Narrowing the Digital Divide: A Better Broadband Universal Service Program

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Universal service has long been an integral component of American telecommunications policy. As more activities move online, it becomes increasingly important to narrow the digital divide by helping low-income Americans get online and by extending broadband networks into unserved areas.

Unfortunately, the Federal Communications Commission's reforms are unlikely to help solve this problem. The Commission is repurposing an $8 billion telephone subsidy program to focus instead on broadband networks. But when pressed, the agency admits that it has no proof that the program meaningfully affected telephone adoption rates, and it offers little evidence that it will fare any better at boosting broadband adoption.

The Federal Universal Service Fund needs revolutionary, not evolutionary, change. Rather than modifying a problematic telephone-era program, Congress should adopt new initiatives designed to meet the unique challenges of the broadband era. Congress should offer targeted, direct, portable vouchers that improve the purchasing power of low-income households and allow them to participate meaningfully in telecommunications markets. And it should create a broadband availability block grant program to allow state public utility commissions to fund new networks through a reverse auction mechanism. Finally, it should eliminate the current USF surcharge and instead fund the program directly, which would improve congressional oversight and minimize the fraud and abuse that has historically marred the existing program.

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INTRODUCTION

Universal service has long been an integral component of American telecommunications policy. And rightly so. Communications networks bring communities closer together and facilitate rapid exchange of information among users. The purpose of universal service policies is to extend these networks to as many people as possible. And because of network effects, these policies benefit not only those added to the network but also all other existing users, who can now reach more people and endpoints.[1]

Unfortunately, the Universal Service Fund has also been one of the most criticized programs administered by the Federal Communications Commission. And, again, rightly so. Lifeline spends over $2 billion annually[2] to bring telephone service to low-income households, but when pressed by the Government Accountability Office ("GAO"), the Commission admitted it had no proof that the program meaningfully increased telephone penetration rates.[3] The High-Cost Fund spends $4.5 billion each year[4] to provide telephone service to rural areas, though critics argue much of these funds serve as little more than corporate subsidies for politically-connected rural carriers.[5] More importantly, rising program costs and falling revenue

[1] *See, e.g.*, Steve G. Parsons & James Bixby, *Universal Service in the United States: A Focus on Mobile Communications*, 62 FED. COMM. L. J. 119, 135-36 (2010).

[2] *Lifeline Program for Low-Income Consumers*, FED. COMMC'NS COMMISSION, https://www.fcc.gov/general/lifeline-program-low-income-consumers ("The budget will be $2.279 billion for the calendar year beginning January 1, 2018.") (last visited Sept. 22, 2017).

[3] Daniel Lyons, *To Narrow the Digital Divide, the FCC Should Not Simply Extend Lifeline to Broadband*, AM. ENTERPRISE INST. 1 (Mar. 30, 2016), https://www.aei.org/wp-content/uploads/2016/03/To-Narrow-the-Digital-Divide.pdf (last visited Sept. 22, 2017).

[4] *See* FED. COMMC'NS COMM'N, UNIVERSAL SERVICE MONITORING REPORT 20 (2016) [hereinafter UNIVERSAL SERVICE MONITORING REPORT], https://apps.fcc.gov/edocs_public/attachmatch/DOC-343025A1.pdf.

[5] *See* GOV'T ACCOUNTABILITY OFFICE, FCC HAS REFORMED THE HIGH-COST PROGRAM, BUT OVERSIGHT AND MANAGEMENT COULD BE IMPROVED 1 (2012),

means the universal fund surcharge has risen from 3 percent in 1998 to a whopping 17.9 percent in the third quarter of 2018.[6]

As the Internet displaces the telephone network as America's primary telecommunications platform, the Commission has embraced a series of reforms designed to update the universal service program for the twenty-first century. In 2016, it enacted a comprehensive reform of the Lifeline program, allowing (and eventually requiring) recipients to repurpose their $9.25 monthly subsidy toward Internet access rather than traditional telephone service.[7] And the Commission began a slow transformation of the High-Cost Fund into a new initiative, the Connect America Fund, the purpose of which is to subsidize the construction of new broadband networks in unserved areas.[8]

The Commission's desire to promote broadband universal service is unquestionably good policy. From news to commerce to jobs and education, an increasing percentage of Americans' daily activities are moving online.[9] As this transition progresses, it becomes increasingly important to narrow the digital divide by helping those who cannot afford Internet access, or who live in areas where Internet access is unavailable, to get onto the network.

But regrettably, the reforms it has adopted are unlikely to narrow the digital divide. The Lifeline reforms replicate many of the problems that have long plagued the program: the Commission has not targeted the subsidy to households that otherwise would not purchase Internet access and has offered no proof that an extra $9.25 each month would entice those households to buy Internet access.[10] Its definition of qualifying broadband service is inconsistent with earlier agency rulings,[11] and its desire to phase out telephone support is

http://www.gao.gov/assets/600/592957.pdf.

[6] FED. COMMC'NS COMM'N, PROPOSED THIRD QUARTER 2018 UNIVERSAL SERVICE CONTRIBUTION FACTOR 1 (2018) [hereinafter PROPOSED THIRD QUARTER 2018], https://docs.fcc.gov/public/attachments/DA-18-613A1.pdf. The factor has been as high as 19.5 % in the first quarter of 2018. FED. COMMC'NS COMM'N, PUBLIC NOTICE: PROPOSED FIRST QUARTER 2018 UNIVERSAL SERVICE CONTRIBUTION FACTOR 1 (2017), https://www.fcc.gov/document/usf-contribution-factor-1st-quarter-2018-195-percent. In addition to Lifeline and High-Cost support, the Universal Service Fund also spends $2.3 billion annually on E-rate, a program that provides Internet access to schools and libraries, as well as a program to provide similar access to rural healthcare facilities.

[7] Lifeline & Link Up Reform & Modernization, 31 FCC Rcd. 3962, 3986 (2016).

[8] Connect Am. Fund, 26 FCC Rcd. 17663, 17673 (2011).

[9] *See infra* text accompanying notes 23–26.

[10] *See infra* text accompanying notes 155–84.

[11] *See infra* text accompanying notes 191–94.

unnecessarily paternalistic.[12] Moreover, the Lifeline reforms do not address other, potentially more significant barriers to Internet adoption, such as low interest in buying household Internet access and the high cost of computers.[13] The 2016 Lifeline Reform Order amounts to a $2.25 billion annual bet that giving a little bit of money to millions of low-income households will somehow solve the broadband gap. While the Connect America Fund's reverse auction mechanism is a better idea, the Commission's reforms have driven up the Universal Service Fund's costs without addressing the serious structural flaws in the program, such as lack of congressional oversight and an unsustainable funding mechanism.[14]

We can, and we must, do better.

This Article argues that America's approach to universal service needs revolutionary, not evolutionary, change. Rather than merely taking a flawed telephone program and extending it to broadband, Congress should design a new system to address the multifaceted challenges posed by the digital divide.

For low-income consumers, Congress should adopt a comprehensive, consumer-focused approach that addresses multiple drivers of Internet non-adoption and aims to empower low-income families to be full-fledged participants in the telecommunications marketplace. This approach would encompass digital literacy outreach programs and low-cost equipment plans as well as monthly service plan subsidies. The monthly plan subsidy should be data-driven, targeting only those who currently lack Internet access and providing them with the means to secure a plan that fits the activities that we expect recipients to be able to complete online. Consistent with President Obama's ConnectALL initiative, this subsidy should be direct and portable: recipients should receive the subsidy directly and be able to choose how best to use this credit toward the bundle of telecommunications services that best fit their household needs.

For rural areas, Congress should adopt a block grant program in partnership with the states. The challenges to rural broadband construction are myriad and diverse, and the approach that works in flat Kansas may not be readily portable to mountainous West Virginia. State public utility commissions are in a better position than their federal counterparts to analyze the unique challenges faced by the

[12] *See infra* text accompanying notes 195–99.

[13] *See infra* text accompanying notes 185–90.

[14] *See infra* text accompanying notes 223–33.

broadband industry in each state, and to design subsidy programs tailored to those challenges.

Finally, Congress should eliminate the opaque and unsustainable funding mechanism for universal service. The program should be placed on a fixed budget and subjected to congressional oversight. This would increase the incentive to deploy funds efficiently and reduce opportunities for fraud and waste that are so endemic to the current statutory scheme. Congress should also consider shifting the low-income subsidy program away from the Federal Communications Commission and to another agency, such as the Department of Health and Human Services, that better understands the drivers of poverty-related issues.

I. INTRODUCING UNIVERSAL SERVICE

A. The Case for Universal Service

The basic tenet of universal service has been a cornerstone of telecommunications policy for nearly a century. The 1934 Communications Act charges the Federal Communications Commission to "make available, so far as possible, to all the people of the United States . . . a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges."[15] Over the years, Congress and the Commission have taken numerous steps to assist those who, because of geographic or socioeconomic difficulties, lack basic access to the nation's telecommunications network.

Economists often justify these policies by citing network effects. In general, the value of a network connection to a consumer generally increases as the number of people the consumer can reach on the network increases.[16] A telephone network that allows two neighbors to call one another is somewhat useful, if they wish to speak to one another. But extending the network to a third neighbor enhances the value of that network to all three participants: the newly-added neighbor can now use a telephone system that he could not previously access, while each of the two existing members can now call twice as many people as before.[17] A universal service policy that encourages

[15] 47 U.S.C. § 151 (2018).

[16] *See* Parsons & Bixby, *supra* note 1, at 135-36.

[17] *See, e.g.*, Lifeline & Link Up Reform & Modernization, 27 FCC Rcd. 6656, 6665 (2012) ("As an initial matter, all consumers, not just low-income consumers, receive value from the network effects of widespread voice and broadband subscribership.").

greater adoption rates benefits not only the direct recipients of assistance, but all other subscribers as well.[18] These network effects distinguish universal service from many other government entitlement programs where the benefits to the public are less direct, and may make it more politically palatable.[19]

Of course, like other entitlement programs, universal service also confers important benefits directly upon its recipients. In the telephone context, perhaps the most obvious (and oft-recognized) benefit is 911 service, assuring that recipients have rapid access to potentially life-saving public safety and health care services.[20] But the benefits go far beyond simply police and fire protection. As the Commission has explained, "[t]hose consumers without affordable, quality voice services are at a disadvantage in accessing social and economic resources and opportunities."[21] For example, "voice service is particularly important for low-income consumers, who often must juggle multiple jobs and interviews for new employment as well as keep in contact with social service agencies."[22] Socially, telephone service allows a subscriber to keep in contact with friends and family, thus enhancing overall social integration.

The case for a robust universal service program is even stronger in the digital age. As more of our daily activities move online, it becomes increasingly important to make sure that all consumers can continue to participate in society and benefit from the information revolution. These activities include:

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[18] *Id.*

[19] *See* Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479, 546-50 (1998). Of course, these effects can be overstated. As Lemley and McGowan explain:

> While network theory holds that existing members of the telephone network will enjoy some benefit from the addition of new telephone users to the network . . . it does not follow that this marginal private benefit exceeds or equals the marginal private cost of adding new members. Nor does it mean that the private marginal costs and benefits will equal the costs and benefits to society at large, even assuming, as telephony policy has decreed, that society benefits as the extent of the telephone network approaches the goal of universal service.

Id. at 546.

[20] *E.g.*, *Lifeline & Link Up Reform & Modernization*, 27 FCC Rcd. at 6666 ("Voice service allows consumers to connect with public safety and health care resources.").

[21] *Id.* at 6665-66.

[22] *Id.* at 6666.

- **News.** Internet access lowers the cost of information, making it easier to be an informed citizen. According to a recent poll, more Americans report getting their news each week via laptop or computer (70 percent) than via traditional newspapers and magazines (61 percent).[23]

- **Commerce.** The ability to order goods online has yielded significant consumer benefits. Former FCC Chairman Tom Wheeler notes a 2012 study showing that broadband access helps a typical consumer save $8,800 each year by providing access to bargains on goods and services.[24]

- **Jobs.** Companies are increasingly leveraging the Internet to identify and recruit talent. A recent study from the Council of Economic Advisers shows that young unemployed individuals who use the Internet to find jobs are re-employed 25 percent faster than those using only traditional methods.[25]

- **Education.** Schools are increasingly integrating online tools in the classroom and in homework assignments. FCC Commissioner Jessica Rosenworcel has highlighted the role of Internet access for schoolchildren and the need to avoid a "Homework Gap" for those who lack access at home.[26]

Despite these clear benefits, almost one-third of American households lack high-speed Internet access at home.[27] By segmenting this data, we can begin to understand the contours of the digital

[23] *How Americans Get Their News*, AM. PRESS INST. (March 17, 2014, 3:00 PM), https://www.americanpressinstitute.org/publications/reports/survey-research/how-americans-get-news/.

[24] Tom Wheeler, *A Lifeline for Low-Income Americans*, FED. COMM. COMMISSION (May 28, 2015, 1:25 PM), https://www.fcc.gov/news-events/blog/2015/05/28/lifeline-low-income-americans.

[25] COUNCIL OF ECON. ADVISERS, THE DIGITAL DIVIDE AND ECONOMIC BENEFITS OF BROADBAND ACCESS 7 (2016), https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160308_broadband_cea_issue_brief.pdf (citing Peter Kuhn & Hani Mansour, *Is Internet Job Search Still Ineffective?* 18 (Inst. for the Study of Labor (Bonn), Discussion Paper No. 5955, 2011), http://ftp.iza.org/dp5955.pdf).

[26] Jessica Rosenworcel, *How to Close the "Homework Gap"*, MIAMI HERALD (Dec. 5, 2014, 6:06 PM), http://www.miamiherald.com/opinion/op-ed/article4300806.html.

