

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

<b>In the Matter of</b>	)	
	)	
<b>The State of Competition in the Communications Marketplace</b>	)	<b>GN Docket No. 24-119</b>
	)	

**REPLY COMMENTS OF  
PUBLIC KNOWLEDGE AND OPEN TECHNOLOGY INSTITUTE AT NEW AMERICA**

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## **I. Summary**

Public Knowledge (“PK”) and the Open Technology Institute at New America (collectively “Public Knowledge, et al.”) submit these reply comments in response to the Federal Communications Commission’s (the “Commission” or “FCC”) Public Notice seeking input to inform the Commission’s *2024 Communications Marketplace Report*. Public Knowledge, et al. urges the Commission to continue to foster competition in order to reduce consumer harm, equitably close the digital divide, and create and sustain a diverse media ecosystem. Additionally, we implore the Commission to create policies that drive competition in order to improve innovation and enhance democratic participation through today’s most powerful mediums. We also reiterate our perspective that the risks of little to no competition in the communications marketplace can leave consumers with higher prices, lower quality of service, and fewer opportunities to fully participate in 21st century society.

## **II. The Commission Must Affirmatively Promote Competition to Reduce Consumer Harm**

Public Knowledge, et al. firmly assert that promoting competition is key to promoting freedom of expression for all on affordable communications platforms. As new technologies become increasingly integrated into our daily experiences, the way we consume products and information is changing. Our federal agencies must regularly reflect on what competition means in the 21st century, and make choices that continue to foster a competitive marketplace for consumers. Our nation’s antitrust and regulatory authorities must work collaboratively to ensure that companies are competing on the merits instead of using anticompetitive practices to get ahead of rivals which inevitably harms consumers. Consumers continue to feel the ill effects of a deeply concentrated communications market.<sup>1</sup> Four-firm competition, data roaming rules, spectrum screens, and other regulations have proven to benefit consumers. Since the

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<sup>1</sup>Public Knowledge, “Public Knowledge Urges Strict Scrutiny of \$4.4 Billion T-Mobile/U.S. Cellular Deal Eroding Wireless Competition,” (May 28, 2024). <https://publicknowledge.org/public-knowledge-urges-strict-scrutiny-of-4-4-billion-t-mobile-u-s-cellular-deal-eroding-wireless-competition/>.

spectrum screen's adoption in 2004, the Commission has structured it to support three equal-sized providers per market.<sup>1</sup> As both traditional antitrust analysis and the Commission's own experience has demonstrated, consumers need a minimum of four national providers to see vigorous competition between providers.

Likewise, there are significant barriers to market entry by new competitors, such as access to spectrum. As a result, consumers — particularly rural and low-income consumers, suffer from higher prices, lower service quality, and a lack of innovation.<sup>2</sup> As the FCC and Congress have stressed, the FCC's role is not simply to preserve existing competition. The Commission has a responsibility to affirmatively promote access to diverse and competing sources of news and opinions, and prevent levels of concentration that would be acceptable under antitrust.<sup>3</sup>

### **III. The Wireless Industry is Less Competitive Today**

The US currently has three major national wireless carriers: AT&T, Verizon, and T-Mobile. These carriers represent close to 99 percent market share.<sup>4</sup> Smaller carriers often do not have contracts with large handset manufacturers like Apple and Samsung nor do they have the ability to operate financing plans. This means small carrier users must buy phones completely upfront, choose a phone that might not be their preference, or switch to one of the major national wireless carriers. As the Commission has noted, “Smaller service providers have asserted that exclusive agreements between handset manufactures and the larger service providers put them at a competitive disadvantage because they are sometimes unable to

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<sup>2</sup> Mike Dano, “U.S. Mobile Prices Sky High After T-Mobile's Sprint Buy – Report,” Light Reading (May 14, 2024). <https://www.lightreading.com/operations/us-mobile-prices-sky-high-after-t-mobile-s-sprint-buy-report?>

<sup>3</sup> *Turner Broadcasting System, Inc. v. FCC*, 512 U.S. 622 (1994).

