://perma.cc/V5T7-YBDJ>].

vastly different legal philosophies and regulator expectations, the D.C. Circuit Court of Appeals rejected all challenges to the Open Internet Order.⁶⁷ The majority considered its review function quite limited. The court opted to apply ample precedent supporting deference to regulatory agency expertise on both procedural and substantive areas.⁶⁸ In a nutshell, the majority opted not to second guess the FCC and expressed support for the Commission's interpretation of law and its assessment of how consumers access the Internet and what they expect from service providers.⁶⁹ This decision supports a rare instance where the FCC substantially expands its regulatory wingspan, despite the general trend toward less government oversight.⁷⁰

The partial dissent chided the FCC for poor economic analysis and its failure to provide adequate notice to affected parties, citing *FCC v. Fox Television Stations, Inc.*⁷¹ Additionally, the partial dissent took an activist posture suggesting that the FCC wrongly applied common carriage obligations on a market that it wrongly considered as having monopoly characteristics.⁷²

The court majority rejected claims that the FCC lacked legal authority to reclassify broadband Internet access as a common carrier telecommunications service provided via either fixed or mobile carriers. The court noted that while the FCC previously had deemed broadband access an information service, it did reserve the option to revisit its classification and had good reason to do so.⁷³

67. *United States Telecom Ass'n. v. FCC*, 825 F.3d 674 (D.C. Cir. 2016).

68. *See id.* at 696–697.

69. The court supported the FCC's determination that broadband Internet access constitutes a separate and standalone service vis-a-vis the information services consumers acquire via telecommunications service links. *United State Telecom Ass'n*, 825 F.3d at 698 (“That consumers focus on transmission to the exclusion of add-on applications is hardly controversial. Even the most limited examination of contemporary broadband usage reveals that consumers rely on the service primarily to access third-party content.”).

70. *Id.* at 770 (Williams, J., concurring in part and dissenting in part) (noting that “Section 706 grants the Commission rulemaking authority, it is unsurprising that the grant of rulemaking authority might occasion the promulgation of additional regulation. And if, as is true here (and was true in Verizon), the new regulation is geared to promoting the effective deployment of new telecommunications technologies such as broadband, the regulation is entirely consistent with the Act's objectives”).

71. *See id.*

72. *See id.* (“Given the Commission's assertions elsewhere that competition is limited, and its lack of economic analysis on either the forbearance issue or the Title II classification, the combined decisions to reclassify and forbear—and to assume sufficient competition as well as a lack of it—are arbitrary and capricious.”).

73. The FCC concluded that because of the Verizon case, which reversed the Commission on grounds that it could not impose common carrier regulations on information services, the agency had to reclassify broadband access explicitly and not rely on Section 706 of the Telecommunications Act of 1996, which provides general authority to take affirmative steps to promote access to advanced telecommunications services throughout the nation. *Id.* at 707 (“[T]he Commission could only rely on section 706 to put in place open Internet protections that steered clear of regulating broadband providers as common carriers per se. This, in our view, represents a perfectly “good

Additionally, the court did not consider it a fatal flaw that the FCC extended its telecommunications service jurisdiction to include the upstream links from so-called last mile ISPs to content providers and distributors. The court noted that in the Supreme Court's *Brand X* review of the FCC's determination that last mile access fits within the information service classification, the case applied the *Chevron* doctrine analysis and determined that the definitions of telecommunications service and information service were ambiguous and the FCC's interpretation and policy prescriptions were reasonable.⁷⁴

The court accepted the FCC's rationale for reclassification because consumers rely on telecommunications links to access information services, largely offered by ventures other than the carrier providing access.⁷⁵ Additionally, the majority decision considered and rejected many of the objections raised in the partial dissent. The majority rejected the partial dissent's reliance on assertions that reclassification would harm carriers' incentives to invest in infrastructure. The court held that "it was not unreasonable for the Commission to conclude that broadband's particular classification was less important to investors than increased demand."⁷⁶ The partial dissent endorsed various filings that found flaws in the FCC's economic and market analysis, but the majority refrained from rejecting the FCC's overall assessments and replacing them with general criticisms on the appropriateness of the FCC's analysis.⁷⁷

The majority decision found no defects in the FCC's decision to apply its Open Internet access rules to mobile broadband access. The court rejected the rationale that the rules could only apply to fixed services, because the traditional understanding of common carrier delivered Public Switched Telephone Network services only applies to fixed service made available to the public. The court considered mobile broadband as now generally available to the public as evidenced by the widespread use of smartphones that

reason" for the Commission's change in position."). The partial dissent did not challenge the legal right of the FCC to interpret and apply the ambiguous definitions of telecommunications service and information service in the Telecommunications Act of 1996. The majority considered the interpretation and reclassification as reasonable, but the partial dissent vigorously disagreed.

74. *Id.* at 702.

75. *Id.* at 713 ("The problem in Verizon was not that the Commission had misclassified the service between carriers and edge providers but . . . failed to classify broadband service as a Title II service at all. The Commission overcame this problem in the Order by reclassifying broadband service—and the interconnection arrangements necessary to provide it—as a telecommunications service.").

76. *Id.* at 710.

77. *Gas Transmission Nw. Corp. v. FERC*, 504 F.3d 1318, 1322 (D.C. Cir. 2007) ("We see no reason to second guess these factual determinations, since the court properly defers to policy determinations invoking the [agency's] expertise in evaluating complex market conditions.").

provide both voice and data services.⁷⁸

The majority decision strongly rejected the argument that the FCC's Open Internet rules impermissibly constrain ISPs First Amendment freedom: “[c]ommon carriers have long been subject to nondiscrimination and equal access obligations akin to those imposed by the rules without raising any First Amendment question. Those obligations affect a common carrier’s neutral transmission of others’ speech, not a carrier’s communication of its own message.”⁷⁹

The court noted that telephone companies, railroads, and postal services have borne equal access obligations like that now applied to Internet Service Providers “without raising any First Amendment issue.”⁸⁰

A. Do Broadband Subsidies Offer Lawful Price and Quality of Service Discrimination?

Zero-rating and sponsored data arrangements reduce or eliminate out of pocket costs borne by retail broadband subscribers for the content switching, routing, and transmission services of an ISP. ISPs providing last mile delivery of Internet traffic operate in a two-sided market⁸¹ and have flexibility in deciding how to recoup costs from both downstream retail broadband subscribers and upstream ventures such as ISPs, Content Distribution Networks, and content creators. Like credit card companies, last mile ISPs can strategically allocate financial burdens between two payment categories to maximize revenues. Credit card companies may provide consumers with “free” cards and even ones that provide a financial rebate with use. For consumers who pay on time, the credit card company must rely solely on the revenues generated from upstream vendors who pay a fee each time a card is used.

Broadband subsidies offset payments from retail subscribers by stopping the meter that would otherwise debit a monthly data

78. *Id.* at 715–16 (“Aligning mobile broadband with mobile voice based on their affording similarly ubiquitous access, moreover, was in keeping with Congress’s objective in establishing a defined category of “commercial mobile services” subject to common carrier treatment: to ‘creat[e] regulatory symmetry among similar mobile services.’”).

79. *Id.* at 740.

80. *Id.* at 730. The court noted that in some instances ISPs do create and distribute content, and in such instances common carriage requirements do not apply. If a broadband provider nonetheless were to choose to exercise editorial discretion—for instance, by picking a limited set of websites to carry and offering that service as a curated internet experience—it might then qualify as a First Amendment speaker. But the Order itself excludes such providers from the rules. *Id.* at 743.