[27] JOHN B. HORRIGAN & MAEVE DUGGAN, PEW RES. CTR., HOME BROADBAND 2015, at 2 (2015), http:// http://www.pewresearch.org/wp-content/uploads/sites/9/2015/12/Broadband-adoption-full.pdf.

divide. 67 percent of urban households, and 70 percent of suburban households, purchase broadband access each month, but only 55 percent of rural homes do so.[28] The disparity is even greater when segmented by income: 95 percent of households earning over $150,000 each year purchase broadband access, compared with only about half of households earning less than $25,000.[29] As the Internet displaces the telephone as the nation's primary telecommunications network, the case for modernizing our traditional universal service mandate to fit the twenty-first century becomes increasingly strong.

B. Origins of the Universal Service Program

1. Universal Service Before the 1996 Telecommunications Act

The term "universal service" originated with legendary AT&T president Theodore Vail, who built the Bell System and secured a nationwide, state-protected telephone monopoly under the mantra of "one policy, one system, and universal service."[30] But as Professor Tim Wu has explained, Vail did not mean "universal as in, say, universal health care. Rather, it was something more akin to one universal church."[31] AT&T was the country's largest telephone company, stemming from its control of Alexander Graham Bell's original telephone patent.[32] But it faced competition from hundreds of independent telephone companies that sprang up after the patent expired in the 1890s.[33] Vail argued, ultimately successfully, that the country was better served by a single telephone system than by a multitude of small entities.[34] But in exchange for a legally protected

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[28] *Id.* at 8.

[29] Lifeline & Link Up Reform & Modernization, 30 FCC Rcd. 7818, 7822, 7829 & n.232 (2015); *see also* HORRIGAN & DUGGAN, *supra* note 27, at 8 (noting that 90% of homes earning over $100,000 per year have access, compared to only 41% of homes earning less than $20,000 per year).

[30] Tim Wu, *The Great American Information Emperors*, SLATE (Nov. 7, 2010, 10:22 PM), http://www.slate.com/articles/technology/technology/features/2010/the_great_american_information_emperors/how_theodore_vail_built_the_att_monopoly.html.

[31] *Id.*; *see also* Michael A. Janson & Christopher S. Yoo, *The Wires Go to War: The U.S. Experiment with Government Ownership of the Telephone System During World War I*, 91 TEX. L. REV. 983, 1042-44 (2013).

[32] *See* Nina Santo, *Deregulation Hang Ups: Two New Laws Should Jam Telecommunications "Crammers"*, 30 MCGEORGE L. REV. 452, 454 (1999).

[33] *Id.* (citing MICHAEL NOLL, INTRODUCTION TO TELEPHONES & TELEPHONE SYSTEMS 177 (2d ed. 1991)).

[34] *See* STUART MINOR BENJAMIN & JAMES B. SPETA, TELECOMMUNICATIONS LAW AND POLICY 545 (5th ed. 2015) (noting that the structure of Bell's monopoly was accepted

monopoly over telephone service in much of the United States, Congress and the states imposed common carriage obligations on AT&T: the 1934 Communications Act required the company to serve customers throughout its service area upon reasonable request, at just and reasonable rates.[35]

During the Bell monopoly era, "universal service" referred to regulators' efforts to manipulate the prices of various telephone services to serve public policy ends.[36] These cross-subsidies often focused on keeping basic telephone service affordable for customers that it would not otherwise be cost-effective to service.[37] For example, Bell charged commercial customers higher rates than residential customers for the same service.[38] By marking up commercial service, Bell could reduce the price for residential service and therefore make telephone service more affordable for American households. Bell also charged similar rates to urban and rural residential customers, despite the fact that it cost the company more to serve rural areas.[39] This rate-averaging meant that urban customers cross-subsidized rural customers. Finally, state and federal regulators together allowed Bell to allocate a disproportionate amount of shared network costs to long-distance service rather than local service.[40] Regulators used long distance calls, which were considered somewhat of a luxury good, to cross-subsidize local service, which was considered a necessity. Together, these policies created artificially low local service rates for residential customers (particularly in rural areas), which helped low-

and built around by federal subsidies).

[35] 47 U.S.C. § 201 (1934); *see* Daniel A. Lyons, *Technology Convergence and Federalism: Who Should Decide the Future of Telecommunications Regulation?*, 43 U. MICH. J.L. REFORM 383, 388 (2010).

[36] BENJAMIN & SPETA, *supra* note 34, at 545.

[37] Daniel F. Spulber & Christopher S. Yoo, *Toward a Unified Theory of Access to Local Telephone Networks*, 61 FED. COMM. L.J. 43, 48-49 (2008). As new companies entered the market for long-distance services in the 1970s, these cross-subsidies also became a tool by which Bell could stifle competition. *Id.* at 74.

[38] *Id.*

[39] BENJAMIN & SPETA, *supra* note 34, at 546.

[40] *Id.* The most explicit of these policies was known as the "Ozark Plan." Enacted in 1970, the Ozark Plan "disproportionately allocated the fixed costs of the local telephone network to long distance traffic" by requiring that for every 1 percent of traffic consisting of long distance calls, 3.3 percent of local network costs would be covered through long distance prices. *Id.* at 550. So a network that carried 90 percent local calls and 10 percent long distance calls would allocate 67 percent of its costs toward local service and 33 percent of is costs to long distance service. *Id.*; *see also* PETER W. HUBER ET AL., *2004 Cumulative Supplement: Competition Policy and Antitrust*, *in* FEDERAL TELECOMMUNICATIONS LAW 122 (2d ed. 1999).

income and rural customers who would be unable to afford service at true cost. During the monopoly era, Bell was largely agnostic about these cross-subsidies: the company was concerned primarily that it earned a reasonable rate of return overall, and was less concerned about where the money came from.[41]

But this carefully balanced system of cross-subsidies began to crumble as competition displaced monopoly in portions of the telephone industry. Savvy entrepreneurs recognized that Bell's supracompetitive profits in areas such as long-distance service represented potential business opportunities.[42] Beginning in the late 1960s, MCI Communications and Sprint developed alternatives to the AT&T long distance network, marketing their private networks to commercial clients who were being overcharged by the Bell monopoly.[43] AT&T battled these upstarts, in part because these competitors' cream-skimming threatened to undermine regulators' cross-subsidy schemes: AT&T would still be required to serve loss-leading rural customers but would be unable to offset those losses in other markets that were becoming more competitive.[44] Ultimately, AT&T's efforts to combat competition drew the attention of antitrust regulators, who sued the company in 1974, alleging that AT&T was leveraging its ongoing monopoly over local telephone exchanges to distort competition in adjacent markets in violation of the Sherman Act.[45] That case settled with the 1984 Modified Final Judgment, which broke up the company into a competitive AT&T long-distance network and seven regional, highly regulated local telephone provider monopolies known as the Regional Bell Operating Companies.[46]

This breakup made it impossible for regulators to maintain the cross-subsidies of the monopoly era, particularly given the separation of the long-distance network from the local exchanges.[47] Indeed, the Modified Final Judgment's purpose was to isolate the local telephone

[41] *See* BENJAMIN & SPETA, *supra* note 34, at 545.

[42] *Id.* at 201.

[43] *See generally* Paul W. MacAvoy & Kenneth Robinson, *Winning by Losing: The AT&T Settlement and Its Impact on Telecommunications*, 1 YALE J. ON REG. 1, 12 (1983).

[44] *See* BENJAMIN & SPETA, *supra* note 34, at 545; MacAvoy & Robinson, *supra* note 43.

[45] United States v. Am. Tel. & Tel. Co., 552 F. Supp. 131, 135 (D.D.C. 1982); *see also* MacAvoy & Robinson, *supra* note 43, at 14.

[46] *See Am. Tel. & Tel. Co.*, 552 F. Supp. at 135 (approving the settlement). The Regional Bell Operating Companies were NYNEX, Bell Atlantic, BellSouth, AmeriTech, Southwestern Bell, US West, and Pacific Bell. Jared S. Dinkes, Note, *Rethinking the Revolution: Competitive Telephony in a Voice Over Internet Protocol Era*, 66 OHIO ST. L.J. 833, 850 n.90 (2005).

[47] *See* BENJAMIN & SPETA, *supra* note 34, at 550.

exchanges and prevent them from entering other lines of business.[48] But regulators remained dedicated to keeping the cost of residential local service affordable, particularly in rural areas.[49] So after the breakup, the FCC and state regulators developed a series of implicit and explicit subsidies designed to recreate the traditional cross-subsidy model within a competitive environment.[50]

Implicit subsidies continued through a complicated access charge regime.[51] While long distance providers competed against one another for residential customers, they could not complete their customers' long-distance calls without the cooperation of an originating local exchange carrier (which carried the call from the calling party's household to that party's long-distance provider) and a terminating local exchange carrier (which carried the call from the long-distance network to the called party's household).[52] To secure that cooperation, the long-distance company paid an access charge to the originating and terminating local telephone exchanges.[53] Because the local exchanges continued to be monopolies after the breakup, these access charges were regulated by tariffs: interstate access charges were regulated by the FCC and intrastate access charges by state public utility commissions.[54] But regulators allowed these access charges to be set well above the local phone companies' costs of carrying these calls.[55] As a result, long-distance companies subsidized local phone company operations and passed along those costs to consumers as part of their long distance rates.[56] And local phone companies, in turn, could use the subsidies to offset below-cost rates for local service.[57] The access charge regime thus replicated the monopoly-era cross-subsidy of local service by long distance service.

The FCC also adopted explicit subsidies to help support local telephone service. Following divestiture, the agency proposed a $6 per month subscriber line charge ("SLC") on every local telephone service

[48] *Am. Tel. & Tel. Co.*, 552 F. Supp. at 160.

[49] *See* BENJAMIN & SPETA, *supra* note 34, at 550.

[50] *See id.*

[51] *See generally* MTS & WATS Mkt. Structure, 93 F.C.C.2d 241 (1983) (outlining the structure and details of the access charge regime).

[52] *See* Access Charge Reform, 15 FCC Rcd. 12962, 12965 (2000).

[53] Dennis L. Weisman, *Default Capacity Tariffs: Smoothing the Transitional Regulatory Asymmetries in the Telecommunications Market*, 5 YALE J. ON REG. 149, 154 (1988).

[54] *See Access Charge Reform*, 15 FCC Rcd. at 12966.

[55] Weisman, *supra* note 53, at 154.

[56] *Id.*

[57] *Id.*

customer, the proceeds of which would help cover the local telephone company's fixed costs.[58] But the proposal drew significant opposition from Congress and state regulators, which sought to keep residential prices low.[59] Ultimately, the agency adopted the $6 SLC on commercial customers and a lower $3.50/month SLC for residential customers.[60] Concerned that even this modest rise might cause some low-income families to cancel telephone service, the FCC and state regulators in 1984 established the Lifeline Assistance Program.[61] As amended in 1985, Lifeline provided a federally funded credit of $3.50/month for eligible customers,[62] thus effectively waiving the new SLC.[63] Lifeline-eligible households also received an additional $3.50/month bill credit from participating states.[64] In 1987, the agency enacted Link Up America, a similar program designed to defray one-time installation costs for low-income families.[65]

2. The 1996 Telecommunications Act

Congress addressed universal service as part of its monumental 1996 Telecommunications Act.[66] Though the bulk of the Act was designed to manufacture competition in local telephone markets, section 254 contains Congress's first explicit statutory instructions on universal service.[67] This provision contains several guiding principles that have helped shape the modern Federal Universal Service Fund.

Federalism: Perhaps most importantly, Congress instructed that universal service be a cooperative endeavor between the federal government and the states. Specifically, the Act established a Federal-State Joint Board[68] tasked with developing "policies for the

[58] BENJAMIN & SPETA, *supra* note 34, at 550.

[59] *Id.*

[60] *Id.*

[61] *See* MTS and WATS Market Structure; and Establishment of a Joint Board; Amendment, 50 Fed. Reg. 939, 939 (Jan. 8, 1985).

[62] BENJAMIN & SPETA, *supra* note 34, at 550.

[63] *MTS and WATS Market Structure*, 50 Fed. Reg. at 941.

[64] *See id.*; *see also* Lynne Holt & Mark Jamison, *Re-Evaluating FCC Policies Concerning the Lifeline and Link-Up Programs*, 5 J. ON TELECOMM. & HIGH TECH. L. 393 (2007).

[65] *See* MTS & WATS Mkt. Structure, 2 FCC Rcd. 2953, 2955 (1987) (amendment of Part 67 of the Commission's Rules & Establishment of a Joint Board).

[66] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, 56 (1996).

[67] 47 U.S.C. § 254 (2018).

[68] *Id.* § 254(a)(1).

preservation and advancement of universal service."[69] The Joint Board is tasked with making recommendations to the Commission regarding universal service issues, which the Commission is required to act upon within one year of receipt.[70] States are also permitted to adopt their own universal service programs that go beyond the Federal Universal Service Fund's basic offerings.[71]

Future-proofing: Presciently, Congress also instructed that "[u]niversal service is an evolving level of telecommunications services . . . taking into account advances in telecommunications and information technologies and services."[72] The Commission establishes the definition of the services supported by the program, upon recommendation from the Federal-State Joint Board.[73] But the Act provides some guidelines to make that determination, including the extent to which such services are "essential to education, public health, or public safety"[74] and are subscribed to by a "substantial majority of residential customers" through "the operation of market choices by customers."[75] The statute thus has safeguards to protect against program recipients being left behind: as innovative new services change consumer preferences and become mainstream, the Commission's definition should shift accordingly.