<sup>4</sup> Wireless Subscriptions market share by carrier in the U.S., from 2011 to 2024, by quarter, *Statista*, <https://www.statista.com/statistics/199359/market-share-of-wireless-carriers-in-the-us-by-subscriptions/>.

obtain the newest handsets.”<sup>5</sup> Exclusive agreements between handset manufacturers and large service providers situationally incline consumers to “choose” a large service provider over a small one.

Following the initial redirection of consumers, phone locking further reduces meaningful choice in mobile wireless services. The practice discourages customers from switching among the major and smaller providers. Accordingly, as PK et al. has previously requested, the Commission should further report on phone locking in more detail in its Communications Marketplace Report.<sup>6</sup> Additionally, PK et al., urge the Commission to develop policies that include mandatory phone unlocking as a competitive measure in the mobile wireless service marketplace.

#### **A. Phone Locking Is a Barrier to Competition and Costs Consumers Money**

A locked phone is artificially restricted to just one carrier, not because of technical incompatibility, but from a software lock.<sup>7</sup> Historically, phone locking was born alongside device subsidies.<sup>8</sup> The practice of locking was justified as a tool to prevent a user from signing up for a service, obtaining a “subsidized” phone up front, and then canceling and keeping the phone, which would cause the carrier to lose money on that customer. It was also a powerful tool for incumbents to slow the redirection of customers to other carriers. It is instructive to note that United Kingdom regulator, Ofcom, found, “more than a third of people who decided against switching said having to get a handset unlocked put them off changing

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<sup>5</sup> 20th Mobile Report para 64.

<sup>6</sup> Pub. Knowledge and Open Tech. Inst. Comments on State of Competition in Communications Marketplace (August 1, 2022), [https://publicknowledge.org/wp-content/uploads/2022/08/PK\\_OTI\\_CR\\_Communications\\_Marketplace\\_Comments\\_August\\_2022.pdf](https://publicknowledge.org/wp-content/uploads/2022/08/PK_OTI_CR_Communications_Marketplace_Comments_August_2022.pdf).

<sup>7</sup> Phone locking is not referring to Apple’s Activation Lock, which prevents iPhones associated with an Apple account from being used with another account until a previous user has authorized it – which many users forget to do, causing difficulties in secondary markets. See Joseph Cox, *The Underground Company that Hacks iPhones for Ordinary Consumers*, MOTHERBOARD, (March 31, 2022). Phone locking is also not “jailbreaking,” which allows phone users to bypass the technical locks on their phones that limit what software they can run.

<sup>8</sup> Of course, device subsidies were not really subsidies: Wireless carriers are not in the business of losing money on customers, and “subsidies” merely hide the cost of the device in the monthly service cost. The only subsidy was paid by users with lower-cost phones, who paid the same monthly bill as users with higher-end models.

provider.”<sup>9</sup> In addition to reducing churn between major carriers, phone locking also hampers the emergence of new smaller competitors of all kinds, such as cable companies and MVNOs.

Even carriers eventually realized that this was a flawed system that reduced consumer choice and began moving away from this subsidy model.<sup>10</sup> Nevertheless, the practice of locking users into contracts and using software locks to artificially prevent a phone from working with a competing service provider with which it is otherwise compatible continues in the US marketplace even as countries like Canada and the United Kingdom ban the practice entirely.<sup>11</sup>

As the practice persists, it disproportionately harms low-income consumers who must shoulder the inconvenience of switching plans to save money. The affordable options offered by widespread availability of handsets in the secondary market are reduced in a market that practices phone locking. In a time of increased inflation, shipping delays, and supply constraints, such as chip shortages, the wide availability of handsets that are accessible, affordable, and do not need to be shipped halfway across the world is beneficial to all consumers. With more unlocked phones in the market, consumers will not just save money on handsets but they will also benefit from increased competition among carriers.

### **1. Lack of Standardized Mobile Number Portability Is A Barrier to Competition and Costs Consumers Money**

Mobile Number Portability (“MNP”) allows users to transfer their phone number between mobile wireless service providers. The process of MNP, in contrast to exclusive handset agreements and phone locking, promotes the ability for users to have meaningful choice among the already limited number of

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<sup>9</sup> Ofcom, “Mobile Companies Now Banned From Selling Locked Handsets” (December 17, 2021). <https://www.ofcom.org.uk/news-centre/2021/mobile-companies-now-banned-from-selling-locked-handsets>.