81. See David S. Evans, *The Antitrust Economics of Multi-Sided Platform Markets*, 20 YALE J. ON REG. 325, 328 (2003); see also, LAYTON & ELALUF-CALDERWOOD, *supra* note 6; Inge Graef, Sih Yuliana Wahyuningtyas & Peggy Valcke, *Assessing Data Access Issues in Online Platforms*, 39 TELECOM. POL’Y, no. 5, 2015, at 375; Daniel M. Tracer, *Overcharge But Don’t Overestimate: Calculating Damages for Antitrust Injuries in Two-Sided Markets*, 33 CARDOZO L. REV., no. 2, 2011, at 807.

downloading/uploading allowance. Subscribers exceeding their monthly data rate either incur a surcharge, or must make do with throttled service until the next month of service begins. Wireless data plans typically provide only a few gigabytes of content per month that subscribers exhaust by streaming a few full-length movies.⁸² Skimpy data service allowances make zero-rating options appear particularly attractive.

In many developed countries, zero-rating provides a way for wireless subscribers to conserve a meager monthly data allowance. Carriers offer different tiers of service based on content delivery speeds and monthly data rates. In an environment where wireless ISPs ration content downloading allotments, zero-rating helps subscribers avoid exceeding their data allowance, which would trigger a surcharge. In developing countries, zero-rating primarily offers inducements for new broadband subscriptions. While existing subscribers can conserve their data allowance just like what customers do in developed nations, ISPs and content aggregators, like Facebook, offer zero-rating initiatives to attract new users who previously lacked discretionary income or interest in subscribing.

Recently, the NRAs of several nations, including Canada, Chile, Egypt, India, Japan, and several nations in the European Union have prohibited zero-rating.⁸³ However, the option exists in many other developed and developing nations. Zero-rating constitutes a form of price discrimination, but is it unreasonable and undesirable? The answer to this question depends on how one frames the analysis, because narrow application of economics principles favor subsidies, while normative goals, such as promoting openness, suggests that incumbents should not have options that will likely result in bolstered control over Internet access.

1. The Economics of Zero-Rating

Massive demand for downloading and streaming video, along with other “over the top” applications, has strengthened last mile ISPs’ negotiation leverage with both downstream subscribers and

82. See, e.g., *About Data Packages*, VERIZON WIRELESS, <https://www.verizonwireless.com/b2c/includes/plans/dataInfoOverlay.jsp> [<https://perma.cc/SWJ6-D542>] (last visited Feb. 18, 2017).

83. See Christopher T. Marsden, *Comparative Case Studies in Implementing Net Neutrality: A Critical Analysis of Zero-rating*, 13 SCRIPTED, no. 1, May 2016; Guidelines on the Implementation of European Net Neutrality Rules by National Regulators, BEREC (2016); Antonios Drossos, *The Real Threat to the Open Internet is Zero-rated Content*, Guest Blog, DIGITAL FUEL MONITOR (2015); *Zero-rating of Video and Other Apps in EU and OECD Mobile Markets*, DIGITAL FUEL MONITOR, <http://dfmonitor.eu/zero-rating/> [<https://perma.cc/QYA6-4NUS>] (last visited Feb. 17, 2017); *2015 Open Internet Order*, *supra* note 3, at 5666–67; *United States Telecom Ass’n. v. FCC*, 825 F.3d 674 (D.C. Cir. 2016).

upstream sources and distributors of content.⁸⁴ These ISPs have network access pricing power, particularly in nations lacking robust broadband competition, which includes the United States and most developing countries.⁸⁵ Even where adequate facilities-based competition exists, broadband subscribers typically select only one retail ISP to handle all of their broadband traffic. The FCC considers the state of limited competition and consumer selection of one carrier for all broadband service as validating the conclusion that retail ISPs have both the incentive and ability to exploit their last mile “terminating monopoly” in ways that can harm competition and consumers.

Last mile ISPs have raised broadband subscription rates and sought surcharge payments from major upstream generators of traffic.⁸⁶ Rate increases help defray the substantial investment made to handle ever growing traffic volume, particularly full motion video, but they also evidence the ability of last mile ISPs to raise rates without suffering subscriber churn, because no lower cost competitive alternative exists that offers comparable bit transmission speed and monthly data allowance.

The last mile broadband marketplace lacks facilities-based alternatives in some nations, including the United States, where cable television operators dominate.⁸⁷ While other wired and wireless options exist, they each have quality of service and cost handicaps. Most telephone companies have retrofitted copper wire telephone lines to provide slow speed Digital Subscriber Line broadband service that cannot accommodate multiple, simultaneous video users. Some of these companies, such as AT&T and Verizon, now offer a faster and higher capacity option using fiber optic cables exclusively, or in combination with existing copper wire plant. However, these companies operate in selected metropolitan areas that collectively do not come close to establishing a national service footprint. Wireless options offering increasing transmission speeds, but having monthly data caps, or

84. See generally *2010 Open Internet Order*, *supra* note 31, at 17,905 (“Over-the-top VoIP [and other] services require the end user to obtain broadband transmission from a third-party provider, and providers of over-the-top [services] can vary in terms of the extent to which they rely on their own facilities.”).

85. “We find that advanced telecommunications capability is not being deployed to all Americans in a reasonable and timely fashion.” *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by The Broadband Data Improvement Act*, GN Dkt No. 15-191, 2016 Broadband Progress Report, 31 FCC Rcd. 699, para. 1 (2016) [hereinafter *2016 Broadband Report*].

86. See Fitzgerald & Ramachandran, *supra* note 50.

87. “In particular, the 2016 Broadband Progress Report noted that approximately ten percent of the population — nearly 34 million Americans — lacked access to fixed advanced telecommunications capability.” See *2016 Broadband Report*, *supra* note 85, at 9140–41 (2016).

“unlimited” data service plans nevertheless trigger throttling after subscribers exceed a data consumption threshold and the prospect of degraded video display. Satellite options generally have initial receiving equipment costs, comparatively higher monthly rates, and lower data allowances than wired options. Additionally, the length of time it takes to send and receive satellite traffic causes signal delay (latency) problems for some applications.

Zero-rating enables last mile ISPs to shift some or all of the total content delivery cost away from retail consumers and onto upstream carriers and sources of content. This strategy can maximize social welfare by increasing the number of broadband users, which in turn increases the value of access, which economists label as positive network externalities.⁸⁸ With more and more subscribers joining the bandwagon, Internet content, accessibility, and value increases.⁸⁹ Additional subscribers, including ones that require subsidy inducements, also help carriers recoup substantial sunk costs incurred in erecting a robust network capable of handling peak traffic requirements generated by consumer streaming of video content. Broadband infrastructure requires substantial initial investment, but the marginal cost of traffic switching and transmission traffic from one additional subscriber approaches zero.

On the other hand, uncalibrated subsidies and surcharge demands can distort the marketplace of ideas by creating discounts for accessing curated content in a walled garden. Network neutrality advocates fear the next “killer application,” or source of “must see” content would not get a fair marketplace trial if such new ventures cannot afford to pay surcharges.⁹⁰ In this scenario, incumbents maintain or possibly strengthen their market dominance not by offering superior products and services, but by reducing opportunities for startup ventures to acquire market

88. See Jeffrey A. Eisenach, *The Economics of Zero Rating*, NERA ECONOMIC CONSULTING (Mar. 2, 2015), <http://www.nera.com/publications/archive/2015/the-economics-of-zero-rating.html> [<https://perma.cc/Q5NH-8X9G>]; Doug Brake, *Mobile Zero-rating: The Economics and Innovation Behind Free Data*, ITIF (May 23, 2016), <https://itif.org/publications/2016/05/23/mobile-zero-rating-economics-and-innovation-behind-free-data> [<https://perma.cc/QS8P-5Q29>].