Specific Principles: Congress also outlined several specific principles to guide the Commission's deliberations and the Joint Board's recommendations. For example, the program should help assure that all consumers have access to telecommunications and information services, including low-income consumers and those living "in rural, insular, and high cost areas."[76] It also must help assure that schools, health care providers, and libraries have access to advanced telecommunications services.[77]

Funding: Finally, the Act provided guidelines regarding how the universal service program would be funded going forward. Congress explained that "[t]here should be specific, predictable and sufficient Federal and State mechanisms to preserve and advance universal

[69] *Id.* § 254(b).
[70] *Id.* § 254(a)(1)-(2).
[71] *Id.* § 254(f).
[72] *Id.* § 254(c)(1).
[73] *Id.*
[74] *Id.* § 254(c)(1)(A).
[75] *Id.* § 254(c)(1)(B).
[76] *Id.* § 254(b)(3).
[77] *Id.* § 254(b)(6).

service."[78] It also preferred an explicit subsidy mechanism to the implicit subsidies of the monopoly era,[79] though courts recognized that it expected this transition to occur gradually rather than all at once.[80] Specifically, Congress instructed that "[e]very telecommunications carrier that provides interstate telecommunications services shall contribute, on an equitable and nondiscriminatory basis, to the specific, predictable, and sufficient mechanisms established by the Commission to preserve and advance universal service."[81]

C. Implementing the 1996 Act: The Federal Universal Service Fund

Pursuant to this direction from Congress, the Joint Board proposed, and the Commission adopted, a comprehensive program to develop and serve the universal service goals identified in the 1996 Telecommunications Act. It also laid out a plan to transition the industry from a system of implicit cross-subsidies to an explicit universal subsidy funded by interstate telecommunications carriers on a competitively-neutral basis. In accordance with the Joint Board's first proposal in 1996, the Commission established four universal service programs.

1. Lifeline and Link Up

To achieve the 1996 Act's mandate to provide assistance to low-income consumers, the Commission refined and expanded the Lifeline and Link Up programs. Lifeline-eligible households would continue to receive a credit on their monthly bills for local telephone service, and the program was expanded nationwide rather than being limited to participating states.[82] The FCC raised the bill credit from $3.50 to

[78] *Id.* § 254(b)(5).

[79] *See id.* § 254(e); Tex. Office of the Pub. Util. Counsel v. FCC, 183 F.3d 393, 425 (5th Cir. 1999) ("We are convinced that the plain language of § 254(e) does not permit the FCC to maintain *any* implicit subsidies for universal service support."); Fed.-State Joint Bd. on Universal Serv., 12 FCC Rcd. 8776, 8783-84 (1997) ("Congress intended that, to the extent possible, 'any support mechanisms continued or created under new section 254 should be explicit, rather than implicit as many support mechanisms are today.'" (quoting H.R. REP. No. 104-458, at 131 (1996) (Conf. Rep.))).

[80] *See, e.g.*, Competitive Telecomms. Ass'n v. FCC, 309 F.3d 8, 15 (D.C. Cir. 2002) (noting that "there is no time limit on *realization* of the reform" to transition to explicit support mechanisms).

[81] 47 U.S.C. § 254(d).

[82] *Fed.-State Joint Bd. on Universal Serv.*, 12 FCC Rcd. at 8957, 8960-61, 8963.

$5.25 and de-linked the credit from the SLC.[83] Link Up offered a one-time bill credit of up to $30 to eligible households for the cost of initiating telephone service.[84] Households could establish eligibility for both programs by showing household income below 135 percent of the national poverty line or by proving enrollment in one of several other government anti-poverty programs.[85] States would be responsible for verifying individual household eligibility.[86] Upon application, the Federal Universal Service Fund would reimburse telecommunications carriers for these bill credits.[87]

Over the next two decades, these low-income assistance programs expanded in response to changing market conditions. The Commission ultimately raised the Lifeline subsidy from $5.25 to $9.25 per month, reflecting rising costs of telecommunications service.[88] In 2008 the Commission expanded Lifeline to include wireless providers as an alternative to traditional landline providers, as long as the consumer did not exceed one Lifeline subsidy per household.[89] The subsidy is not paid to consumers, but is instead paid to telecommunications carriers, who verify individual customers' eligibility and apply to the fund for reimbursement of the subsidy amount.[90]

[83] *Id.* at 8963.

[84] *See id.* at 8959.

[85] *See* Lifeline & Link Up Reform & Modernization, 30 F.C.C. Rcd. 7818, 7873 (2015); Lifeline & Link Up Reform & Modernization, 31 FCC Rcd. 3962, 3965 (2016). The list of programs to determine eligibility has fluctuated slightly since 1997, but includes programs such as Medicaid, food stamps/TANF relief, and Section 8 housing assistance. *Id.* at 4021.

[86] *Fed.-State Joint Bd. on Universal Serv.*, 12 FCC Rcd. at 8975.

[87] *Id.* at 8971.

[88] *See* Lifeline & Link Up Reform & Modernization, 27 FCC Rcd. 6656, 6663 (2012) ("Lifeline now provides a discount to non-Tribal subscribers averaging $9.25 per month for telephone charges . . . ."). Residents in federally-recognized tribal lands are eligible for an additional $25 per month in assistance. *See* Rob Frieden, *Killing with Kindness: Fatal Flaws in the $6.5 Billion Universal Service Funding Mission and What Should Be Done to Narrow the Digital Divide*, 24 CARDOZO ARTS & ENT. L.J. 447, 458 (2006).

[89] *See, e.g.*, Fed.-State Joint Bd. on Universal Serv. Tracfone Wireless, Inc., 23 FCC Rcd. 6206, 6207, 6210, 6214-15 (2008).

[90] See *Verify Subscriber Eligibility*, USAC, http://www.usac.org/li/program-requirements/verify-eligibility/ (last visited Sept. 5, 2018) for an explanation of the eligibility verification process.

2. The High Cost Fund

Following the 1996 Act's instruction that "rural, insular, and high cost areas should have access to telecommunications services,"[91] the Commission established the High Cost Fund. Building on a smaller pre-1996 program, the High Cost Fund provided direct financial support to telecommunications providers in areas "where local rates would otherwise be unaffordable for some consumers."[92] As Rob Frieden explains, the fund subsidized carriers "in areas where the cost of providing service exceeds a national or state average by at least 115 to 135 percent, depending on the type of cost elements supported."[93] Because of low population density in these areas, these telecommunications providers have fewer customers per mile of network than their counterparts in urban and suburban areas, and therefore a smaller customer base from which to recover the costs of installing and maintaining the network.[94] The Joint Board was concerned that if the price of telephone service rose to cover those costs, some consumers may not be able to afford the higher rate. The purpose of the High Cost Fund was to cover some of those fixed costs, so fewer costs would be passed along to consumers and therefore rates in high cost areas would approximate those in more densely populated areas.[95]

3. E-rate and Rural Health Care Program

The Commission enacted the E-rate program to fulfill the 1996 Act's mandate to support advanced telecommunications and information services in the nation's schools and libraries.[96] Unlike Lifeline and the High-Cost Fund, E-rate was designed from the beginning to include Internet access as well as traditional telephone service.[97] Depending on the demographics of the community (including whether it is in an urban or rural area), E-rate reimburses local governments for 20 to 90

[91] 47 U.S.C. § 254(b)(3) (2018).

[92] *See Fed.-State Joint Bd. on Universal Serv.*, 12 FCC Rcd. at 8787.

[93] Frieden, *supra* note 88, at 459.

[94] Frieden notes that many recipients of high-cost support served fewer than 50,000 telephone lines each. *Id.*

[95] *See* Jim Chen, *Subsidized Rural Telephony and the Public Interest: A Case Study in Cooperative Federalism and Its Pitfalls*, 2 J. ON TELECOMM. & HIGH TECH. L. 307, 342 (2003).

[96] *See* Modernizing the E-Rate Program for Sch. & Libraries, 29 FCC Rcd. 8870, 8875 (2014) (detailing the history of E-Rate).

[97] *See id.*

percent of the costs of providing E-rate supported services in covered institutions.[98] Through E-rate, the Commission sought to provide a point of Internet contact in each community and to help the nation's educational system take advantage of the digital revolution.[99]

The Rural Health Care Program is the smallest of the four federal universal service programs. It subsidizes telecommunications service so that rural health care facilities pay rates comparable to their urban counterparts.[100] Like E-rate, the program has long reimbursed for the costs of both traditional telephone service and Internet access.[101] The program has been a catalyst for telemedicine, a suite of Internet-based products that help rural hospitals access advanced medical services and specialists located in urban institutions.

4. Contribution Mechanism

Finally, pursuant to Congressional directive to replace the patchwork collection of implicit and explicit subsidies with "specific, predictable, and sufficient Federal and state mechanisms to preserve and advance universal service," the Commission adopted a revolutionary new funding mechanism.[102] Each quarter, eligible telecommunications carriers report to the Universal Service Administrative Company (to which the Commission has delegated day-to-day administration of the fund)[103] the anticipated subsidies they expect to receive from the Universal Service Fund.[104] All interstate carriers are also required to report their expected quarterly revenue from interstate and international telecommunications services.[105] From these figures, the Commission calculates a Federal Universal Fund Surcharge that each carrier must pay to support the fund. Carriers are permitted to pass this cost on to customers on their monthly bills.[106]

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[98] Frieden, *supra* note 88, at 459-60.

[99] *See Modernizing the E-Rate Program for Sch. & Libraries*, 29 FCC Rcd. at 8875.

[100] Frieden, *supra* note 88, at 460.

[101] *Id.*

[102] *See* Tex. Office of the Pub. Util. Counsel v. FCC, 183 F.3d 393, 406 (5th Cir. 1999) (quoting 47 U.S.C. § 254 (b)(5) (2018)).

[103] 47 C.F.R. § 54.701(a) (2018).

[104] *Id.* § 54.709(a) (2018).

[105] *Id.* The Commission initially sought to assess all telecommunications revenue of interstate telecommunications providers, but the court found that assessment of intrastate revenue exceeded the Commission's authority. *See Tex. Office of the Pub. Util. Counsel*, 183 F.3d at 409.

[106] *See* FED. COMMC'NS COMM'N, UNIVERSAL SERVICE SUPPORT MECHANISMS CONSUMER

D. Transitioning the Universal Service Fund to the Digital Age

While the bulk of the 1996 Telecommunications Act focused on telephone regulation, Congress also charged the Commission with monitoring and encouraging broadband development. Specifically, section 706 requires the Commission to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms)."[107] To fulfill this obligation, the Commission must regularly conduct inquiries to "determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion."[108]

In 2009, the Commission leveraged this annual reporting mandate to launch a comprehensive overview of broadband deployment in America.[109] The resulting 376-page report, the 2010 National Broadband Plan, served as a fulcrum to shift the Commission's attention decisively toward broadband networks.[110] The report described broadband as "the great infrastructure challenge of the 21st century," an engine for growth "[l]ike electricity a century ago."[111] The report provided a comprehensive overview of the broadband marketplace and outlined several potential government initiatives to encourage broadband deployment and uptake.

Perhaps unsurprisingly, the report encouraged the Commission to migrate the Universal Service Fund away from telephone service and toward broadband.[112] It outlined an ambitious plan to ensure all Americans have access to broadband by 2020.[113] Although the Commission did not ultimately enact all of the National Broadband

GUIDE 1 (2017), https://transition.fcc.gov/cgb/consumerfacts/universalservice.pdf.

[107] 47 U.S.C. § 706(a) (1996) (current version at 47 U.S.C. § 1302(a) (2018)).

[108] *Id.* § 706(b) (current version at 47 U.S.C. § 1302(b) (2018)). The Act defines "advanced telecommunications capability" as "without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology." *Id.* § 706(c) (current version at 47 U.S.C. § 1302(d)(1) (2018)).

[109] Inquiry into the Deployment of Advanced Telecomms. Capability to All Ams., 24 FCC Rcd. 10505, 10505 (2009).

[110] FED. COMMC'NS COMM'N, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN (2010) [hereinafter CONNECTING AMERICA], https://transition.fcc.gov/national-broadband-plan/national-broadband-plan.pdf.

[111] *Id.* at xi.

[112] *See id.* at xi, xiii, 10, 136.

[113] *See id.* at 135-36.

Plan's recommendations, it initiated a process whereby the fund shifted slowly but definitively toward providing broadband service.

1. Lifeline Reforms

Citing the National Broadband Plan,[114] the Commission began slowly to expand Lifeline to support broadband access. A 2012 order established a goal of "ensuring the availability of broadband service for low-income consumers."[115] The order recognized that "availability" requires both that broadband service be both accessible and affordable.[116] Initially, the Commission desired to increase broadband penetration rates for low-income consumers so they matched penetration rates of the next-highest income bracket.[117] The order created an eighteen-month pilot program to test the effectiveness of various subsidy levels.[118] The Commission also invited comment on whether to allow the existing subsidy to be credited toward a wireless plan that bundled voice and mobile broadband service.[119]

A 2016 order[120] brought more sweeping changes to the Lifeline program. The Commission recognized that "the Internet has become a prerequisite to full and meaningful participation in society."[121] But while "the importance of broadband grows," the Commission noted that 64.5 million people remain without an Internet connection.[122] A disproportionate share of this population comes from low-income households like those that Lifeline was designed to serve.[123] Citing section 254's mandate that "consumers in all regions of the nation, including low-income consumers . . . should have access to telecommunications and information services"[124] and that universal service is "an evolving level of telecommunications services,"[125] the Commission reoriented Lifeline toward broadband.

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[114] *See id.* at 10 ("To promote affordability, this plan also proposes extending the Lifeline and Link-Up programs to support broadband.").

[115] Lifeline & Link Up Reform & Modernization, 27 FCC Rcd. 6656, 6673 (2012).

[116] *Id.* at 6674.

[117] *See id.*

[118] *Id.* at 6795.

[119] *See id.* at 6793.

[120] *See* Lifeline & Link Up Reform & Modernization, 31 FCC Rcd. 3962 (2016).

[121] *Id.* at 3963.

[122] *Id.*

[123] *Id.*

[124] *Id.* at 3972 (citing 47 U.S.C. § 254(b)(1)(3) (2016)).

[125] *Id.* (citing 47 U.S.C. § 254(c) (2016)).