<sup>10</sup> Phil Goldstein, “AT&T’s Stephenson: Device subsidy model is ‘fundamentally changing’, Fierce Wireless” (March 6, 2014). <https://www.fiercewireless.com/wireless/at-t-s-stephenson-device-subsidy-model-fundamentally-changing>.

<sup>11</sup> Jon Porter, “UK to ban sale of carrier-locked phones from December 2021” (October 2020), *The Verge*. <https://www.theverge.com/2020/10/27/21535957/uk-ofcom-locked-carrier-phone-ban-ee-vodafone-t-esco-mobile>.

providers available in the market. However, incumbent providers can exploit the lack of standardized procedure of MNP to retain customers on the basis of administrative burden rather than superior service. Even without a specific intent to frustrate consumer choice, the process can be time consuming and confusing because of the lack of a standard industry practice and therefore it can discourage consumers from changing carriers.

Generally, users need to know a combination of the following items in order to port their phone number: the phone number itself, name on the account, billing address on the account, the account number, the account PIN, and the porting PIN.<sup>12</sup> As is detailed below, there are challenges to some of these items which make it administratively difficult for consumers to facilitate MNP; Standardizing the process is key to lifting the administrative burden placed on consumers.

***a. Porting PINs need defined terms of validity***

Today, carriers define the length porting PINs may be valid. In practice, for instance, Boost Mobile's porting pins may be valid for 72 hours when AT&T porting pins may be valid for as short as 48 hours. The variety in validity lengths is challenging for customers to track and manage. Thus, PK et al. urges the Commission to further study and develop rules which include a standardized minimum amount of time providers must permit the validity of a porting PIN. Specifically, at least a three-day minimum porting pin lifecycle that matches the service level agreement between consumers and their carriers should be implemented.

***b. Zip Code Requirements are Disproportionately Burdensome on Low-Income Individuals***

Incumbent releasing practices often require customers to know the zip code associated with the account they wish to switch. However, this requirement raises barriers for customers who do not know their zip code, move frequently, list the store address as their own, or simply do not have a zip code. These

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<sup>12</sup> The account PIN is used to secure and verify access to the account with a service provider generally. The porting PIN is specific to the process of MNP; both PINs must be known by the customer seeking to switch providers.

customers tend to be low-income individuals, which includes those who were recipients of the Commission's Affordable Connectivity Program. This is particularly burdensome for unhoused individuals who may not have a fixed zip code. PK urges the Commission to develop rules which prohibit the ability for carriers to require customers to know the zip code associated with the address as it functions as an administrative burden often carried by the low-income customers.

## **2. Technological Changes such as an increased Adoption of eSIMs can either Enhance or Inhibit Competition**

The wireless industry has long used physical SIM cards to store subscriber information and allow a phone to connect to a particular network. When users get a new phone, in theory, they can simply place the SIM card from their old phones into their new ones to get them connected. Or, when traveling internationally, users can temporarily swap their US SIM cards for a foreign one to avoid roaming charges. While simple in practice, physical SIM cards have drawbacks. SIM cards come in different sizes, and the card from one phone may not work in another without an adapter, or at all. SIM cards are small, and can be hard to remove and install, and are easy to lose or damage. The problems are magnified with each phone: companies managing large fleets of corporate phones, for instance, may find physical SIM cards difficult to work with.

Embedded SIMs, or eSIMs, are intended to solve these problems. With eSIMs, for instance, a company could more easily move its phones from one carrier to another. Customers do not need to keep track of or wait for physical SIM cards, and they are not easy to misplace. eSims are built into the phones themselves, and can be reprogrammed with new carrier information remotely.

While rising in popularity, one drawback of eSims is that they are not yet as widely supported as physical SIM cards.<sup>13</sup> And, while eSims may be more convenient for some users, for others, physical

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<sup>13</sup> See Emma Lunn, "A guide to eSIMS", *Forbes Advisor* (March 1, 2024) (eSIMs are "still quite some way off" from completely replacing plastic SIMs. Currently, "eSIMs are more commonly used as the second SIM in a dual-SIM handset."), <https://www.forbes.com/uk/advisor/mobile-phones/esims/>.