89. Broadband networks achieve positive network externalities as the number of access points and subscribers increase. See John Farrell & Garth Saloner, *Standardization, Compatibility and Innovation*, 16 RAND J. OF ECON. 70 (1985); Michael L. Katz & Carl Shapiro, *Network Externalities, Competition and Compatibility*, 75 AM. ECON. REV. 424 (1985); see also Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479 (1998); Carl Shapiro, *Exclusivity in Network Industries*, 7 GEO. MASON L. REV. 673 (1999).

90. See, e.g., Susan Crawford, *Introducing the Comcast Tax*, BLOOMBERG VIEW (Feb. 24, 2014, 3:24 PM), <http://www.bloombergview.com/articles/2014-02-24/introducing-the-comcast-tax> [<https://perma.cc/PG4X-SXWY>]; Tim Wu, *Comcast Versus the Open Internet*, NEW YORKER (Feb. 24, 2014), <http://www.newyorker.com/tech/elements/comcast-versus-the-open-internet> [<https://perma.cc/CV2T-KRHM>].

share.⁹¹ Zero-rating “hurts consumers because it allows providers to create artificial scarcity of choice and ‘corrupt[s] the growth of online services’”⁹²

2. Normative Concerns

Sponsored data can become part of a venture’s strategic campaign to stimulate interest in Internet-mediated services. For example, Facebook had both public service and private profit objectives in mind when it devised its Internet Basics subsidized access arrangement.⁹³ The company reaps at least some immediate and positive public relations dividends. In the long term, its subsidized service may generate more subscribers, including ones previously unable to afford a subscription and others unwilling to allocate discretionary income for a paid subscription. At least some subscribers to a small portion of freely available Internet content may become paying customers for access to the entire inventory. Facebook can reasonably expect that at least some of today’s free riders will become tomorrow’s paying customers for both broadband Internet access and Internet-advertised goods and services. Facebook and others companies have emphasized altruistic reasons for subsidizing Internet access, while opponents emphasize ulterior motives including a strategy to dislodge or neuter open Internet, network neutrality objectives.⁹⁴ Opponents also note that zero-

91. See Rebecca Curwin, *Unlimited Data, But a Limited Net: How Zero-Rated Partnerships Between Mobile Service Providers and Music-Streaming APPs Violate Net Neutrality*, 17 COLUM. SCI. & TECH. L. REV. 204 (2015); Jeremy Gillula & Jeremy Malcolm, *Internet.org is Not Neutral, Not Secure, and Not the Internet*, ELEC. FRONTIER FOUND. (May 18, 2015), <https://www.eff.org/deeplinks/2015/05/internetorg-not-neutral-not-secure-and-not-internet> [<https://perma.cc/A9CW-M43A>].

92. Richard A. Starr, *Net Neutrality: On Mobile Broadband Carriers and the Open Internet, the Commercially Reasonable Network Management Standard, and the Need for Greater Protection of the Open Internet*, 11 J. BUS. & TECH. L. 89, 103 (2016) (quoting Gautham Nagesh, *Mobile Networks Caught in the Open Internet Debate*, WALL ST. J. (Sept. 16, 2014, 8:05 PM), <http://www.wsj.com/articles/net-neutrality-heats-up-again-over-mobile-data-1410905961> [<https://perma.cc/UPU7-2C2Q>]).

93. “For Zuckerberg, Internet.org is more than just a business initiative or a philanthropic endeavor: He considers connecting people to be his life’s work, the legacy for which he hopes to one day be remembered, and this effort is at its core. Zuckerberg is convinced the world needs Internet.org. The Internet won’t expand on its own, he says; in fact, the rate of growth is slowing. Most companies prioritize connecting the people who have a shot at joining the emerging middle class or who at least have the cash to foot a tiny data plan. Those businesses can’t afford to take a flier on the hardest people to reach—the very poor—in the hope that decades into the future they will transform into a viable market. Zuckerberg can. And as board chair, chief executive, and the majority vote on Facebook’s board, he can compel his board to support him. ‘There’s no way we can draw a plan about why we’re going to invest billions of dollars in getting mostly poor people online,’ he tells me. ‘But at some level, we believe this is what we’re here to do, and we think it’s going to be good, and if we do it, some of that value will come back to us.’” Jessel Hempel, *Inside Facebook’s Ambitious Plan to Connect the Whole World*, WIRED (Jan. 19, 2016); available at: <https://www.wired.com/2016/01/facebook-zuckerberg-internet-org/> [<https://perma.cc/668W-7N6X>].

94. *Open Letter to Mark Zuckerberg Regarding Internet.org, Net Neutrality, Privacy*,

rating sponsors reap ample benefits including the ability to generate more data for identifying Internet content interests and trends as well as usage dossiers of individual subscribers: “[t]his smacks to some of calculated corporate self-interest dressed up as humanitarian rhetoric.”⁹⁵

Opponents also identify several distortions that zero-rating imposes on the marketplace for ideas. Broadband access subsidies create incentives for consumers to migrate from metered to unmetered services. Opponents consider this migration as evidence that unmetered content sites achieve an unfair competitive advantage simply by being included in a limited walled garden of free content.⁹⁶ Additionally, the subsidizing venture can specify the terms and conditions for such access quite possibly prohibiting, or limiting, consumers’ use of security and privacy safeguards such as encryption and software that blocks all or some advertising.⁹⁷

Opponents also have grave concerns that subsidies will bolster the ongoing concentration of control and centralization of power by Internet gatekeepers able to rewrite open Internet rules and thwart “best efforts,” neutral and non-discriminatory access to content:

By turning service providers into gatekeepers—even benevolent ones—zero-rating helps transform the Internet from a permission-less environment (in which anyone can develop a new app or protocol and deploy it, confident that the Internet treats all traffic equally) into one in which developers effectively need to seek approval from ISPs before deploying their

and Security, FACEBOOK (May 18, 2015, 7:34 AM), <https://www.facebook.com/notes/access-now/open-letter-to-mark-zuckerberg-regarding-internetorg-net-neutrality-privacy-and-/935857379791271/> [https://perma.cc/B7NF-9W66].

95. *How to Win Friends and Influence People*, ECONOMIST (Apr. 9, 2016), <http://www.economist.com/news/briefing/21696507-social-network-has-turned-itself-one-worlds-most-influential-technology-giants> [https://perma.cc/4V7L-JLYF].

96. “If you allow AT&T to set arbitrary caps then charge companies to bypass them, you’re injecting a company with a rich history of anti-competitive behavior into a content and service ecosystem that works much better with it out of the way. Also, as VC Fred Wilson correctly noted at the time, such a model puts smaller companies and developers at a distinct disadvantage to their deeper-pocketed counterparts. What AT&T pitches as a great creative boon to industry is actually AT&T just desperately trying to retain gatekeeper power.” Karl Bode, *Despite Limited Interest In AT&T’s Sponsored Data, Company Still ‘Bullish’ On Its Awful Precedent*, TECHDIRT, Net Neutrality (Feb 5, 2015), available at: <https://www.techdirt.com/blog/wireless/articles/20150106/12150529611/despite-limited-interest-ats-sponsored-data-company-still-bullish-its-awful-precedent.shtml> [https://perma.cc/ALW8-HLH9].