The 2016 order officially added broadband access as a Lifeline-supported service.[126] Therefore eligible participants were now able to use their $9.25 monthly subsidy toward the purchase of either voice or standalone broadband service.[127] This revision was explicitly technologically neutral, so the subsidy could be used to purchase broadband from a fixed or mobile provider.[128]

The order also established a gradual transition away from voice service. Over a five-and-one-half year period, the Commission will gradually decrease the subsidy for voice-only service from $9.25 to $7.25 and then to $5.25 per month.[129] During this transition period, the full $9.25/month benefit will be available for any plan that includes broadband access.[130] To assure that Lifeline recipients are not left behind as networks improve, the Commission mandated that the subsidy would be available only for plans offering speeds that at least 70 percent of Americans subscribe to. By December 2021, Lifeline subsidies will no longer be available for voice-only service, and the program will from then on support only plans that include broadband access.[131]

2. High-Cost Fund and Intercarrier Compensation Reform

The National Broadband Plan also recommended significant efforts to boost broadband deployment. The report explained there were fourteen million people who simply had no access to broadband service. It estimated that $24 billion in additional funding would be required to close this broadband availability gap.[132] The report noted then-current efforts by Congress to fund new network buildout through the American Recovery and Reinvestment Act, which appropriated $7.2 billion toward new broadband construction efforts, overseen by the Commerce Department and the Department of Agriculture.[133] As a next step, the plan recommended that the

126 *Id.*

127 *Id.* at 3979-81.

128 *Id.* at 3980-81.

129 *See id.* at 3986.

130 *See id.*

131 *Id.*

132 FED. COMMC'NS COMM'N, CONNECTING AMERICA, *supra* note 110, at 136. This figure was calculated by estimating initial capex costs to deploy these networks, plus the ongoing costs to operate these networks, minus expected revenue these new networks would receive, discounted back to 2010 dollars. *See id.* at 136-37.

133 *Id.* at 138-39. This one-time grant was part of the so-called "stimulus bill" designed to counteract the Great Recession. *See id.* at 138. It funded the Broadband

Commission initiate the transition of the High-Cost Fund away from voice service and toward broadband deployment.[134]

The Commission responded with a comprehensive, 752-page order in 2011 that created a two-phase plan to jumpstart the fund's broadband subsidy efforts.[135] In phase I, the agency froze all existing High-Cost support to most telephone companies. For price-cap carriers, a category that included most High-Cost Fund recipients, the Commission conditioned future support upon recipient companies offering broadband service alongside traditional voice service.[136] For rate-of-return carriers, companies that serve the most rural areas and comprise 5 percent of telephone companies but roughly 50 percent of High-Cost Fund expenditures, the Commission required only that recipient companies make broadband service available upon reasonable customer request.[137]

The order also created two new funds dedicated to spur broadband deployment. The first, the Connect America Fund, is dedicated to providing targeted, efficient support for broadband buildout.[138] The second is the Mobility Fund, which is focused specifically upon promoting the universal availability of mobile voice and broadband service.[139] In Phase I, each fund received an immediate $300 million infusion to be dedicated to building broadband in unserved areas, to be awarded via a reverse auction process.[140] In Phase II, the Mobility Fund would receive $500 million in annual support to "expand and sustain mobile voice and broadband services in communities in which service would be unavailable absent federal support."[141] Also during Phase II, the Commission would launch a five-year plan to reduce legacy High-Cost Fund support and instead shift those funds to promote fixed broadband instead.[142]

Telecommunications Opportunities Program, a Commerce Department initiative that provided grants for "for deploying broadband infrastructure in unserved and underserved areas in the United States, enhancing broadband capabilities at public computer centers, and promoting sustainable broadband adoption projects." *Id.* at 139. The Agriculture Department's Broadband Initiatives Program provided grants and loans to facilitate broadband deployment in rural areas. *Id.*

134 *See id.* at 141-42.

135 *See In re* FCC 11-161, 753 F.3d 1015, 1039 (10th Cir. 2014).

136 *See id.*

137 *Id.*

138 *See id.*

139 *Id.* at 1040.

140 *Id.*

141 *Id.* at 1040 (quoting Connect Am. Fund, 26 FCC Rcd. 17663, ¶ 28 (2011)).

142 *See id.* at 1080.

The order contained a multiyear roadmap to transition High-Cost Fund support to the Connect America Fund instead. For price cap carriers, the order froze their support at 2011 levels and planned to create a model that would determine, on a census-block level, the amount of support needed to build and maintain a broadband network.[143] The incumbent price-cap carrier would have the right of first refusal for this support, in exchange for agreeing to provide service throughout each census block.[144] If it refused, then the territory would be subjected to a reverse auction, with the winning bidder assuming the buildout responsibilities.[145] Over time, legacy High-Cost Fund support will be reduced in favor of the new Connect America Fund.[146] For rate-of-return carriers, the order restricted reimbursement for general expenses, capped support at no more than $3000 per line annually, and limited support for carriers whose consumer prices fell below a price floor.[147]

Finally, the order comprehensively overhauled the vestigial implicit subsidies that occurred via the intercarrier compensation regime. Since the 1996 Act, the Commission had undertaken various proceedings to combat arbitrage opportunities created by the existing regime.[148] Recognizing that the intercarrier compensation regime was both anachronistic and ripe for abuse, the Commission outlined a multiyear plan to shift toward a "bill-and-keep" regime wherein telephone networks exchanged traffic for free rather than seeking

[143] *See* Connect Am. Fund, 26 FCC Rcd. 17663, ¶¶ 22-24 (2011).

[144] *Id.* ¶¶ 24, 164.

[145] *Id.* ¶ 299.

[146] *See id.* ¶¶ 164, 180.

[147] *See id.* ¶ 26.

[148] For example, under the Commission's "calling party pays" rule for reciprocal compensation, a local telephone company that originated a local call was required to compensate the competing local telephone company that terminated the call. *See* 47 U.S.C. § 251(b)(5) (2018). This compensation was supposed to be set at cost, but it appeared to be an unintentional profit center for terminating LECs. During dial-up era, LECs competed to provide local telephone service to ISPs such as America Online, because this would drive significant inbound traffic with little or no outbound traffic in return. This competition distorted local markets enough that the Commission eventually removed so-called "ISP-Bound Traffic" from the intercarrier compensation regime completely. *See* WorldCom, Inc. v. FCC, 288 F.3d 429 (D.C. Cir. 2002) (remanding agency order for further proceeding but declining to vacate); Implementation of the Local Competition Provisions in the Telecomms. Act of 1996, 16 FCC Rcd. 9151, 9152-53 (2001). Similarly, attempts by rural LECs to exploit access charges — the rates that local telephone companies charged interexchange carriers to terminate interstate long-distance calls, which the Commission consciously set above cost — led to an order prohibiting arbitrage via "traffic pumping." *See* Connect Am. Fund, 26 FCC Rcd. 17663, ¶ 995 (2011).

compensation from one another based on call volume.[149] The Commission recognized that this would pose financial difficulties for rural and other high-cost carriers that were historically dependent upon these transfers to cover fixed costs, and directed these carriers to instead seek financial relief directly from the Universal Service Fund and from state public utility commissions.[150]

The order was subject to multiple legal challenges, which were consolidated before the Tenth Circuit. In a 361-page opinion, the court upheld the Commission's authority to shift the fund toward broadband support, finding that the Communications Act provided support for the agency's decision.[151] It also dismissed various challenges that the Commission's decision was arbitrary and capricious in violation of the Administrative Procedure Act.[152]

Thus by 2016, the Commission had begun following through on the reforms outlined by the National Broadband Plan. Guided by Congress's instruction that universal service should be "an evolving level of telecommunications,"[153] the Commission began the massive task of redirecting the Universal Service Fund's support system away from the telephone network of the twentieth century and instead toward the fixed and mobile broadband networks of the near future.

II. CRITICIZING UNIVERSAL SERVICE

Although the desire to narrow the digital divide is unquestionably a laudatory one, perhaps the most surprising aspect of this transition is how small the Commission dared to dream. The Commission never asked, in a vacuum, what policy initiatives it could take to improve broadband availability and adoption. Instead, it asked how it might reorient the existing telephone-based fund to focus on broadband instead. This is perhaps unsurprising, given both the agency's statutory mandate and the reality of the existing fund programs. But it meant the Commission did not sufficiently reflect on the flaws in the existing universal service regime, nor did it ask whether programs designed to support the telephone network would translate well into broadband programs. The result was a missed opportunity to correct the many flaws in the existing system, and instead created a risk that

149 *In re* FCC 11-161, 753 F.3d 1015, 1039-40 (10th Cir. 2014).

150 *See id.* at 1097.

151 *See generally id.*

152 *Id.* at 1098.

153 47 U.S.C. § 254(c)(1) (2018).

the Commission would repeat those flaws and perpetuate them for another generation.

A. Lifeline

Lifeline demonstrates perhaps the most obvious example of duplicating what the agency did in the telephone context, without critically evaluating whether that duplication will actually narrow the digital divide. At a high level, the Lifeline Reform Order constitutes a phased transition of the $9.25 monthly subsidy from telephone service to broadband service.[154] But the order simply assumed that this additional funding would reduce the broadband gap, without offering any evidence to support this assertion. And this lack of rigor is especially problematic given that critics have been asking the same question for decades about the program's effectiveness in telephone markets.

1. The Commission Has Not Shown the Subsidy Will Be Effective

Despite the longevity of the Lifeline program, the Commission has never shown that the existing subsidy has any effect on telephone adoption rates. The GAO, which monitors federal spending and performance, has repeatedly criticized the program on these grounds.[155] As noted above, Lifeline developed as a political compromise following the breakup of the Bell monopoly, stemming from a concern that some consumers may not be able to afford the $6/month Subscriber Line Charge that the Commission proposed to replace lost cross-subsidy revenue.[156] But the Commission never studied whether this concern was valid, *viz.*, whether the new SLC charge would in fact cause low-income consumers to cancel their telephone service.[157] Nor does the Commission know whether the Lifeline subsidy has meaningfully increased telephone adoption rates, a fact it freely admitted to the GAO.[158]

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[154] *See* Lifeline & Link Up Reform & Modernization, 27 FCC Rcd. 6656, 6658 (2012).

[155] *See* U.S. GOV'T ACCOUNTABILITY OFFICE, IMPROVED MANAGEMENT CAN ENHANCE FCC DECISION MAKING FOR THE UNIVERSAL SERVICE FUND LOW-INCOME PROGRAM 26-28 (2010) [hereinafter 2010 REPORT]; U.S. GOV'T ACCOUNTABILITY OFFICE, FCC SHOULD EVALUATE THE EFFICIENCY AND EFFECTIVENESS OF THE LIFELINE PROGRAM 15-335 (2015) [hereinafter 2015 REPORT].

[156] *See supra* text accompanying notes 61–64.

[157] *Id.*

[158] *See* U.S. GOV'T ACCOUNTABILITY OFFICE, 2015 REPORT, *supra* note 155, at 14.

In fact, the studies cited by the Commission to the GAO suggest the opposite: they suggest that demand for telephone service is relatively insensitive to changes in price or income, and therefore the subsidy does not significantly affect consumer behavior.[159] A 2013 study by Olga Ukhaneva found that only one in eight households that receive Lifeline subscribes to telephone service because of the subsidy.[160] This suggests that 88 percent of Lifeline dollars are wasted on households at little risk of losing telephone service absent the subsidy — and Ukhaneva argues that the rate is even higher for wireless Lifeline recipients.[161] Similarly, a 2014 study estimated that the subsidy increased telephone penetration rates among poor households by only 6.1 percentage points, to a total of 91.5 percent of households.[162] Reviewing these studies, the GAO concluded that Lifeline "may be a rather inefficient and costly mechanism to increase telephone subscribership among low-income households."[163]

Other scholars have similarly suggested that Lifeline has a small overall impact on telephone penetration rates. David Gabel and Carolyn Gideon found that Lifeline had no statistically significant impact on declining penetration rates between 2003 and 2005.[164] The authors found that Link-Up was statistically significant, though in the wrong direction: increases in Link-Up enrollment were associated with decreasing penetration rates, which the authors hypothesize may stem from greater use of Link-Up in states where overall penetration rates are lower.[165] They also found that changing the total amount of USF support per household had no statistically significant effect on overall penetration rates.[166]

One potential explanation for this result could be that price elasticity of telephone service is low, meaning that price is not a significant indicator of whether a household will contract for service.

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159 *See id.* at 14 (citing Olga Ukhaneva, Universal Service in a Wireless World (Sept. 2014) (unpublished manuscript), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2430713 (presented at the 42d Research Conference on Communication, Information and Internet Policy)); Daniel A. Ackerberg et al., *Estimating the Impact of Low-Income Universal Service Programs*, 37 INT'L J. INDUS. ORG. 84 (2014).

160 *See* Olga Ukhaneva, Universal Service in a Wireless World 1 (Sept. 2014) (unpublished manuscript), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2430713.

161 *See id.*

162 *See* Ackerberg et al., *supra* note 159, at 86.

163 U.S. GOV'T ACCOUNTABILITY OFFICE, 2015 REPORT, *supra* note 155, at 14.

164 Carolyn Gideon & David Gabel, *Disconnecting: Understanding Decline in Universal Service*, 35 TELECOMM. POL'Y 737, 749 (2011).

165 *Id.*

166 *Id.*

Numerous studies have made this point over the years, including a 2000 Brookings Institution study by Robert Crandall and Leonard Waverman.[167] This conclusion is also supported by the fact that only about one-third of eligible households participate in Lifeline, yet low-income penetration rates remain above 90 percent.[168] Other studies suggest that connection charges and predictability of bills are far more likely to be statistically significant indicators of whether a household signs up for or cancels service.[169] If true, this would suggest that rather than deploying Lifeline subsidies to reduce monthly bills, the Commission should focus on defraying startup costs (like the now-defunct Link-Up program did) and focus on consumer protection initiatives to mitigate cancellations due to monthly bill shock.

Of course, broadband service may be more elastic than telephone service, meaning a monthly price subsidy may be more effective on broadband penetration rates than telephone rates. But the Lifeline reform order does not discuss the price elasticity of broadband. Instead the order discusses the importance of broadband to modern consumers and establishes the existence of a digital divide — conclusions few would dispute — then cites consumer surveys suggesting that consumers view cost as an important barrier to adoption.[170] It offers little discussion of these surveys and does not explain their methodologies or reliability. Thus the agency has offered little reason to conclude that extending Lifeline to broadband will measurably close the low-income broadband gap.