SIMs may be more convenient. The specific details of how eSIMS are implemented can have major effects on competition. Technologies developed by major carriers, for major carriers, tend to serve the interest of major carriers – often at the expense of public interest. As PK previously highlighted, in 2019, following a business request letter from GSMA,<sup>14</sup> the Department of Justice (DOJ) expressed “concerns” to GSMA that its eSIM standards-setting process “could be considered an agreement among competitors to limit options available in the market in such a way as to benefit the incumbent operator.”<sup>15</sup> The DOJ further stated that it:

has significant concerns that GSMA and its operator members used an unbalanced standard setting process, with procedures that stacked the deck in their favor, to promulgate an RSP Specification with self dealing provisions designed to enhance or maintain the incumbent operators’ competitive position by entrenching network locking practices and otherwise deterring potentially disruptive competition. The resulting rule is especially concerning because it appears to blunt the competitive impact of a new technology – eSIM – that should facilitate easier consumer switching among operators.<sup>16</sup>

This example shows how the competitive potential of a technology cannot be assessed in a vacuum. Many technologies have the potential to enhance competition but not all technologies live up to that promise. The details matter because no matter how promising a technology may seem, licensing issues, restrictions, the standards-setting process, and other factors can mean that it enhances the market power of incumbents. The Commission should further explore how technological changes that are complex, time-consuming, and require expertise across a wide variety of domains inhibit competition.

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<sup>14</sup> Letter from GSMA to DOJ, July 25, 2019, <https://www.justice.gov/atr/page/file/1221331/download>.

<sup>15</sup> Letter from U.S. Department of Justice to GSMA, November 27, 2019, <https://www.justice.gov/atr/page/file/1221321/download>.

<sup>16</sup> *Id.*

**B. The Commission Should Analyze Whether Current Phone Unlocking and Standardized MNP Practices Serve the Public Interest, and Add More Detail on These Issues to Its Communications Marketplace Report**

Section 401 of the RAY BAUM’S Act of 2018 directed the FCC to consolidate some of its competition reports into a single biennial Communications Marketplace Report.<sup>17</sup> Prior to this the Commission issued annual Mobile Wireless Competition Reports.<sup>18</sup> However, the Communications Marketplace Report tracks handset-related aspects of competition much less thoroughly than the Mobile Competition reports did. Moreover, the decline in the number of national carriers from four to three, the emergence of nascent competition from variety of fledging cable and other MVNO mobile carriers, and the substantial increase in the cost, capability and useful life of mobile handsets all suggest that phone locking is far *more* relevant to marketplace competition today than years ago.

As PK has requested previously, the Commission should track in more detail the effect of handsets on the Communications Marketplace, beginning with the 2024 report. Among other things, it should determine:

- Whether eSIM has enhanced or degraded wireless competition, particularly whether it is an obstacle to users who would otherwise switch to small carriers;
- Whether the practice of phone locking drives users to buy new phones rather than bringing their old phones to new networks, or buying used phones on secondary markets;
- How many locked versus unlocked, and new versus used, phones are in use in all US wireless networks;
- Whether major carriers continue to have better access to premium, high-demand smartphones, and the effects this may have on competition;
- Whether the wireless industry’s 2013 phone unlocking commitments<sup>19</sup> have been sufficient to mitigate the consumer harms caused by phone locking to begin with;
- Whether the lack of standardized processes in phone number portability benefits major providers at a detriment to consumers.

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<sup>17</sup> Ray Baum’s Act of 2018, Pub. L. No. 115 - 114, 132 Stat. 348 (2018).

<sup>18</sup> FCC, Mobile Wireless Competition Reports, <https://www.fcc.gov/reports-research/reports/mobile-wireles-competition-reports>.

<sup>19</sup> CTIA, Consumer Code for Wireless Service, <https://www.ctia.org/the-wireless-industry/industry-commitments/consumer-code-for-wireless-service>.