97. See, e.g., Mark Graham, *Facebook Is No Charity, and the ‘Free’ in Free Basics Comes at a Price*, CONVERSATION (Jan. 11, 2016, 1:19 AM), <https://theconversation.com/facebook-is-no-charity-and-the-free-in-free-basics-comes-at-a-price-52839> [https://perma.cc/QD67-CRQA] (“[D]espite his claims to the contrary Free Basics clearly runs against the idea of net neutrality by offering access to some sites and not others. . . . Free Basics is able to read all data passing through the platform.”).

latest groundbreaking technology.⁹⁸

Broadband subsidies can help perpetuate the status quo where large companies like Facebook and specific nations, such as the United States, continue to dominate and extend their control.⁹⁹ However, even with financial incentives that favor ventures able and willing to pay carriers to stop traffic metering consumers will pay for compelling content.¹⁰⁰ Similarly, zero-rating can incubate and nurture interest in the Internet, without molding subscribers into consumers with a taste only for foreign content produced by specific companies whose marketing agenda dovetails with the political, industrial policy, and foreign relations interests of their host countries.

Most opponents of zero-rating emphasize their opposition to selective and targeted subsidies whereby only specific web sites and applications qualify. Few individuals would oppose discounted or free access to the entire Internet cloud at bit transmission speeds below what paying subscribers can secure.¹⁰¹ Most zero-rating arrangements do not offer complete Internet access, because doing so would reduce the demand aggregation and funneling process achieved when a curated and limited number of website options exist. In developed nations where ISPs might offer unlimited data plans, the attractiveness of zero-rating would diminish, as would the concerns it can generate. Until that time, opportunity to stop the data meter and avoid video screen resolution degradation, will have a significant impact on the broadband consumption behavior of users in developed and developing countries alike.

Opponents to zero-rating also assert that it contributes to the

98. Jeremy Malcolm, Corynne McSherry & Kit Walsh, *Zero Rating: What It Is and Why You Should Care*, ELEC. FRONTIER FOUND. (Feb. 18, 2016), <https://www.eff.org/deeplinks/2016/02/zero-rating-what-it-is-why-you-should-care> [<https://perma.cc/57GZ-R8Q4>].

99. See *Imperial Ambitions*, ECONOMIST (Apr. 9, 2016), <http://www.economist.com/news/leaders/21696521-mark-zuckerberg-prepares-fight-dominance-next-era-computing-imperial-ambitions> [<https://perma.cc/FVJ9-5Y26>].

100. A specific and comparatively small number of firms currently participate in sponsored data and zero rating arrangements leaving the vast majority of content sources still subject to metering. So far no evidence exists that subsidy payers have increased their market share vis a vis non0subsidy payers. See William P. Rogerson, *The Economics of Data Caps and Free Data Services in Mobile Broadband* (Aug. 17, 2016) (sponsored by the CTIA trade association); available at: <http://www.ctia.org/docs/default-source/default-document-library/081716-rogerson-free-data-white-paper.pdf> [<https://perma.cc/6Y5Z-CHDQ>].

101. The Internet cloud refers to the vast array of interconnected networks that make up the Internet and provide users with seamless connectivity to these networks and the content available via these networks. “The increasing functionality of the Internet is decreasing the role of the personal computer. This shift is being led by the growth of ‘cloud computing’—the ability to run applications and store data on a service provider’s computers over the Internet, rather than on a person’s desktop computer.” William Jeremy Robison, *Free at What Cost?: Cloud Computing Privacy Under The Stored Communications Act*, 98 GEO. L. J. 1195, 1199 (2010).

dismantling of fundamental design goals that support an open and neutral Internet.¹⁰² The Internet's operating standards and protocols support "end-to-end" connectivity from content source at the edge of the Internet cloud all the way through it and onward to individual subscribers.¹⁰³ If ISPs can serve as gatekeepers and even controllers of essential, bottleneck facilities, then they can exploit the power to close off and balkanize the Internet by creating incentives for consumers to "make do" with subsidized content. Just as the network neutrality debate addresses whether ISPs can create fast and slow lanes for accessing content, the zero-rating debate considers whether ISPs can offer subsidized access to a limited number of sites whose owners have agreed to subsidize such access. Zero-rating critics "are fearful that [companies like Facebook] might control poor people's use of the internet, giving access only to a few sites including Facebook but not introducing them to an 'open' web."¹⁰⁴

As Internet access becomes increasingly important to individual and national welfare, one can consider broadband access subsidies an effective strategy for sharing an essential, global resource and medium for free expression.¹⁰⁵ The International Telecommunication Union and other inter-governmental organizations have explored ways to link broadband access with fundamental human rights that should be universally recognized and promoted.¹⁰⁶ This association links Internet access with larger guarantees for freedom of expression and non-discrimination. Depending on how one frames this matter, zero-rating can promote first time, sustainable access to Internet-mediated forums, where poverty, network constraints, and the lack of digital literacy have thwarted progress. Alternatively, it risks condemning many people

102. See Sara Kamal, *If It Isn't Broken, You're Not Looking Hard Enough: Net Neutrality and Its Impact on Minority Communities*, 68 FED. COM. L.J. 329, 350 (2016) ("In a way, it is a different means to the same end: instead of paying more to have faster lanes, ISPs charge less for users to access certain sites. Unlike fast lanes, many view zero-rating as a solution to the problem that many face: users cannot access websites because they cannot afford them. Unfortunately in the long run, it involves the same underlying concept: big companies are paying ISPs to have their content 'favored' over others.").

103. See Mark Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLAL. REV. 925 (2001).

104. *How to Win Friends and Influence People*, ECONOMIST (Apr. 9, 2016), <http://www.economist.com/news/briefing/21696507-social-network-has-turned-itself-one-worlds-most-influential-technology-giants> [<https://perma.cc/FR8B-F8TT>].

105. See Arturo J Carrillo, *Having Your Cake and Eating It Too? Zero-Rating, Net Neutrality and International Law*, 19 STAN. TECH. L. REV. 364 (2016).

106. See, e.g., BROADBAND COMMISSION FOR DIGITAL DEVELOPMENT, *THE STATE OF BROADBAND 2015: BROADBAND AS A FOUNDATION FOR SUSTAINABLE DEVELOPMENT* (2015), <http://www.broadbandcommission.org/documents/reports/bb-annualreport2015.pdf> [<https://perma.cc/7KC2-957S>]; Human Rights Council, *The Promotion, Prot. and Enjoyment of Human Rights on the Internet*, ¶ 1, U.N. Doc. A/HRC/20/L.13 (June 29, 2012).

to an inferior and limited walled garden of sites selected by corporations driven by mostly commercial motivations.

While supporters of zero-rating applaud free access by segments of the population otherwise unlikely to achieve any sort of connectivity, opponents emphasize risks to the fundamental premise that ISPs must treat all online data and content equally “to guarantee the free flow of information as well as unfettered access to it.”¹⁰⁷ Opponents of zero-rating believe that intergovernmental agreements supporting freedom of expression in legacy media such as broadcasting and print media should extend to Internet-mediated forums. Arguably, “the right to access the Internet, or ‘connectivity,’ is an equal normative imperative to the realization of freedom of expression.”¹⁰⁸ In this context, zero-rating would constitute a flawed initiative that creates a comparatively inferior Internet for poor people who are unable to afford the far more robust Internet ecosystem that requires a paid broadband subscription.