Moreover, even assuming that price is a significant barrier to adoption, the order fails to show that a $9.25 monthly subsidy is the appropriate amount to entice significant numbers of unconnected households to purchase broadband service. The GAO recommended that before expanding Lifeline to include broadband, the Commission conduct an assessment of low-income households' telecommunications needs, which would help the agency "effectively target funds based on

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[167] ROBERT W. CRANDALL & LEONARD WAVERMAN, WHO PAYS FOR UNIVERSAL SERVICE? WHEN TELEPHONE SUBSIDIES BECOME TRANSPARENT 91 (2000); *see also* Christopher Garbacz & Herbert G. Thompson Jr., *Universal Telecommunication Service: A World Perspective*, 17 INFO. ECON. & POL'Y 495, 505 (2005).

[168] *See* Lifeline & Link Up Reform & Modernization, 31 FCC Rcd. 3962, 3982 n. 145 (2016) ("[T]he telephone penetration rate in the United States for low-income groups is well over [ninety] percent, meaning millions of Lifeline eligible consumers are still obtaining voice service without Lifeline.").

[169] *See, e.g.*, Milton L. Mueller, *Universal Service from the Bottom Up: A Study of Telephone Penetration in Camden, New Jersey*, 3 INFO. SOC'Y 273, 289-90 (1996).

[170] *See Lifeline & Link Up Reform & Modernization*, 31 FCC Rcd. at 3963, 3968.

data-driven information."[171] The Commission ignored this advice, instead simply adopting the same level of support for broadband that Lifeline provides for telephone service.[172] Even if one assumes without evidence that this subsidy convinces low-income households to buy telephone service, there is no logical reason to conclude that the same amount would also compel unconnected homes to purchase Internet access, which is typically more expensive than phone service. Without conducting a study to determine the factors driving low adoption rates, the Commission cannot conclude that offering $9.25 per month to thirteen million households will boost adoption rates more than offering a larger amount to a smaller number of households: for example, $46.25 per month to 2.6 million recipients, which would cost the same amount of money.[173]

In fact, what little data the Commission has generated suggests that a small monthly subsidy is *unlikely* to boost broadband adoption rates. From 2012 to 2014, the agency conducted a series of broadband subsidy pilot programs.[174] The agency estimated that 74,000 low-income consumers would receive broadband service through these trials, but in fact only one-tenth of this number was enticed to sign up, despite extensive outreach efforts.[175] While the resulting small sample sizes and methodological flaws in the pilots' design limits the conclusions that can be drawn from the data,[176] the Commission noted a preliminary finding that the highest participation rates came from those programs offering deeply discounted or free monthly rates.[177] For example, one project offering a choice between: (1) a plan with an upfront cost and no monthly fee and (2) a plan with a $20 monthly fee saw 100 percent of plan participants enroll in the free option.[178] The draw of free or nearly free service is consistent with the Commission's experience with telephone-based Lifeline, which saw enrollment spike

171 U.S. GOV'T ACCOUNTABILITY OFFICE, 2010 REPORT, *supra* note 155, at 42.

172 *See Lifeline & Link Up Reform & Modernization*, 31 FCC Rcd. at 4002.

173 In fact, the Commission "take[s] no position on whether $9.25 will be sufficient to support the entire cost of the supported service" but was satisfied that the subsidy would make the service more "affordable." *Id.* at 4003.

174 *See* Lifeline & Link Up Reform & Modernization, 27 FCC Rcd. 6656, 6794-96 (2012).

175 *See* U.S. GOV'T ACCOUNTABILITY OFFICE, 2015 REPORT, *supra* note 155, at 33; *see also* SCOTT WALLSTEN, LEARNING FROM THE FCC'S LIFELINE BROADBAND PILOT PROJECTS 1 (2016), https://techpolicyinstitute.org/wp-content/uploads/2016/03/Wallsten_Learning-from-the-FCCs-Lifeline-Broadband-Pilot-Projects.pdf.

176 *See* U.S. GOV'T ACCOUNTABILITY OFFICE, 2015 REPORT, *supra* note 155, at 33.

177 *See id.*

178 *See id.* at 33-34.

when the Commission allowed recipients to purchase a free wireless plan rather than a subsidized landline service.[179]

It is possible for broadband providers to make qualifying plans available at little or no out-of-pocket cost to Lifeline households. Comcast, for example, has offered its fifteen megabits per second (Mbps) Internet Essentials plan to certain families with at least one child on the National School Lunch Program for only $9.95 per month.[180] But it is worth noting that Comcast adopted this program as one of many concessions to secure regulatory approval of its 2011 acquisition of NBC/Universal.[181] It is also limited, as existing Comcast customers are ineligible (which makes sense if the purpose is to narrow the digital divide by reaching only unserved households).[182] Other broadband providers do not offer similar programs, and entry-level broadband service tends to be higher priced: the Commission reports that average advertised rates for a fifteen to twenty-five Mbps plan was $59.51 in 2014.[183] If Lifeline focuses primarily upon plans that require a significant monthly payment from the consumer in addition to the monthly $9.25 subsidy, this data suggests that the subsidy is unlikely to entice unconnected households to come online and instead most of the money will flow to low-income households that are already connected.[184]

2. The Lifeline Subsidy Is Incomplete

Moreover, the 2016 Lifeline reform does little to address the numerous other drivers of the low-income broadband gap. According to the latest Pew Research Center survey, only about one-third of unconnected users cite monthly cost as the most important reason for

[179] As the Commission noted, some of this increase stemmed from rampant fraud and abuse within the Lifeline program prompted by the difficulty of enforcing the one-subsidy-per-household limit on wireless plans. *See* Lifeline & Link Up Reform & Modernization, 31 FCC Rcd. 3962, 3970 (2016).

[180] *See Get to Know Internet Essentials from Comcast*, XFINITY, https://www.xfinity.com/support/articles/comcast-broadband-opportunity-program (last visited Sept. 25, 2018).

[181] *See* Applications of Comcast Corp., Gen. Elec. Co. & NBC Universal, Inc., 26 FCC Rcd. 4238, 4242 (2011).

[182] *See* Daniel A. Lyons, *Internet Policy's Next Frontier: Usage-based Broadband Pricing*, 66 FED. COMM. L.J. 1, 28 (2013). Former Comcast customers with past due balances are also ineligible to participate. *See Terms and Conditions*, XFINITY, https://internetessentials.com/termsandconditions (last visited Oct. 17, 2018).

[183] *See* Int'l Comparison Requirements Pursuant to the Broadband Data Improvement Act, 31 FCC Rcd. 2667, 2678 (2016).

[184] See WALLSTEN, *supra* note 175, at 1.

choosing not to sign up for broadband access.[185] While, as the Commission noted,[186] this is the most-commonly cited factor, it is far from being the only driver cited by respondents. Moreover, for the 20 percent of Americans who have *never* had Internet access, the vast majority (70 percent of that group) is uninterested in subscribing at any price.[187] Larry Downes of Forbes Magazine has studied the evolution of the Pew survey over time and notes that many in this never-connected group cite relevance or usability as reasons not to adopt broadband.[188] This result suggests that a comprehensive Lifeline approach should include digital literacy outreach and other initiatives to make Internet access more attractive and less of a mystery — initiatives that are missing in the current proposal.

Ten percent of Pew respondents cited the high cost of computer equipment as a barrier to broadband adoption,[189] which highlights a key distinction between telephone and broadband subsidy programs. Traditional telephones are fairly inexpensive, and the market has developed tools to allow consumers to finance more expensive wireless handsets over time. But there is not a similar program in place for home computer equipment.[190] This means that the consumer faces a potentially significant upfront cost to cross the digital divide, a factor that the Lifeline telephone program never struggled with. A subsidized monthly plan is worthless to a consumer who lacks the hardware to get online. The Lifeline reform does little to address these other drivers of the digital divide, which limits its overall effectiveness at reaching and converting non-adopters.

The order's minimum service threshold also raises potential questions about the efficacy of the program. The order requires qualifying fixed plans to offer at least ten Mbps download speed and a minimum of 150 GB per month.[191] This service falls short of the twenty-five Mbps minimum that the FCC has defined as "broadband service," meaning that the agency proposes to offer low-income

185 *See* HORRIGAN & DUGGAN, *supra* note 27, at 4.

186 Lifeline & Link Up Reform & Modernization, 31 FCC Rcd. 3962, 3963 (2016).

187 *See* HORRIGAN & DUGGAN, *supra* note 27, at 6; Larry Downes, *Smartphones Are Completing the Broadband Revolution*, CNET (Dec. 23, 2015, 6:45 AM), http://www.cnet.com/news/broadband-adoption-shifts-to-mobile.

188 *See* Downes, *supra* note 187.

189 *See* HORRIGAN & DUGGAN, *supra* note 27, at 16.

190 It is worth noting that Comcast's Internet Essentials program also allows participants to purchase a computer for only $150, which was also part of the merger condition. *See* Applications of Comcast Corp., Gen. Elec. Co. & NBC Universal, Inc., 26 FCC Rcd. 4238, 4242 (2011).

191 *See Lifeline & Link Up Reform & Modernization*, 31 FCC Rcd. at 3993.

consumers plans that, in other contexts, it has determined to be inadequate to meet consumer needs.[192] Then-Commissioner, now Chairman Ajit Pai criticized the order for this discrepancy, which he described as "consign[ing] Lifeline consumers to second-class digital status for the foreseeable future."[193] One can perhaps justify this choice by proving that, contrary to Chairman Pai's assertion, ten Mbps is sufficient to allow eligible recipients to participate meaningfully in cyberspace. But the proposal does not make this argument. Instead it states simply that ten Mbps is the thirtieth percentile of consumer-subscribed speeds, meaning it is what a substantial majority of consumers receive.[194] Absent a more data-driven explanation, the inconsistency between the ten Mbps minimum for Lifeline and the twenty-five Mbps minimum used elsewhere raises questions about the program's goals.

3. The Lifeline Subsidy Is Unnecessarily Paternalistic

Also concerning is the plan to phase out the existing, and popular, subsidy for mobile phone service. Support for mobile phone service will continue only until 2019, after which mobile plans must include a broadband component to be eligible for the subsidy.[195] This seems unnecessarily paternalistic: as noted above, the Pew survey suggests that a substantial majority of consumers who have never purchased broadband access say they are unlikely to do so at any price.[196] One can imagine a variety of potential consumer profiles within this group — for example, impoverished senior citizens who lack interest in Internet access but who value basic mobile telephone service to communicate easily with family and friends. As noted above, the 2008 expansion of Lifeline to include mobile voice service was incredibly popular, helping drive a 166 percent increase in Lifeline subscribers from 2008 to 2012.[197] The GAO estimates that wireless carriers received 85 percent of all Lifeline disbursements in the third quarter of 2014.[198] These plans are popular in part because they involve little or

[192] *See* Inquiry Concerning the Deployment of Advanced Telecomms. Capability to All Ams., 31 FCC Rcd. 699, 701 (2016).

[193] *Lifeline & Link Up Reform & Modernization*, 31 FCC Rcd. at 4170 (Pai, Comm'r, dissenting).

[194] *See id.* at 3993.

[195] *See id.* at 3964.

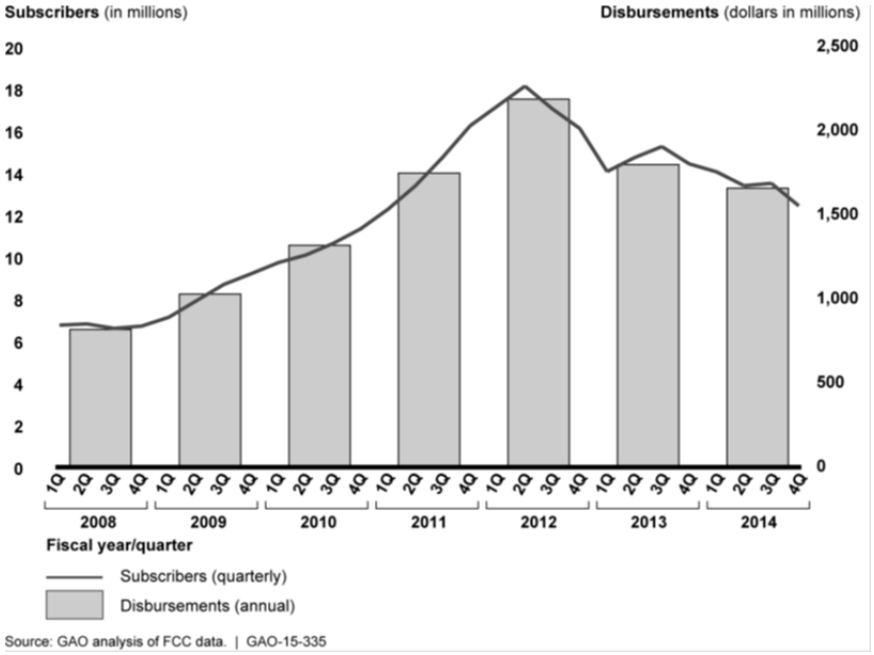
[196] HORRIGAN & DUGGAN, *supra* note 27, at 16-17.

[197] U.S. GOV'T ACCOUNTABILITY OFFICE, 2015 REPORT, *supra* note 155, at 24.

[198] *Id.* at 25.

no monthly contribution from the consumer, thus mirroring the results of the 2012 broadband pilot programs.[199] Replacing this standalone mobile service with a presumably more expensive bundled voice/broadband offering, while holding the subsidy amount constant, is likely to drive up consumer out-of-pocket costs and may reduce Lifeline participation rates.

Figure 1. Lifeline Program Quarterly Subscribers and Revenue, 2008-2014



Ultimately, the 2016 Lifeline Reform Order will spend $2.25 billion or more annually to expand a troubled telephone subsidy program into cyberspace, hoping that some of this money will measurably increase low-income broadband adoption rates. But the Commission has no proof that this is likely — and significant evidence suggests otherwise.