The identification of structural barriers to competition is the first step to eliminating them. Reporting on the above-stated items and other factors will not just better illuminate the state of the mobile wireless service marketplace but will be useful in justifying phone unlocking and standardized MNP process rules.

#### **IV. Commission Policies Must Foster Competition in the Video Marketplace to Promote Independent and Diverse Programmers**

Imbalanced bargaining power subjects independent programmers to harmful market conditions which severely limits their ability to compete within the video marketplace. Due to the monopsony power of multichannel video programming distributors (“MVPDs”), independent programmers are forced to succumb to unfavorable contract terms or are prevented from gaining carriage altogether. These independent programmers ensure the video marketplace reflects a diversity of viewpoints for all audiences, bolstering competition between content creators. Enhancing such competition and diversity in the video marketplace also allows underrepresented communities to see themselves represented through programming created by new voices, subsequently spurring incumbents to compete for those viewers.

##### **A. MVPDs Can Exert Monopsony Power Over Independent Programmers**

A monopoly occurs when a single seller of a good or services possesses enough market power such that a raise in prices is not unprofitable. However, a monopsony occurs when a single buyer has the leverage to force sellers to comply with decreased pay for goods or services, or other onerous terms. Therefore, contracts with monopsonists are not mutually beneficial agreements, but rather one party “agreeing” to the disadvantageous terms of the monopsonist since the only alternative is financial ruin. MVPDs can exert monopsony power over independent programmers in various ways, preventing them from attaining carriage or doing so under unfavorable contract terms—most favored nation (MFN) clauses and alternative distribution method (ADM) provisions.

## **1. Preventing Carriage for Independent Programmers**

By exerting their monopsonist power, MVPDs can prevent independent programmers from accessing carriage in the first place. First, vertically integrated cable companies that produce their own programming have an incentive to favor that programming over similar programming from independent programmers. Many programmers have alleged that they have faced discrimination in this regard.<sup>20</sup> Second, some MVPDs will not carry a programmer unless it is already carried by a particular other MVPD, or unless it has already reached a certain level of distribution, creating substantial barriers to entry in terms of nationwide carriage. Third, large cable distributors typically enjoy “volume discounts” on the programming they carry. While in an electronic age it is not necessarily cheaper for a programmer to supply a larger cable company with programming instead of a number of smaller cable companies (apart from transaction costs), larger distributors are able to use their bargaining power (and frequently, their status as must-have distribution platforms) to pay lower rates than other distributors. The harmful effects of anticompetitive volume discounts that result from this kind of leverage can hurt independent programmers, particularly those of diverse or niche interests. This may undermine their business or keep them off the cable dial entirely. Other independent programmers may be tempted to sell to larger conglomerates in a tit-for-tat of consolidation. Such an outcome would be contrary to the Commission’s established goal of ensuring that “no single operator can, by simply refusing to carry a programming network, cause it to fail.”<sup>21</sup>

## **2. Subjecting Independent Programmers to Unfavorable Terms**

By exerting their monopsonist power, MVPDs can also enforce troubling “most favored nation” (MFN) clauses. MFN clauses state that an MVPD who is able to demand such a provision automatically

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<sup>20</sup> See, e.g., The Tennis Channel, Inc. Program Carriage Complaint, File No. CSR-8258-P (July 5, 2010). (Tennis Channel filed a program carriage complaint alleging that Comcast placed its programming in a less favorable tier than similar programming that was vertically integrated with the MVPD).

<sup>21</sup> See, e.g., Cable Horizontal and Vertical Ownership Limits, Fourth Report & Order and /further Notice of Proposed Rulemaking, 23 FCC Rcd 2134 § 40 (2008).

benefits from terms another distributor is able to secure—terms that might not only relate to programming costs but business models. MFNs can be used to simply assure that a particular MVPD gets the best possible deal in terms of the price paid for programming on a per-subscriber basis. Most troubling are MFNs that keep the marketplace from evolving by preventing programmers from offering video in new ways and through new services, thereby keeping independent networks off of online platforms entirely.<sup>22</sup> Because of these kinds of terms, an independent programmer might not be able to give a special break to a new entrant or to grant an online provider on-demand access to programs without also granting these rights to an incumbent cable company. Further, as it relates to incumbent MVPDs, a contract negotiation providing for broader distribution or a better channel lineup position in return for a lower per subscriber rate may be impossible to achieve due to MFNs which would provide the same low rate to other MVPDs without the obligations benefiting the independent network.