A conversation about Internet access in the context of human rights readily dovetails with the recognized mission of governments to promote available and affordable access to both voice telephone and data services. Advocates for zero-rating consider an advertiser subsidy much like a taxpayer or service consumer payment into a fund earmarked for telecommunications development and universal service. These universal subsidy funds provide access opportunities for people otherwise unwilling, or unable to pay for access. Facebook asserts that its Free Basics zero-rating campaign has “brought 25 million people online who otherwise would not be.”¹⁰⁹ Founder and Chairman Mark Zuckerberg expressed the view that zero-rating initiatives could support network neutrality while achieving measurable universal access progress:

If we accept that everyone deserves access to the internet, then we must surely support free basic internet services. That’s why more than 30 [now 62 as of May, 2017] countries have recognized Free Basics as a program consistent with net neutrality and good for consumers. Who could possibly be against this? . . . If people lose access to free basic services they will simply lose access to the opportunities offered by the Internet today.¹¹⁰

107. Carrillo, *supra* note 102, at 368.

108. *Id.* at 408.

109. *Our Impact*, INTERNET.ORG, <http://info.internet.org/en/impact/> [<https://perma.cc/2T5Y-VJJD>] (last visited Feb. 17, 2017).

110. Mark Zuckerberg, *Free Basics Protects Net Neutrality*, TIMES OF INDIA (Dec. 28, 2015, 12:01 AM), <http://blogs.timesofindia.indiatimes.com/toi-edit-page/free-basics-protects-net-neutrality/> [<https://perma.cc/4FGH-GJ3S>].

Advocates for zero-rating consider it as a means to “jump start a virtuous feedback loop that moves the local economy into a high connectivity equilibrium” by first stimulating interest in popular content from foreign nations, but later increasing demand for local content.¹¹¹ In turn, it creates incentives for more investment in infrastructure and even more local content as a higher share of the population seeks online access.

Opponents of zero-rating have expressed concerns that corporate subsidies may create disincentives for national governments to pursue universal service funding initiatives, or to extend, or replace voice telephone subsidies to include broadband access: “[P]roviding limited access, as a policy matter, may dissuade governments and others from working towards solutions to affordable full access.”¹¹² Reducing or eliminating more ambitious access goals risks complacency and satisfaction that enlightened corporate interests will suffice. Absent more robust and expansive universal access initiatives, zero-rating will only support access to a tiny fraction of what the Internet has to offer by a population far smaller than that targeted by nationwide universal funding initiatives.

The full benefits of the Internet accrue when all segments of society have affordable broadband access options via devices that equally support downloading content as well as creating and uploading it. When compared to personal computers and wired broadband access, wireless options typically offer consumers comparatively inferior and more expensive upstream access.¹¹³ Wireless access typically combines carrier metering and higher per unit of capacity charges as compared to wireline options. Similarly, small screens and keypads, as well as limited plugs and interfaces for using larger, external equipment appear to create disincentives for wireless broadband users to create and disseminate content.

Even if ergonomics, cost, and interface limitations did not exist, zero-rating opponents worry that ISPs can bolster their role as content gatekeepers. Cost allocation and recovery decisions can have a major impact on consumer incentives to embrace a free, walled garden of content versus costlier and possibly harder to reach sources. When ISPs opt to recover comparatively more capital and operating expenses from upstream content and services providers than end users, the zero-rated access option becomes even more attractive.

Perhaps unavoidably, questions about access to the Internet

111. Diana Carew, *Zero-Rating: Kick-Starting Internet Ecosystems in Developing Countries*, PROGRESSIVE POL’Y INST., Mar. 2015.

112. Rossini & Moore, *supra* note 6, at 12.

113. Phillip Napoli & Jonathan Obar, *The Emerging Mobile Internet Underclass: A Critique of Mobile Internet Access*, 30 INFO. SOC’Y J. 323 (2014).

also raise issues of its control, particularly by governments. Inter-governmental forums assessing how to make the Internet more accessible and democratic ironically also trigger interest by governments concerned about such access and keen on limiting it. Such nations actively seek to reduce United States dominance, particularly in the context of Internet governance issues such as who manages the registration of domain names and the online look up function used to determine optimal routing of traffic.¹¹⁴ It remains unclear whether these governments would welcome more active and intrusive traffic management by ISPs. On one hand, this can facilitate government monitoring and control of the Internet as well as the ability to identify what network management and surveillance tactics ISPs can implement. On the other hand, this can make the Internet more accessible, porous and competitive, thereby reducing the effectiveness of government monitoring, filtering, and censorship.

B. Concerns in Developing Nations

While many developing nations have embraced zero-rating plans, other governments have not.¹¹⁵ The highly publicized rejection in India provides a case study in how some national governments appear to conclude that the costs and harms resulting from zero-rating schemes outweigh the benefits.

India's telecommunications and Internet regulator has prohibited zero-rating for at least two years. After releasing a consultation paper in December, 2015, the Telecom Regulatory Authority of India (TRAI) soon decided to prohibit zero-rating based on the conclusion that such arrangements constitute a type of tariff discrimination for similar data services that would interfere with the duty of ISPs to keep the Internet open and non-discriminatory.¹¹⁶

TRAI determined that offering a subsidy for service to some but not all broadband subscribers would violate Section 11 (2) of the

114. See e.g., LAURA DENARDIS, *THE GLOBAL WAR FOR INTERNET GOVERNANCE* (2014); MILTON L. MUELLER, *NETWORKS AND STATES* (2013); Laura DeNardis, *Five Destabilizing Trends in Internet Governance*, 12 I/S: J.L. & POL'Y FOR INFO. SOC'Y 113 (2015); Vint Cerf, Patrick Ryan & Max Senges, *Internet Governance is Our Shared Responsibility*, 12 I/S: J.L. & POL'Y FOR INFO. SOC'Y 113 (2016).

115. See Ariel Futter & Alison Gillwald, *Zero-Rated Internet Services: What Is To Be Done?*, BROADBAND 4 AFRICA, no.1, 2015; SUSAN CHALMERS & GINGER PAQUE, *INTERNET GLOBAL FORUM 2015: A DIALOGUE ON ZERO RATING AND NETWORK NEUTRALITY* (2015), <http://www.intgovforum.org/cms/documents/igf-meeting/igf-2015-joao-pessoa/igf2015-reports/583-igf2015a-dialogue-on-zero-rating-and-network-neutrality/file> [<https://perma.cc/Y6RZ-7MXC>].

116. TELECOMM. REGULATORY AUTH. OF INDIA, *CONSULTATION PAPER ON DIFFERENTIAL PRICING FOR DATA SERVICES* (2015), <http://www.trai.gov.in/sites/default/files/CP-Differential-Pricing-09122015.pdf> [<https://perma.cc/WS3S-4N6F>] [hereinafter CONSULTATION PAPER].

Telecom Regulatory Authority of India (Amendment) Act of 2000¹¹⁷ that authorizes TRAI to examine telecommunications service rates to ensure that they comport with “regulatory principles of non-discrimination, transparency, non-predatory, non-ambiguous, not anti-competitive, and not misleading.”¹¹⁸ Because sponsored data results in differential pricing for data usage based on which website, application, or platform a subscriber accesses, TRAI concluded that it should prohibit any such arrangement.