B. Connect America Fund

In many ways, the transformation of the High-Cost Fund into the Connect America Fund reflected a more comprehensive reform effort

[199] *See supra* text accompanying notes 172–77.

than the 2016 Lifeline Order. While the thrust of the reform is similar — cap the existing support for telephone service and slowly transition these funds to support broadband networks instead — the Commission appears to have heeded some of the criticism of the telephone regime. Nonetheless, the Commission's execution of the Connect America Fund initiative demonstrates several flaws that undermine the efficiency of the program.

1. The Commission Has Not Shown the Subsidy Will Be Effective

Like Lifeline, the Connect America Fund contains no significant measure of the effectiveness of the subsidy. This has long been a critique of the traditional High-Cost Fund. One study, for example, suggested that telephone penetration rates would fall by only 0.5 percent if the fund were eliminated completely.[200] Admittedly, the Connect America Fund order took several steps designed to improve program efficiency, such as eliminating the problematic identical support rule and terminating support in areas where an unsubsidized carrier completely overlaps the service territory of a subsidized carrier.[201] And it has begun collecting carrier data on funding, build-out progress, and the service quality and speed of subsidized carriers' broadband plans.[202] But the order lacks a data-analysis plan that would examine this data to determine whether the fund's activities are successful.[203] The Commission proposes to measure improvement in broadband availability by measuring the number of new homes wired per CAF dollars spent.[204] But this simplistic analysis confuses correlation with causation, for as Thomas Hazlett and Scott Wallsten note, "broadband availability may increase for multiple reasons, some of which will have nothing to do with the Connect America Fund. It would therefore be inappropriate to automatically attribute any increases to the subsidy without some sort of rigorous evaluation mechanism."[205]

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[200] *See* Gregory L. Rosston and Bradley S. Wimmer, *The "State" of Universal Service*, 12 INFO. ECON. & POL'Y 261, 270 (2000).

[201] *See* U.S. GOV'T ACCOUNTABILITY OFFICE, FCC HAS REFORMED THE HIGH-COST PROGRAM, BUT OVERSIGHT AND MANAGEMENT COULD BE IMPROVED 10-11 (2012) [hereinafter 2012 REPORT].

[202] *See id.* at 20.

[203] *See id.* at 20; *see also* U.S. GOV'T ACCOUNTABILITY OFFICE, FCC SHOULD IMPROVE THE ACCOUNTABILITY AND TRANSPARENCY OF HIGH-COST FUNDING 21 (2014) [hereinafter 2014 REPORT].

[204] *See id.*

[205] Thomas W. Hazlett & Scott J. Wallsten, Unrepentent Policy Failure: Universal

Related to this concern, the program lacks transparency about how recipient companies use their subsidy dollars. The GAO has criticized the Commission for failing to ask carriers how High-Cost Fund subsidies are actually spent.[206] Wallsten shows that almost 60 percent of High-Cost Fund dollars go to "general and administrative expenses," corporate overhead costs such as planning, government relations, and personnel — expenses that do not directly contribute to network construction.[207] This is perhaps unsurprising: HCF subsidies were traditionally awarded on a cost-plus basis, giving carriers an incentive to inflate costs.[208] Hazlett argues that this is one reason why, as he proves, rural carriers tend to have higher overhead rates than non-rural carriers.[209] Phase II of the Connect America Fund addresses this problem somewhat, by replacing cost-plus funding with either an amount determined by Commission modeling or a reverse-auction mechanism.[210]

More generally, as with Lifeline reforms, the Commission has rushed to transfer funding to broadband networks, without conducting a study of the drivers of the broadband availability gap. There is a wide range of potential explanations why broadband is not available in a particular area, including geography, local consumer purchasing power, and overall demographics. The subsidy would be more effective if the Commission studied these drivers, determined which are most significant, and targeted subsidies to address those. Moreover, these drivers likely differ from location to location, meaning a single economic model is unlikely to be applicable nationwide.

Service Subsidies in Voice and Broadband 41-42 (June 2013) (unpublished manuscript), https://works.bepress.com/scott_wallsten/81/. The authors note that the Commission, in its 2011 Notice of Proposed Rulemaking, asked how it would isolate and distinguish USF funding as the cause of change in deployment from other sources of funding, but failed to answer its own question. *Id.* at 42.

206 *See* U.S. GOV'T ACCOUNTABILITY OFFICE, 2014 REPORT, *supra* note 203, at 20-21.

207 *See* Scott Wallsten, The Universal Service Fund: What Do High-cost Subsidies Subsidize? 14 (Feb. 2011) (unpublished manuscript), https://ssrn.com/abstract=1927933.

208 Hazlett & Wallsten, *supra* note 205, at 31.

209 *See* THOMAS W. HAZLETT, HEARTLAND INST., "UNIVERSAL SERVICE" TELEPHONE SUBSIDIES: WHAT DOES $7 BILLION BUY? 15-16 (2006), https://www.heartland.org/_template-assets/documents/publications/19520.pdf.

210 *See supra* text accompanying notes 143–45.

2. The Subsidy Is Not Technologically Neutral

The Connect America Fund also favors incumbent carriers over rivals, which can dampen the effectiveness of the subsidy. This preference is perhaps understandable in Phase I, because of the need to transition from legacy voice service with minimum disruption to consumers. But in Phase II, this preference is less justifiable. The long-term goal of the program should be to bring broadband service to as many Americans as possible with minimal cost. In at least some locations, a technology other than incumbent wired broadband may be the most efficient way to serve an unserved area.

In the traditional pay television market, for example, it was the advent of direct broadcast satellite service by providers such as DirecTV and Dish Network that brought pay television to rural areas that were uneconomical to serve by traditional cable.[211] Similarly, satellite broadband may serve hard-to-reach areas more effectively than a traditional incumbent. The Commission has noted that satellite "is nearly universally available and can serve any given household."[212] Historically, satellite service suffers latency and capacity challenges compared to wired broadband, which has reduced its effectiveness as a competitive substitute.[213] But satellite performance has improved in recent years, and innovations such as SpaceX's proposed low-earth-orbit satellite service[214] could improve latency and thus increase the potential for intermodal competition — undermining the rationale for favoring incumbents.

3. The Subsidy Lacks a Long-Term Goal

Finally, the Connect America Fund lacks a clearly articulable long-term penetration goal. As noted above, the National Broadband Plan

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[211] *See* Stephen F. Varholy, Comment, *Preserving the Public Interest: A Topical Analysis of Cable/DBS Crossownership in the Rulemaking for the Direct Broadcast Satellite Service*, 7 COMMLAW CONSPECTUS 173, 173 n.2 (1999).

[212] Connect Am. Fund, 25 FCC Rcd. 6657, 6769 (2010).

[213] *See id.* ("[S]atellite capacity does not appear sufficient to serve every unserved household."); Inquiry Concerning Deployment of Advanced Telecomms. Capability to All Ams., 33 FCC Rcd. 1660, ¶ 51 n.148 (2018) ("While satellite operators may be able to offer service to wide swaths of the country, overall satellite capacity may limit the number of consumers that can actually subscribe to satellite service at any one time.").

[214] *See* Mike Snider, *SpaceX Gets Closer to Launching Satellite Broadband Internet Service*, USA TODAY (Feb. 14, 2018, 3:45 PM), https://www.usatoday.com/story/tech/news/2018/02/14/fcc-chairman-oks-spacex-bid-deliver-satellite-broadband-internet-service/337283002/.

estimated that it would cost approximately $24 billion (in 2010 dollars) to bring broadband service to all American households.[215] But the 250,000 hardest-to-reach households represent $14 billion of this amount.[216] This calculation reveals a reality reflected in the telephone High-Cost Fund experience as well: as penetration approaches 100 percent, there are significantly diminishing returns to each additional subsidy dollar. As Wallsten notes, the National Broadband Plan calculated that 96 percent of America already has broadband access (a rate that is even higher if satellite is included).[217] This raises the question: at what point should the program determine that any further improvement in penetration is unlikely to be cost-effective? This is a calculation the Commission has not yet undertaken.

C. E-rate

Numerous scholars have criticized the efficacy of the E-rate program for schools and libraries. As an initial matter, one should ask whether this 1990s program is still relevant. The purpose of E-rate was to assure that every community had at least some broadband connectivity.[218] But this "outpost" Internet model of wiring each community seems less relevant now that Lifeline and the Connect America Fund seek to wire each household. Moreover, like other universal service programs, one can wonder how much E-rate actually contributed to connecting communities that would lack broadband absent the subsidy. A 2001 Department of Education report notes that "[b]y the fall of 2000, almost all public schools in the United States had access to the Internet" and saw improved use of computers in schools, but the report could not definitively attribute these improvements to E-rate.[219] The Office of Management and Budget similarly evaluated E-rate and found that "no data . . . isolates the

[215] FED. COMMC'NS COMM'N, CONNECTING AMERICA, *supra* note 110, at 136.

[216] *Id.* at 138.

[217] *Id.* at 37 (noting ninety-five percent of housing tracts have at least one broadband provider); *Universal Service and Rural Broadband*, TECH. POL'Y INST. (Feb. 12, 2018), https://techpolicyinstitute.org/2018/02/12/universal-service-and-rural-broadband-two-think-minimum-podcast/. The National Broadband Plan defined broadband as 4 Mbps down/1Mbps up. The Commission found that as of December 2016, overall fixed broadband deployment (currently defined as 25Mbps down/3 Mbps up) is 95.6%, with deployment to 81.7% of rural areas and over 99% of urban areas. *Inquiry Concerning Deployment of Advanced Telecomms. Capability to All Ams.*, 33 FCC Rcd. at 1665, 1681.

[218] 47 U.S.C. § 254 (b)(2)-(3), (h)(1)(A)-(B) (2018).

[219] ANNE CATTANGI ET AL., DEP'T OF EDUC., INTERNET ACCESS IN U.S. PUBLIC SCHOOLS AND CLASSROOMS: 1994–2000, at 1, 3 (2001), https://nces.ed.gov/pubs2001/2001071.pdf.

impact of E-rate funding" on classroom penetration.[220] Nor has the Commission shown that spending more money on technology in schools measurably improves student learning.

Moreover, E-rate lacks means-testing, meaning that the subsidy can, and often does, flow to communities wealthy enough to afford broadband without a subsidy. Thomas Hazlett notes that much of E-rate's library and school funding probably replaces other sources of funding that would have provided the same services through other means.[221] This is particularly true in wealthier E-rate communities such as Beverly Hills, California, and Fairfax County, Virginia, where income is well above the national average.[222]

D. Contribution Mechanism

Perhaps most problematically, the combination of Lifeline and Connect America Fund reforms did little to solve the funding crisis that plagues the Universal Service Fund. Total disbursements for the four Universal Service Fund programs reached approximately $8.8 billion in 2016,[223] up from $4.6 billion in 2001.[224] Disbursements are likely to rise further in coming years, as the program ramps up the 50 percent increase in Lifeline support budgeted in the 2016 Lifeline reform order.[225]

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[220] *Detailed Information on the Universal Service Fund E-Rate Assessment*, EXPECTMORE.GOV, https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/assets/OMB/expectmore/detail/10004450.2005.html (last visited Oct. 29, 2018).

[221] HAZLETT, *supra* note 209, at 51-52.

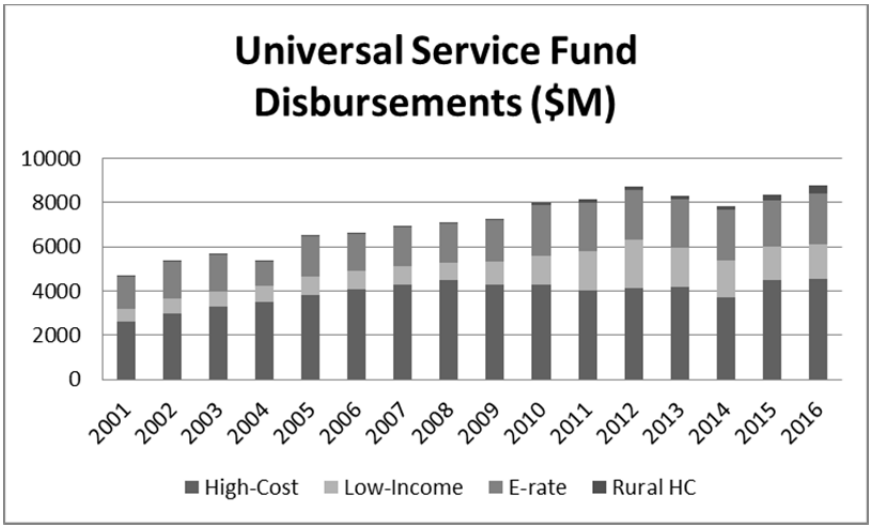
[222] *See id.*

[223] FED. COMMC'NS COMM'N, UNIVERSAL SERVICE MONITORING REPORT, *supra* note 4, at 20.

[224] *See id.* at 19.

[225] The 2016 Lifeline Reform Order established a $2.25 billion annual Lifeline budget. Lifeline & Link Up Reform & Modernization, 31 FCC Rcd. 3962, 3965 (2016). This is a 50 percent increase from the program's total disbursements of $1.5 billion in 2015. *See id.* at 4040.

Figure 2.