Many independent programmers have highlighted the frequent use of MFNs and ADMs by MVPDs.<sup>23</sup> Independent programmer, beIN Sports LLC, states quite explicitly that “its efforts to grow and serve its historically underserved audience are frequently hampered by contractual restrictions in the form of contractual most favored nations clauses.”<sup>24</sup> Independent programmers also commented on the common use of ADMs in carriage contracts with MVPDs.<sup>25</sup> Programmers uniformly mentioned the common use of

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<sup>22</sup> MFN clauses can be used to simply assure that a particular MVPD gets the best possible deal in terms of the price paid for programming on a per-subscriber basis. These favorable terms are often conferred upon the MVPD without providing any of the bargained-for benefits to the independent network. This could create competitive harms, of course, but provisions such as these are not necessarily the most concerning kinds of MFNs.

<sup>23</sup> See Comments of beIn Sports, LLC, Promoting the Availability of Diverse and Independent Sources of Video Programming, MB Docket No. 16-41 (March 30, 2016) (“beIn Sports Comments”); Comments of Hispanic Information and Network, Inc., Promoting the Availability of Diverse and Independent Sources of Video Programming, MN Docket No. 16-41 (March 30, 2016) (“HITN Comments”); Comments of INSP, LLC, Promoting the Availability of and Independent Sources of Video Programming, MB Docket No. 16-41 (March 30, 2016) (“INSP Comment”).

<sup>24</sup> beIn Sports Comments at 1 (emphasis added).

<sup>25</sup> HITN Comments at 4; Comments of TheBlaze Inc., Promoting the Availability of Diverse and Independent Sources of Video Programming, MB Docket No. 16-41, at 5-6 (March 30, 2016) (“The Blaze Comments”); Comments of Altitude Sports & Entertainment, Outdoor Channel, Sportsman Channel

ADMs not to simply describe the marketplace, but discuss it in terms of what types of MVPD behavior limits their ability to provide diverse programming.<sup>26</sup> Overall, the Commission correctly acknowledges that MVPDs are increasingly using both MFNs and ADMs in their contracts with programmers and that these contract provisions have negative consequences on the diversity of programming in the video marketplace.<sup>27</sup> Public Knowledge, et al. observes that while absolute prohibitions from offering programming through ADMs are now rare, barriers—particularly those created by MFNs—still exist.

MFNs also hamper independent networks in negotiating with MVPDs for better neighborhoods or more favorable tiering. First, “neighborhooding” is when an MVPD groups channels with similar programming adjacent to each other in its channel lineup, resulting in the ability to leave independent programmers out of these neighborhoods. Neighborhooding makes it easier for consumers to find channels with similar programming but more difficult to find channels that are not located within the neighborhood. Neighborhooding also allows MVPDs to favor their own programming by placing independent programmers outside of the neighborhood. Indeed, Bloomberg filed a complaint against Comcast for not placing it in news neighborhoods it had created, consistent with a condition of its merger with NBCUniversal.<sup>28</sup> While Bloomberg ultimately won its dispute with Comcast at the FCC after a drawn-out battle,<sup>29</sup> independent programmers who do not have the financial resources to engage in channel placement disputes over neighborhooding are still harmed by this practice. Second, tiering (another channel placement practice MVPDs can impose on independent programmers) allows MVPDs to place independent programmers on less desirable channel tiers. Consumers are less likely to purchase

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and World Fishing Network, Promoting the Availability of Diverse and Independent Sources of Video Programming, MB Docket No. 16-41, 11 (March 30, 2016) (“Altitude Sports & Entertainment et. al Comments”).

<sup>26</sup> See Altitude Sports & Entertainment et al. Comments at 11.

<sup>27</sup> Promoting the Availability of Diverse and Independent Sources of Video Programming, Notice of Proposed Rulemaking, 31 FCC Rcd 11352, 11355 § 7 (2016).