TRAI acknowledged that “differential tariff offerings have positive as well as negative impact.”¹¹⁹ Using what appears to be a cost/benefit analysis, the Indian regulator concluded that zero-rating constituted a form of harmful differential pricing. The regulator prohibited the practice because of the anticipated harm resulting when telecommunications service providers can offer “different tariffs based on content, service, application or other data that a user is accessing or transmitting on the Internet.”¹²⁰ “[A] consumer cannot be charged differently based on whether she is browsing social media site A or B, or on whether she is watching streaming videos or shopping on the Internet.”¹²¹

TRAI acknowledged, but subsequently appears to have discounted, consumer welfare enhancements including zero-rating promotion of product innovation, investment in broadband infrastructure, competition, and more Internet subscriptions. The Authority emphasized the potential for anticompetitive conduct, reduction in positive network externalities, and alteration in consumers’ online behavior. Rather than adopt an *ex post* regulatory regime for investigating complaints on a case-by-case basis, TRAI chose an absolute, *ex ante* bar on differential tariffs.¹²² It emphasized the need for clarity, the view that *ad hoc* investigations would be costly and time consuming, and the conclusion that well-financed actors could take advantage of the regulatory process and “tilt the playing field against those who do not have the resources to pursue regulatory to legal actions” such as “end users, low-cost innovators, start-ups, non-profit organizations, etc.”¹²³

117. Telecom Regulatory Authority of India (Amendment) Ordinance, 2000, § 11(2).

118. CONSULTATION PAPER, *supra* note 113, at 5.

119. *Id.* at 6.

120. *Id.* at 14.

121. *Id.*

122. See Erik Stallman, *A Hard Look at India’s Ban on Zero Rating*, CDT (Feb. 10, 2016), <https://cdt.org/blog/a-hard-look-at-indias-ban-on-zero-rating/> [https://perma.cc/8S75-3K6N].

123. The Telecom Regulatory Authority of India (Amendment) Ordinance, 2000, § 11(2), specified that its prohibition only applies to discounts available for accessing specified web sites and applications. Internet access providers can offer discounts for access to the entire Internet during emergencies.

C. Concerns in Developed Nations

Stakeholders in developed nations consider zero-rating the latest wave of issues raised in the network neutrality debate.¹²⁴ ISPs and wireless carriers have devised many types of zero-rating offers with an eye toward devising flexible and attractive pricing plans.¹²⁵ The emphasis appears to lie in upselling existing subscribers to a more expensive service tier that offers a higher data allotment, or even conditionally “unlimited” services, reduces subscriber cancellation of service (churn), and stimulates greater interest in streaming video and music services rather than promoting universal service objectives. Most zero-rating plans offer reduced out of pocket costs to paying subscribers for access to video and music programming as opposed to offering a zero cost opportunity for prospective, low income consumers.

In the United States, many zero-rating options currently exist, despite vocal opposition by some network neutrality advocates.¹²⁶ In its 2015 Open Internet Order, the FCC did not explicitly ban zero-rating, opting instead to use a case-by-case examination whether the tactic harms competition and consumers.¹²⁷ This evaluation assesses whether zero-rating violates a general prohibition on practices “that unreasonably interfere[s] with or unreasonably disadvantage[s] the ability of consumers to reach the Internet content, services, and applications of their choosing or of edge providers to access consumers using the Internet”¹²⁸

Stanford Law Professor Barbara van Schewick has made presentations to officials at the FCC asserting that zero-rating plans, like that offered by wireless carrier T-Mobile, violate network neutrality principles.¹²⁹ She asserts that the arrangement

124. See, e.g., BERC, BERC’S GUIDELINES ON THE IMPLEMENTATION BY NATIONAL REGULATORS OF EUROPEAN NET NEUTRALITY RULES (2016).

125. See, e.g., *Sponsored Data*, AT&T, <http://www.att.com/att/sponsoreddata/en/index.html> (last visited Feb. 17, 2017); *Introducing Binge On*, T-MOBILE, <http://www.t-mobile.com/offer/binge-on-streaming-video.html> [<https://perma.cc/Q2DY-EY7Y>] (last visited Feb. 17, 2017); *Go90 FAQs*, VERIZON WIRELESS, <https://www.verizonwireless.com/support/go90-faqs/> [<https://perma.cc/JMU3-XMPR>] (last visited Feb. 17, 2017); *Stream TV FAQs*, COMCAST, <https://customer.xfinity.com/help-and-support/cable-tv/stream-faqs> (last visited Feb. 17, 2017) [<https://perma.cc/KCW4-LKSV>]; Comcast has announced plans to offer Netflix access via the company’s set top box. See Klint Fintley, *Comcast’s Netflix Deal Could Open a New Front in the Net Neutrality War*, WIRED (July 8, 2016, 7:00 AM), <http://www.wired.com/2016/07/comcasts-netflix-deal-open-new-front-net-neutrality-war/> [<https://perma.cc/JF6B-C55J>]. This arrangement may create new network neutrality enforcement issues if the streaming of Netflix content qualifies for zero-rating, or access without a broadband subscription.

126. As of early 2017, AT&T, Verizon and T-Mobile had zero-rating options available to their millions of wireless subscribers. See WIRELESS BUREAU ZERO-RATING REPORT, *supra* note 37, at 8–10.

127. *2015 Open Internet Order*, *supra* note 3, at 5668.

128. *Id.* at 5659.

129. BARBARA VAN SCHEWICK, T-MOBILE’S BINGE ON VIOLATES KEY NET NEUTRALITY

achieves many of the harmful outcomes resulting from practices outlawed by the FCC (e.g., deliberate traffic blocking and slowing as well as offering to prioritize specific traffic for additional compensation). Professor van Schewick argues that zero-rating distorts competition, limits user choice, stifles free expression, and harms innovation. She suggests that T-Mobile could avoid violating network neutrality principles by offering a zero-rating option at a lower bit transmission speed for all traffic, offering unlimited video service, or expanding the monthly data allowance for subscribers.

Senior management at the FCC has sent mixed messages to stakeholders. On one hand, former FCC Chairman Tom Wheeler¹³⁰ expressed support for specific zero-rating plans, including ones that offer unmetered access to popular video programming sources such as Netflix, YouTube, HBO, ESPN, and Hulu as well as music content from such popular sources as Pandora, Rhapsody, iHeartRadio, iTunes Radio, Slacker, and Spotify. On the other hand, the FCC sent formal queries to ventures offering zero-rating plans with an eye toward understanding whether and how these arrangements comply with network neutrality rules and requirements.¹³¹ In yet another twist, FCC Chairman Ajit Pai unilaterally ordered the termination of further examination of wireless carriers' zero-rating offers thereby validating them as permissible.¹³²

III. IS ZERO-RATING AKIN TO A TOLL-FREE TELEPHONE NUMBER?

Advocates for zero-rating analogize the service as the Internet-equivalent to a toll-free telephone number. The analogy makes sense in some ways, but not in others. Both pricing arrangements eliminate, or reduce consumers' direct, out of pocket costs for accessing a service. Both use payments by an upstream vendor to defray the costs incurred by downstream consumers. As well, each model shows how in a two-sided market consumers can avoid or reduce costs when some vendors agree to defray both the cost of

PRINCIPLES, (Jan. 29, 2016); *See also*, Barbara van Schewick, *Network Neutrality and Quality of Service: What a Non-Discrimination Rule Should Look Like*, 67 STAN. L. REV. 1 (2015).