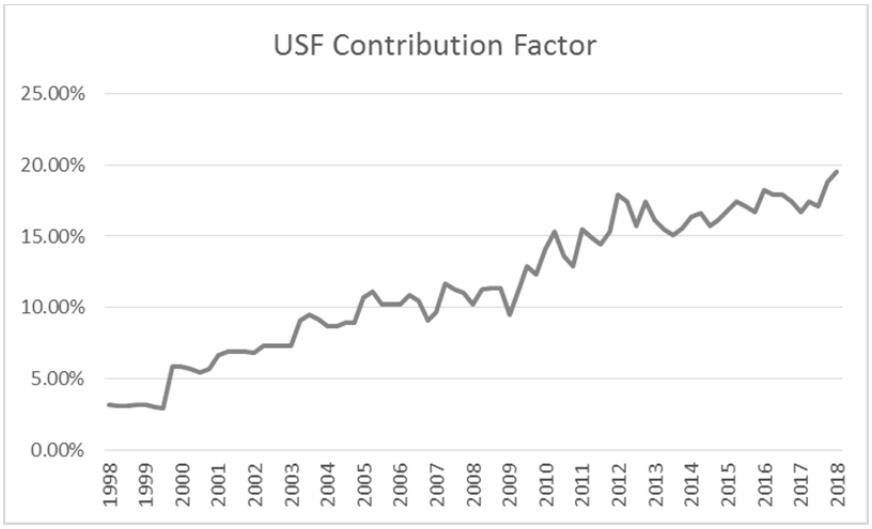


Source: FCC Universal Service Monitoring Report 2016, Tables 1.10 and 1.11

For the past fifteen years, USF costs have been rising, while at the same time the revenue base is falling because people make fewer traditional long-distance calls. As a result, the USF surcharge has grown astronomically, from 3 percent in 1998 to 17.9 percent in the third quarter of 2018.[226]

[226] *See* FED. COMMC'NS COMM'N, PROPOSED THIRD QUARTER 2018, *supra* note 6, at 1 (noting the 2018 figure).

Figure 3.



Source: 1998-2000: FCC Trends in Telephone Service Report
2000-2018: USAC Quarterly Filings

To its credit, the agency has taken some steps to arrest the growth in USF disbursement. Both before and after the 2016 reforms, the Commission enacted measures to root out fraud and abuse in the Lifeline program.[227] And although the Commission anticipates that expanding to broadband will grow the Lifeline budget by 50 percent,[228] it has subjected both Lifeline and the Connect America Fund to annual budget limits, which was not the case in the preceding decade.[229] Unfortunately both are "soft" budgets that the Commission may choose to override and which are subject to no penalty for violation, so it is unclear what practical effect these limits will have on the fund.[230] Moreover, given the declining revenue base for interstate and international telephone calls, it is likely that the contribution factor will continue to rise even if costs are kept under control.

This funding structure is problematic for multiple reasons. First, because the mechanism is self-funding, it is less transparent and not as subject to Congressional oversight to prevent inefficiency, fraud, and

[227] *See Lifeline & Link Up Reform & Modernization*, 31 FCC Rcd. at 3964.

[228] *See id.* at 3965, 4040.

[229] *See id.* at 3965; Connect Am. Fund, 26 FCC Rcd. 17663, ¶ 14 (2011).

[230] *See Lifeline & Link Up Reform& Modernization*, 31 FCC Rcd. at 3965; *Connect Am. Fund*, 26 FCC Rcd. ¶ 18.

abuse. As noted above, the Commission itself determines the quarterly USF surcharge, based upon carrier estimates of anticipated fund expenses and revenue subject to the surcharge.[231] This allows the fund to grow without the oversight and discipline that the congressional appropriations process provides for many other social welfare programs.[232]

Second, the funding mechanism operates as a tax on voice service, which raises the overall cost of the service and thus discourages telecommunications use. As the Federal-State Joint Board on Universal Service has explained, "[l]arger USF contributions increase the risk that telecommunications services will become unaffordable for some, or even a substantial number, of consumers."[233] This effect is counterproductive to the fund's primary purpose, which is to promote use of voice and broadband networks.

III. REFORMING UNIVERSAL SERVICE

The transition from telephone to broadband service provides a golden opportunity to reconsider the universal service program. Rather than adapting a flawed telephone program to fit broadband networks — an effort akin to fitting square pegs in round holes — Congress and the Commission should design a new universal service program for the digital age. This section sketches the contours of such a program.

A. An Activity-Based Approach to Defining Broadband Service

First, policymakers must settle on a uniform definition of "broadband" service. As noted above, the Commission currently uses different definitions in different contexts: Lifeline and the Connect America Fund programs promote broadband plans with speeds of at least ten Mbps,[234] while the Commission's annual Broadband Competition Reports only consider plans offering at least twenty-five Mbps.[235] The Commission justified these benchmarks as plans were

[231] *See supra* text accompanying notes 102–06.

[232] *See generally* Ronald J. Krotoszynski, Jr., *Reconsidering the Nondelegation Doctrine: Universal Service, the Power to Tax, and the Ratification Doctrine*, 80 IND. L.J. 239 (2005) (discussing the taxation and appropriation processes and their limitations).

[233] High-Cost Universal Serv. Support Fed.-State Joint Bd. on Universal Serv., 22 FCC Rcd. 20477, 20483 (2007).

[234] Lifeline & Link Up Reform & Modernization, 31 FCC Rcd. at 3993.

[235] Inquiry Concerning the Deployment of Advanced Telecomms. Capability, 31

widely advertised to, or subscribed to by, large numbers of consumers.[236] But the Commission has never reconciled these different benchmarks.

Rather than choosing somewhat arbitrary figures in ways that are susceptible to manipulation, policymakers should adopt an activity-based model to define broadband service.[237] This approach should flow from the purpose of defining minimum broadband speed: to assess whether a particular network provides consumers with the connectivity necessary to participate in the digital economy.

The Commission should begin by identifying the core activities that it expects a broadband network to provide. Examining this through the universal service lens, the key question becomes: what online services does the Commission seek to make available to low-income households by subsidizing broadband access? This list might include access to email, news, job boards, or digital voice service for easy access to public safety officials. Consistent with former Commissioner Rosenworcel's work on the "homework gap,"[238] it might also include access to educational resources such as school intranets and associated multimedia applications. The agency could develop this list internally or with public participation pursuant to a notice of inquiry.

Once the list is finalized, the Commission should calculate the minimum speed necessary to accomplish these tasks online. This speed would then become the benchmark for "broadband service" used to assess whether a household has access to advanced telecommunications capability. Thus, the benchmark would define a "basic broadband service" for purposes of administering the low-income subsidy. The benchmark may change over time, but only if the agency changes the bundle of activities that it deems essential to participate in digital society, or if identified activities experience a shift in the minimum bandwidth necessary for support.

Proponents of higher thresholds such as twenty-five Mbps often cite the importance of supporting multiple high-definition video streams in each household.[239] As an initial response, it is worth noting that

FCC Rcd 699, 701 (2016) (2016 Broadband Progress Report).

[236] *See, e.g.*, Letter from Tom Wheeler, Chairman, Fed. Commc'ns Comm'n, to Roy Blunt, U.S. Senator (Mar. 1, 2016) (2016 WL 930639) (describing the process by which the 25 Mbps standard was chosen).

[237] I remain indebted to Professor Gus Hurwitz for this idea.

[238] *See, e.g.*, Jessica Rosenworcel, Comm'r, Fed. Commc'ns Comm'n, Statement on Pew Research Center Homework Gap Findings (Apr. 20, 2015) (2015 WL 1809998) (describing the "Homework Gap" as "the cruelest part of the new digital divide").

[239] *See, e.g.*, Pub. Knowledge, Comment on Inquiry Concerning the Deployment of Advanced Telecommunications Capability, GN Docket No. 14-126 (Sept. 4, 2014),

Netflix, the world's leading streaming video service, recommends at least five Mbps to stream its HD offerings.[240] And streaming video is more bandwidth-intensive than other popular online services, like Skype (which recommends 1.2 Mbps for high-quality video calls).[241] Admittedly, Netflix recommends twenty-five Mbps to stream high-resolution 4K video,[242] which then-Chairman Tom Wheeler cited to justify the existing threshold for broadband service.[243] But it is unlikely that the Commission should consider 4K Netflix video streams to be essential to participation in digital society. After all, the traditional Lifeline service supported telephone access but never subsidized cable access, because video service was considered a luxury rather than a necessity. One could argue that the threshold should be sufficient to support some streaming video — if, for example, the agency could show that schools regularly assign streaming video as part of daily homework assignments. But an activity-based model requires the agency to prove the need for an activity to be included in the bundle, rather than simply assuming it to be so.

This activity-based approach would also help improve broadband competition. Households often face a choice among tiers of Internet speeds, without much sense of how much they need to support their monthly habits. An FCC inquiry that estimates the minimum speed necessary to accomplish particular tasks could help inform consumers about which plans best fit their needs, making them more savvy purchasers and pressuring broadband providers to focus on customers' actual needs.

B. Low-Income Assistance

1. Quantifying the Drivers of the Low-Income Broadband Gap

Policymakers should take a more tailored, data-driven approach to the low-income broadband adoption problem. Rather than the current model of simply offering assistance to anyone who qualifies for other

https://ecfsapi.fcc.gov/file/7521827814.pdf (arguing that the 25 Mbps benchmark would allow Americans to experience broadband connectivity fully).

240 *Internet Connection Speed Recommendations*, NETFLIX, https://help.netflix.com/en/node/306 (last visited Oct. 29, 2018).

241 *How Much Bandwidth Does Skype Need?*, SKYPE, https://support.skype.com/en/faq/FA1417/how-much-bandwidth-does-skype-need (last visited Oct. 29, 2018).

242 *See Internet Connection Speed Recommendations*, *supra* note 240.

243 *See* Tom Wheeler, Chairman, Fed. Commc'ns Comm'n, Statement on Inquiry Concerning the Development of Advanced Telecommunications Capability, GN 14-126 (2015), https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-10A3.pdf.

forms of government assistance, policymakers should study the profile of low-income households that currently lack broadband, with the aim of identifying the reasons why these homes are not online. Once the government identifies these drivers, it can design a program with eligibility criteria that focus solely on those low-income households without broadband access, rather than all low-income households broadly. This will reduce one of the most significant criticisms of the Lifeline program discussed above, namely the risk that subsidy dollars will be squandered on households that would have bought Internet access even without the subsidy.[244]

The study should also identify metrics to determine how much of a monthly subsidy these eligible households would need to entice them to purchase a "basic broadband service" plan. This would help answer the question of whether a small subsidy to a large number of recipients, or a larger subsidy to fewer recipients, would be more effective at reducing the broadband gap.[245] The program would identify the amount that a qualifying household should pay for basic broadband service (the "subsidized rate") and set the subsidy at the difference between this subsidized rate and the average price of a basic broadband plan (the "subsidy amount"). The subsidy amount could vary by location, as it may depend on local market conditions. In service areas where one broadband provider has market power, the Commission could prevent price-gouging by limiting the subsidy to an amount sufficient to assure a reasonable rate of return to a reasonably efficient provider in that service area.[246]

2. Empowering Low-Income Consumers

The overarching goal of the low-income subsidy should be consumer empowerment. The primary difficulty facing low-income consumers is lack of purchasing power. The subsidy should narrow the purchasing power gap and allow low-income households to participate as consumers in broadband markets. This would improve competition in broadband markets by increasing the base of

[244] *See supra* text accompanying notes 160–61.

[245] *See supra* text accompanying note 173.

[246] *Cf.* Unbundled Access to Network Elements, 20 FCC Rcd. 2533, 2547-49 (2005) (Order on Remand) (requiring incumbent local exchange carriers to provide unbundled access to network elements that, if denied, would make market entry uneconomic to "a reasonably efficient" LEC, to avoid concern about subsidizing poorly managed carriers).

consumers for whose business broadband providers compete. It also avoids the paternalism inherent in the existing Lifeline program.[247]

To achieve this goal, the low-income subsidy should be competitively neutral, direct, and portable. Indeed, the Obama administration recommended that Lifeline reform adopt these principles to "ensure that low-income Americans can seize the opportunities of the digital age."[248] One solution could be to issue the subsidy in the form of a direct voucher to consumers. The voucher would be set at the amount necessary to allow qualified households to purchase basic broadband service, as defined above.[249] If a customer chooses to purchase basic broadband service, the service provider would be prohibited from charging more than the subsidized rate from the customer, and would remit the voucher to the program for reimbursement. But the consumer would be free to use the voucher instead to purchase a (presumably less expensive) voice-only plan, or as a credit toward a larger bundle of telecommunications services, if the consumer is willing to pay more out-of-pocket. This flexibility extends the promise of at least voice access to those eligible households that cannot afford broadband even at the subsidized rate, without locking in voucher recipients to basic broadband service if they are willing to pay for additional services.

The portable voucher structure gives purchasing power directly to low-income individuals, allowing them to participate in the telecommunications marketplace like any other consumer, and allows the subsidy program to benefit from competition among broadband providers. To attract recipients and avoid customer defection, providers must compete for qualified households on price and service as they do in the marketplace generally. While the program prevents providers from charging *more* than the average market rate for broadband service, providers could charge a *lower* price. Moreover, because the voucher amount depends upon the average market price for broadband service, less efficient providers have incentives to improve their operations while hyper-efficient competitors are rewarded accordingly. And the vouchers would be technologically neutral: any provider willing to offer basic broadband service would be eligible to participate, regardless of the platform through which the customer is served.

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[247] *See supra* text accompanying notes 195–99.

[248] *See* Press Release, White House, President Obama Announces ConnectALL Initiative (Mar. 9, 2016), https://obamawhitehouse.archives.gov/the-press-office/2016/03/09/fact-sheet-president-obama-announces-connectall-initiative.

[249] *See supra* text accompanying notes 237–44.

This approach would be a more market-based approach to universal service, because it empowers low-income consumers with greater purchasing power with which to influence providers competing for their attention. Giving the voucher directly to participants, rather than to carriers, also reduces the incentives for fraud and abuse inherent in the existing Lifeline program, where carriers are incentivized to sign up as many Lifeline customers as possible and therefore households can (inadvertently or intentionally) receive multiple subsidies in violation of the one-per-household rule. This voucher structure would also bring the subsidy program in line with other government benefit programs that seek to increase purchasing power and market freedom by low-income recipients, such as SNAP and MedicAid.

3. Addressing Other Drivers of Low-Income Nonadoption

But it is insufficient simply to provide assistance with monthly access bills. As the Pew survey results suggest, monthly access plan costs are only one driver of broadband non-adoption.[250] A comprehensive approach to close the low-income broadband gap would require attention to the other drivers as well: equipment costs and digital literacy.

In addition to the monthly cost subsidy, an effective low-income assistance should include ways for low-income recipients to acquire computers and other equipment they need to get online. This can be done with a one-time equipment subsidy for new participants (perhaps drawing appropriate lessons from the Commission's Link-Up program to fund installation costs for telephone service), or by allowing low-interest financing options for participants to purchase equipment. And the program should also include digital literacy outreach programs in local communities, so those who are unconvinced or uncertain about Internet use can gain a greater appreciation of the importance of connectivity to everyday life.

4. Shifting Away from the Federal Communications Commission

Finally, Congress should consider vesting oversight of this low-income assistance program in an agency other than the Federal Communications Commission. The current Universal Service Fund focuses primarily upon compensating carriers, in part because carriers represent the agency's primary area of institutional competence. USAC sets the quarterly contribution rate based on carriers' estimates of

[250] *See supra* text accompanying notes 185–90.

need. Carriers recruit Lifeline participants and confirm eligibility, and the Commission issues Lifeline payments directly to carriers to cover the cost of serving the Lifeline population. It is notable that the Lifeline consumer does not interface directly with the agency at any step of the process.

It may be that the voucher program would be better administered by a different agency that better understands the issues facing those in poverty. The Department of Health and Human Services, for example, describes itself as "U.S. Government's principal agency for protecting the health of all Americans and providing essential human services, especially for those who are least able to help themselves."[251] One of the agency's strategic goals is to "Strengthen the Economic and Social Well-Being of Americans Across the Lifespan," by "[e]ncourag[ing] self-sufficiency and personal responsibility, and eliminate[ing] barriers to economic opportunity" and "[m]aximiz[ing] the independence, well-being, and health of older adults, people with disabilities, and their families and caregivers."[252] A voucher-based Lifeline program would fit comfortably within the department's efforts to pursue these objectives and would vest administration of the initiative in an agency experienced with, and knowledgeable of, the difficulties faced by low-income Americans that the program seems to serve. Congress may ultimately decide not to shift the program to HHS or another agency, but this decision should be based upon a rational assessment of the Commission's strengths and weaknesses compared to those of other potential departments.

The Commission has explained that "[t]he purpose of the Lifeline program is to provide a hand up, not a hand out, to those low-income consumers who truly need assistance connecting to and remaining connected to telecommunications and information services. The program's real success will be [made] evident by the stories of Lifeline beneficiaries who move off of Lifeline because they have used the program as a stepping stone to improve their economic stability."[253] By converting Lifeline into a targeted, direct, portable voucher administered by an agency whose core competencies include helping low-income Americans, the government can focus on those who truly need assistance and enhance recipients' purchasing power while treating them with the dignity implied by this mission statement.

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[251] *Introduction: About HHS*, U.S. DEP'T OF HEALTH & HUM. SERVS., https://www.hhs.gov/about/strategic-plan/introduction/index.html (last visited Oct. 29, 2018).

[252] *Id.*

[253] Lifeline & Link Up Reform & Modernization, 30 FCC Rcd. 7818, 7820 (2015).

C. Solving the Availability Gap

A more targeted subsidy will help close the broadband adoption gap within low-income communities where broadband is currently available. But it will not solve the separate problem of closing the broadband availability gap in the areas of the country where broadband networks are not available. To solve this problem, a separate program akin to the Connect America Fund is necessary.

But what the Commission treats as one broadband availability gap is in fact comprised of two distinct territories. In some unserved areas, the economics are such that network installation costs make market entry uneconomical, but if those one-time construction costs were covered, the network could cover its monthly operating expenses from subscription revenue. In other areas, the hardest-to-reach areas, even providing the network for free is insufficient, as subscription revenue would be insufficient to cover the provider's monthly operating expenses.

To narrow the broadband availability gap, the government should prioritize territories in the former category. Consistent with the National Broadband Plan's recommendations,[254] the government should focus the Connect America Fund on one-time network construction costs and accelerate the move away from the ongoing carrier subsidies that are legacies of the High-Cost Fund. The funds should be tied to demonstrable construction benchmarks and subject to forfeiture if the recipient does not make substantial progress toward its buildout objectives. Subsidizing the construction of sustainable networks would most efficiently leverage the fund's limited dollars to provide connectivity to as many households as possible. It would also avoid the problem of carriers using subsidies to fund general expenses rather than network buildout.[255]

To distribute the funds, the government should rely upon the reverse-auction mechanism that the Commission adopted to allocate Connect America Fund Phase II funds that were refused by the incumbent. For each given geographic region, the fund administrator should identify unserved areas and solicit bids from carriers as to the amount of subsidy the carrier would accept to serve those areas.[256] Unlike Connect America Phase II, these bids should be technologically

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254 *See* FED. COMMC'NS COMM'N, CONNECTING AMERICA, *supra* note 110, at xiii.

255 *See supra* note 207 and accompanying text.

256 *Cf.* Connect Am. Fund, 26 FCC Rcd. 17663, ¶¶ 23-24 (2011) (indicating that the Connect America Fund will only subsidize extremely high-cost areas where federal funding is necessary).

neutral and should be awarded without favoring the incumbent carrier. If the incumbent is the most efficient provider to close the availability gap in a region, then it will win the reverse auction. The winning bidder will receive a subsidy in the amount of the winning bid and will be required to provide basic broadband service throughout the service area within a fixed number of years.

But this Article recommends that the auctions be administered by state public utility commissions rather than by the FCC. As noted above, there exists a wide range of potential factors contributing to the availability gap. The challenges to rural broadband construction are myriad and diverse, and the approach that works in flat Kansas may not be readily portable to mountainous West Virginia. The Connect America Fund envisioned a Commission-led study of all these areas to determine the amount of money to offer incumbent carriers in each state. But the incumbents refused subsidies in multiple states,[257] suggesting that the centralized study approach was less than ideal. Instead of pursuing this model, Congress should allocate funds in the form of block grants that states can use, perhaps in combination with state funds, to conduct reverse auctions and narrow their respective availability gaps.

The shift in administration to state public utility commissions is not as revolutionary as it may seem. In fact, in January 2017 the Federal Communications Commission granted a waiver that allowed New York to administer its CAF Phase II funds in coordination with the state's own New NY Broadband Program rather than having to follow Connect America Fund guidelines.[258] Other states have expressed interest in receiving similar waivers.[259] Even absent waivers, CAF Phase II awarded funding on a state-by-state basis, meaning the program recognizes states as the appropriate level to disburse the subsidies.

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[257] *See* Joan Engebretson, *Upcoming CAF Reverse Auction Puts Markets in 20 States Up for Grabs for Broadband Funding*, TELECOMPETITOR (Sept. 1, 2015, 10:33 AM), http://www.telecompetitor.com/upcoming-caf-reverse-auctions-puts-markets-in-20-states-up-for-grabs-for-broadband-funding/.

[258] Connect Am. Fund, 32 FCC Rcd. 968, 968 (2017) (ETC Annual Reports & Certifications).

[259] *See, e.g.*, Letter from Peter Larkin, Chairman, Mass. Broadband Inst. and Karen Charles Peterson, Comm'r, Mass. Dep't of Telecomms. and Cable, to Marlene H. Dortch, Sec'y, Fed. Commc'ns Comm'n (Jan. 9, 2017), https://ecfsapi.fcc.gov/file/101091533221284/MDTC%20MBI%20Joint%20Ex%20Parte%20on%20CAF%20Funding%20%201_9_17.pdf. (asking that the Commission provide funding to complement the Massachusetts state-funded broadband programs).

There are myriad reasons to vest administrative oversight in state public utility commissions. First, the challenges to availability may differ significantly by state, turning on local knowledge of conditions within a state that state officials are better positioned than their federal counterparts to know and understand.[260] State public utility commissions also have significant expertise in telecommunications regulation, having been responsible for regulating intrastate communications in the pre-Internet era.[261] This expertise has gone underused in recent years, as the distinction between local and interstate telephone markets has disappeared and the federal government largely preempted state authority to regulate broadband networks.[262] Moreover, most states currently administer their own state-level universal service programs.[263] So vesting administration at state levels can leverage existing experience and complement ongoing state initiatives. State officials are closer to the constituents they regulate and therefore are more likely to respond to local concerns, suggesting they are more motivated to monitor compliance with buildout projects and move quickly to completion.[264]

State-level administration of block grant funds may also help develop new and better ways to solve the availability gap.[265] The decentralization of authority promotes regulatory diversity, allowing states to serve as "laboratories for experimentation to devise various solutions where the best solution is far from clear."[266] Allowing states leeway to determine how best to allocate buildout funds, and on what conditions, may yield better solutions than the default regime

260 *See* Lyons, *supra* note 35, at 386, 424-25 ("The federal government is in the best position to regulate issues that, if left to the states, would create substantial spillover effects that could unreasonably disrupt national economies of scale. By comparison, state regulators are best qualified to make decisions that turn upon local knowledge.").

261 *See id.* at 386-395 (discussing history of state telecommunications regulation).

262 *See, e.g.*, Restoring Internet Freedom, 33 FCC Rcd. 311, 426-29 (2018) ("[R]egulation of broadband Internet access service should be governed principally by a uniform set of federal regulations, rather than by a patchwork that includes separate state and local requirements.").

263 *See* SHERRY LICHTENBERG, NAT'L REGULATORY RESEARCH INST., STATE UNIVERSAL SERVICE FUNDS 2014, at 1-2 (2015), http://nrri.org/download/nrri-15-05-state-usf/ (finding that "[i]n all, 45 states provide some form of State universal service support in addition to the Federal funds," and nearly half of those states provide high-cost support in particular).

264 *See* Lyons, *supra* note 35, at 424.

265 *See id.*

266 *See* United States v. Lopez, 514 U.S. 549, 581 (1995) (Kennedy, J., concurring).

currently administered nationwide (except in New York) under the Connect America Fund.

For those hardest-to-reach areas, it may be necessary to recognize that providing basic broadband service may simply not be cost-effective. The National Broadband Plan hinted at this, noting that of the $24 billion required to close the broadband availability gap, $14 billion would go to wire the hardest 250,000 homes.[267] The fact that a community's telecommunications costs are unusually high is not, alone, a reason to subsidize them. There are a wide range of goods integral to modern life whose costs vary dramatically by location — for example, housing, food, or gasoline. Yet few suggest that because a two-bedroom apartment is more expensive in Manhattan than in Houston, we should provide a federal housing subsidy to all Big Apple residents. Similarly, at some point the government must refuse to subsidize what is effectively a lifestyle choice by those who choose to live in a region with an extremely high cost of service. Given the near-universal availability of satellite service, the government should conclude that the difference between satellite-quality service and basic broadband service is not sufficiently wide to require significant and ongoing subsidies to these hardest-to-reach communities.

D. E-rate

As noted above, the E-rate program has outlasted its usefulness. With the Connect America Fund focused on bringing basic broadband service to each household, the wiring of all libraries and schools seems somewhat duplicative.[268] Given Hazlett's analysis showing that this funding largely displaces local expenditures rather than increasing connectivity in America,[269] Congress should decide that broadband access is no more integral to a library or school's mission than any other part of the institution's operation. The costs of this access should be incorporated into the institution's budget and paid the same way all other expenses are, so the local community can make an accurate assessment of whether its institutions require such service, and at what level or cost.

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[267] *See* FED. COMMC'NS COMM'N, CONNECTING AMERICA, *supra* note 110, at 136-38.

[268] *See supra* text accompanying notes 218–21.

[269] *See* HAZLETT, *supra* note 209, at 51-52.

E. Contribution Reform: Funding the Future of Universal Service

Finally, Congress should abandon the fund's increasingly arcane contribution methodology. The simplest and most elegant solution to the contribution problem is simply to fund universal service through a line item in the federal budget like most other entitlement programs. Other proposed solutions, such as a tax on telephone numbers or IP addresses, while likely an improvement over the existing revenue-based regime, suffer from similar problems as the current methodology: they are underinclusive and encourage strategic behavior by consumers, while discouraging the very services the program seeks to subsidize.

Through the appropriations process, Congress can bring some much-needed fiscal discipline to the Universal Service Fund. The program would be more transparent, as funding would be set by congressional deliberations rather than the murky, semi-private Universal Service Administrative Company.[270] Because taxpayer dollars are at stake, Congress would be more likely to use inquiries and oversight hearings to monitor the program for fraud and abuse. The program would be subject to a hard budgetary cap on annual expenditures, which would require the Commission to wring inefficiencies out of the system in order to better serve the public within congressional fiscal constraints. And it would provide a greater measure of democratic accountability. As Krotoszynski has noted, the Constitution provides special restrictions on the taxing power (such as the requirement that all revenue bills originate in the House) because the framers were particularly concerned about maintaining democratic control and accountability over revenue and appropriations powers.[271] The current surcharge functions as a tax, raising revenue for the purpose of pursuing the fund's myriad objectives, but without the procedural safeguards that protect against abuse. Subjecting the fund to the appropriations process would shed some important light on the program and improve both its efficiency and legitimacy in the eyes of the public.

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[270] *See generally* Jonathan S. Marashlian et al., *The Mis-administration and Misadventures of the Universal Service Fund: A Study in the Importance of the Administrative Procedure Act to Government Agency Rulemaking*, 19 COMMLAW CONSPECTUS 343 (2011) (criticizing FCC delegation of day-to-day operations to USAC).

[271] *See* Krotoszynski, *supra* note 232, at 258.

CONCLUSION

America's migration to broadband networks presents a once-in-a-generation opportunity to bring transformational change to an outdated, mismanaged assistance program. While the Commission has attempted to bring about this change, its efforts are unlikely to significantly narrow America's broadband gap. Policymakers should capitalize on this brief window of opportunity by adopting a direct, portable voucher program that helps low-income households participate as equals in the market for telecommunications services. And it should offer states block grants to build out underserved areas through a reverse auction mechanism that extends broadband access to new households as efficiently as possible. Finally, it should replace the arcane contribution mechanism with a more stable, transparent funding source that does not overly burden broadband consumers and providers.