130. Jon Bodkin, *T-Mobile's Data Cap Exemption For Video Gets FCC Chairman's Approval*, ARS TECHNICA (Nov. 19, 2015, 12:28 PM), <http://arstechnica.com/business/2015/11/t-mobiles-data-cap-exemption-for-video-gets-fcc-chairmans-approval/> [https://perma.cc/B3K3-6RX3].

131. Cecilia Kang, *F.C.C. Asks Comcast, AT&T and T-Mobile About 'Zero-Rating' Services*, N. Y. TIMES (Dec. 17, 2015, 10:19 PM), http://bits.blogs.nytimes.com/2015/12/17/f-c-c-asks-comcast-att-and-t-mobile-about-zero-rating-services/?_r=0 [https://perma.cc/4M4F-QGUL]; *See also* WIRELESS BUREAU ZERO-RATING REPORT, *supra* note 37.

132. Thomas Gryta, *FCC Ends 'Zero-Rating' Review*, WALL ST. J. (Feb. 3, 2017), <https://www.wsj.com/articles/fcc-ends-zero-rating-review-1486157682> [https://perma.cc/N6AJ-NVZN].

content creation and its delivery. Few object when a “brick and mortar” vendor offers to waive shipping, handling, and other delivery charges that would have raised consumers’ out of pocket costs.

On the other hand, one can readily differentiate the mass media broadcast of advertising to a large audience and a selective subsidy aiming to increase traffic to specific Internet-mediated content and service by individuals. Providers of toll free telephone numbers operate in a robustly competitive marketplace. Some vendors of products and services see a marketing advantage in removing a minor cost, which typically constitutes more of an irritant than a barrier to consummation of the transaction. Similarly, removal of a long-distance telephone charge does not explicitly seek to expand the socio-economic range of prospective customers. Vendors absorb telephone toll charges much like they might reimburse customers for vehicle parking fees, or offer to waive shipping and handling fees for customers reaching an aggregate purchase threshold.

A. Differentiating Free Wi-Fi from Free or Reduced Cost Broadband

Zero-rating plans have some parallels with free Wi-Fi access, but significant differences exist as well. Both use subsidies to provide broadband access, and both types of subsidizers expect to accrue something of value in return. Commercial and non-commercial Wi-Fi subsidizers expect to generate either quantifiable benefits (e.g., more coffee sales) or less measurable public benefits (e.g., a more vibrant central business district). Likewise, zero-rating providers seek to increase revenues both in terms of subscriber numbers and revenues as well as advertising revenues. Non-quantifiable benefits include improved public relations and image as a venture that can jointly enhance value for shareholders while also promoting social welfare.

Wi-Fi and zero-rated broadband access substantially differ in geographical scope and overall impact. Typically, Wi-Fi access occurs in small islands of connectivity having no way to serve mobile users. Wi-Fi hotspots provide broadband access in specific, fixed commercial (coffee shops) and non-commercial (libraries) locations. Zero-rated service offers subsidies to wireless mobile users as well as fixed wireline subscribers throughout a nation. Free Wi-Fi increasingly has become a welcomed amenity while zero rated service is mostly a new marketing strategy. Most Wi-Fi hotspot users like having the opportunity to avoid debiting their expensive monthly wireless data plan as opposed to having first time access to broadband services.

Wi-Fi access typically occurs on an *ad hoc*, occasional basis,

when a user happens to be located within the small “footprint” of access. Subscribers to zero-rated services typically use the service frequently and in many locations. Arguably, Wi-Fi access provides a free option to many users who otherwise could resort to metered service, while zero-rated service may constitute the only affordable option available.

IV. THE CHALLENGE FOR NATIONAL REGULATORY AUTHORITIES

Zero-rating offers identifiable and possibly measurable advantages, but also presents harms that are not as easily detected or assessed. Advocates for zero-rating may eventually be able to prove an aggregate increase in broadband wireless access as well as produce statistics identifying improved market penetration. Opponents can identify several negative consequences, but they cannot readily prove causality, nor quantify the harms caused to existing and potential content providers and broadband subscribers.

NRAs face a quandary in balancing measurable positive effects against plausible, but not quantifiable negative impacts. “The clear benefits of providing even limited access at an affordable price must be balanced against the potential harms both to those individuals receiving access and the macro effects on the Internet and competition as a whole.”¹³³

A. *Recommended Balancing Safeguards*

The significant benefits accruable from zero-rating warrant inclusion in the collection of government and corporate strategies for promoting universal access to affordable broadband service. Zero-rating creates new incentives on the demand side, while most governmental initiatives have concentrated on supply-side stimulation with financial subsidies flowing to carriers.¹³⁴ NRAs should embrace zero-rating as one of many demand-side stimulation strategies to raise interest in broadband services by people lacking discretionary income, or an understanding of the individual and societal benefits generated by Internet access.

Embracing and supporting zero-rating parallels ongoing efforts to promote universal service with cross-subsidies, typically flowing from existing consumers to some prospective or impoverished ones. Governments structure universal service

133. Rossini & Moore, *supra* note 6, at 12.

134. See Mark Cooper, *The Long History and Increasing Importance of Public-Service Principles for 21st Century Public Digital Communications Networks*, 12 J. TELECOM. & HIGH TECH. L. 1 (2014); Rob Frieden, *Assessing the Need for More Incentives to Stimulate Next Generation Network Investment*, 7 I/S: J. L. & POL'Y INFO. SOC'Y 207 (2012); Krishna Jayakar & Harmeet Sawhney, *Universal Service: Beyond Established Practice to Policy Space*, TRPC (2003).

funding initiatives to achieve the greatest progress with the least amount of marketplace distortion. Such calibration and attention to detail also should apply to governmental assessment of zero-rating initiatives.

1. Qualifying Criteria

Many zero-rated services require nothing more than downloading software that provides access to anyone at the click of an icon. The absence of a qualification process has adverse effects that a more calibrated method would eliminate or reduce. Without a vetting procedure, anyone can tap an access subsidy, including people with ample income. Marketplace distortions increase and positive benefits decrease when a universal service subsidy mechanism is not limited to low income prospective users and other qualified groups. The absence of a process for qualifying zero-rating applicants provides subsidized access to users simply looking for ways to conserve their monthly data plan allocation and avoid service throttling or surcharges.¹³⁵ NRAs should consider creating and implementing a simple and short application process that limits zero-rating opportunities to low income, prospective broadband subscribers.

The process by which NRAs administer universal service funding programs provides an easily applied model for implementing a better calibrated zero-rating program. Existing universal service programs that subsidize voice telephony and broadband are typically limited to individuals who otherwise could not afford service. Some funds are earmarked, to promote computer literacy, which in turn can enhance the perceived value in accessing the Internet. Universal service funding administrators need to conserve subsidies in light of caps on available funds. Accordingly, funding programs seek to limit fraud, waste, inefficiency, and funding users who are fully capable of paying for service. As these programs have the primary mission of increasing market penetration, neither service providers nor consumers can credibly balk at initiatives designed to serve specific, under-served segments of the population.

Most universal service funding programs target impoverished, non-subscribers.¹³⁶ Zero funding sources might want to attract and

135. Increasingly even wireline broadband services have caps on data usage, thereby creating incentives for subscribers to find and use zero-rating options. *See, e.g., Terabyte Internet Data Usage Plan*, COMCAST, <https://dataplan.xfinity.com/faq/> [<https://perma.cc/M36C-YRUJ>] (last visited Feb. 17, 2017); Thomas Gryta & Shalini Ramachandran, *Broadband Data Caps Pressure 'Cord Cutters*, WALL ST. J. (Apr. 21, 2016, 12:57 PM), <http://www.wsj.com/articles/broadband-data-caps-pressure-cord-cutters-1461257846> [<https://perma.cc/4JKC-S78R>].

136. *See, e.g.,* Stephanie Mariani, *Universal Internet Access as a Tool to Fight Poverty: The FCC's Lifeline Program*, 23 GEO. J. ON POVERTY L. & POL'Y 551 (2016); Olivier

serve anyone, particularly ones with ample discretionary income, to consume advertised goods and services. Indeed, most zero-rating offers in developed countries are not limited to non-subscribers and the poor. Incumbent carriers and market entrants alike see zero-rating as a vehicle to stimulate aggregate demand and to create an incentive for existing subscribers to upgrade to a more expensive service tier that qualifies for zero-rated content access. For example, before it emphasized many data service tiers, including “unlimited” access subject to throttling, T-Mobile limited access to its zero-rated Binge On service to subscribers paying for more expensive service tiers.¹³⁷ NRAs should emphasize the assertions by zero-rating advocates that the primary purpose lies in promoting access by poor and neglected prospective users.

NRAs should reduce data plan conservation strategies by existing subscribers, or at least consider this user group separately from the smaller set of qualified, low income subscribers. The most robust and greatest subsidy amount should be limited to the most financially challenged users. Qualification criteria should examine the prospective user’s income and not simply age, location, and subsidy-free market penetration.

In the United States, universal service subsidies are available to carriers serving rural areas and low income residents.¹³⁸ Carriers qualify by operating in areas with low population density and high operating costs. Individual consumers qualify by showing an income at or below 135% of federal Poverty Guidelines, or participation in certain assistance programs. The Lifeline assistance program provides a discount on monthly voice wireline or wireless service of \$9.25 per month. In the near future, the program will support broadband and broadband-voice bundles, but only one subsidy per household.

Best practices in universal service subsidy programs include strict adherence to qualification criteria; vigilance for fraudulent registrations and other wasteful practices; specified time periods, subject to renewal; limiting service to one handset per household; and the goal of promoting transition to unsubsidized access. Best practices for zero-rating include efforts to encourage the broadest possible sponsorship and web sites and close scrutiny of broadband service throttling penalties to ensure they are cost-based and not

Sylvain, *Network Equality*, 67 HASTINGS L.J. 443 (2016); Jodie Griffin, *Universal Service in an All IP World*, 23 COMM.LAW CONSP. 346 (2015); Brooke Menschel, *One Web to Unite Us All: Bridging the Digital Divide*, 29 CARDOZO ARTS & ENTMT’ L.J. 143 (2011).

137. T-Mobile now offers most subscribers zero-rating access to over 100 music and video services, but throttles video service to 480 lines of resolution. See *T-Mobile One*, T-MOBILE, <http://www.t-mobile.com/cell-phone-plans.html> [<https://perma.cc/Q8L8-2JKL>] (last visited Feb. 26, 2017).

138. *Lifeline Support for Affordable Communications*, FCC, <https://www.fcc.gov/consumers/guides/lifeline-support-affordable-communications> [<https://perma.cc/JQJ4-VSD8>] (last visited Feb. 17 2017).

designed to force migration to costlier data plans.

A sophisticated assessment of zero-rating broadband access rejects exaggerated claims that subsidies will dismantle an open Internet, thwart innovation, and eliminate incentives for innovation. Such scrutiny also dispels the summary conclusion that zero-rating cannot possibly cause any harm to consumers, competition, and the marketplace of ideas. If completely left to the whims and marketing strategies of major incumbent carriers and content providers, subsidies can bolster the status quo and make it even more unlikely for a disruptive technology, content source, or application creator to acquire a sustainable market share. On the other hand, a complete prohibition prevents creative and welfare enhancing pricing arrangements and strategies to stimulate demand.

NRAs should not rely on *ex ante* rules that bar subsidies and provide definitions that attempt to identify harmful practices. Instead, they should provide a forum for timely resolution of complaints when and if they arise. NRAs will continue to struggle to find a lawful way to impose open Internet rules calibrated to sanction only harmful quality of service and price discrimination without creating investment disincentives. Rather than concentrate on setting rules, they should emphasize dispute resolution.

CONCLUSION

For the foreseeable future, broadband providers cannot configure their networks to provide unconditional, unlimited access to all, or even most subscribers. Wireless network operators in particular will continue facing challenges in acquiring more spectrum to accommodate ever-increasing demand for existing and new services, such as high definition video and the Internet of Things.¹³⁹ The need to manage available bandwidth, as well as financial incentives to offer different tiers of service, combine to create incentives for

139. See, e.g., INT'L TELECOMM. UNION & CISCO, HARNESING THE INTERNET OF THINGS FOR GLOBAL DEVELOPMENT (2016), <https://www.itu.int/en/action/broadband/Documents/Harnessing-IoT-Global-Development.pdf> [<https://perma.cc/54T6-XXZF>]; Mat Ford, *Rough Guide to IETF 97: Internet Of Things*, INTERNET SOCIETY (Nov. 10, 2016), <http://www.internetsociety.org/blog/tech-matters/2016/11/rough-guide-ietf-97-internet-things> [<https://perma.cc/7RVL-PG8V>]; see also, KAREN ROSE, SCOTT ELDRIDGE & LYMAN CHAPIN, THE INTERNET SOCIETY, INTERNET OF THINGS AN OVERVIEW (2015), <https://www.internetsociety.org/sites/default/files/ISOC-IoT-Overview-20151221-en.pdf> [<https://perma.cc/67SJ-RKX6>]; U.S. DEP'T OF COMMERCE, INTERNET POLICY TASK FORCE & DIGITAL ECONOMY LEADERSHIP TEAM, FOSTERING THE ADVANCEMENT OF THE INTERNET OF THINGS (2017), https://www.ntia.doc.gov/files/ntia/publications/iot_green_paper_01122017.pdf [<https://perma.cc/ZM7G-DJZG>]; *Internet of Things*, EUROPEAN COMMISSION: DIGITAL SINGLE MARKET, <https://ec.europa.eu/digital-single-market/en/internet-things> (last updated May 9, 2017) [<https://perma.cc/4AGK-25U5>].

rationing capacity through caps on usage, temporary throttling of traffic delivery speeds, and even deliberate reductions in the resolution of video images delivered to handsets.

Notwithstanding network capacity limitations, broadband service providers remain interested in finding ways to attract new subscribers and to entice existing subscribers with service tiers that generate more revenues. In developing countries, a large population of nonusers remain available for inducements, particularly through zero cost, sponsored data offers. In developed countries, where carriers face mature and nearly saturated markets, inducements concentrate on migrating existing subscribers to more costly service tiers having more generous “unlimited” data allowances that have less restrictions and conditions in the fine print. Throughout the world, broadband access will not yet reach the unmetered standard available to consumers of older legacy services such as voice telephony and text messaging.

Subsidized Internet access remains a viable business strategy throughout the world. The court of public opinion largely supports such options, even if the likely potential exists for significant problems. Accordingly, NRAs in both developed and developing countries should support the conditional availability of sponsored data and zero rating arrangements. In developed countries, zero rating can provide a powerful inducement in marketing pitches offering more value in exchange for higher monthly rates. In developing countries, more finely calibrated sponsored data offers can make the Internet access to the next billion people who have never accessed the Internet.