<sup>28</sup> See Bloomberg L.P. v. Comcast L.L.C, Complaint, MB Docket No. 11-104 (June 13, 2011).

<sup>29</sup> See Bloomberg L.P. v. Comcast L.L.C, Memorandum Opinion and Order, 28 FCC Rcd 14346 (2013).

expanded tiers outside of an MVPD's basic tier service, making it more difficult for independent programmers to generate a sustainable viewership.

## **B. Larger Programmers Harming Independent Programmers**

Large programmers play a significant role in the negotiating process with MVPDs. Such leverage over MVPDs that have negative effects on third parties including independent programmers.

### **1. Bundling**

Bundling is a negotiating tool where large programmers are able to force MVPDs to carry less desirable programming in order to access their popular programs.<sup>30</sup> The National Cable Television Cooperative ("NCTC") reported that it negotiated master agreements with nine of the largest media groups including Disney/ESPN, Fox, Comcast/NBCU, Turner, Viacom, AETN, AMC, Discovery, and Scripps, which required the bundling of 65 of the 115 individual networks to be carried.<sup>31</sup> Therefore, a cable company who opts in to the NCTC deal with these programmers is forced to carry 65 networks.<sup>32</sup> This practice forces small and midsize cable companies to devote much of their capacity to carrying undesired networks at the expense of independent programmers. Similarly, the use of minimum penetration standards by large programmers limits the capacity available for MVPDs to carry independent programming.<sup>33</sup> Perhaps the clearest example of the large programmers' dominance is economic. Similarly-rated, bundled channels often receive as much as five times (or more) in subscriber fees than comparable independent networks.

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<sup>30</sup> Promoting the Availability of Diverse and Independent Sources of Video Programming, Notice of Inquiry, 31 FCC Rcd 1610, 1616-17 § 15 (2016).

<sup>31</sup> Comments of the American Cable Association, Promoting the Availability of Diverse and Independent Sources of Video Programming, MB Docket No. 16-41, at 14 (March 30, 2016) ("ACA Comments").

<sup>32</sup> *See id.* at 14-15.

<sup>33</sup> ACA Comments at 26; Comments of ITTA, Promoting the Availability of Independent Sources of Video Programming, MB Docket No. 16-41, at 7 (March 30, 2016).

## 2. Retransmission Consent

Large programmers also exert leverage over MVPDs through retransmission consent, the process where cable operators must negotiate with broadcasters in order to carry their programming.<sup>34</sup> The retransmission consent marketplace was originally created to protect the rights of local broadcasters, who often lacked leverage against monopolistic cable companies.<sup>35</sup> However, the marketplace has changed since then. While cable operators are still dominant, consolidation among programmers and broadcasters and increasing video competition has turned carriage negotiations from routine business to high-stakes negotiations. Consequently, retransmission consent fees have increased substantially over the years.<sup>36</sup> Large programmers with broadcast stations are therefore able to extract large sums of money from MVPDs turning the retransmission consent process into an additional revenue stream. This hinders the ability of independent programmers to negotiate carriage agreements with MVPDs on the same playing field as large programmers that own broadcast stations.<sup>37</sup>

## 3. Programming Blackouts

When retransmission consent negotiations come to a standstill, large programmers have another negotiating tool at their disposal—programming blackouts. The FCC’s rules do not prevent broadcasters from timing the expiration of contracts to coincide with marquee programming events, such as the Super Bowl, or other events of significant public interest. This timing only enhances large programmers’

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<sup>34</sup> See generally FCC, Retransmission Consent, available at <https://www.fcc.gov/media/policy/retransmission-consent>.

<sup>35</sup> See Implementation of Section 103 of the STELA Reauthorization Act of 2014, Notice of Proposed Rulemaking, 30 FCC Rcd 10237, 10238 § 2 (2015).

<sup>36</sup> See American Television Alliance, FCC Report Shows Consumers Are Paying 20%+ Increase in Annual Retransmission Consent Fees (Jan. 4, 2023), <https://americantelevisionalliance.org/fcc-report-shows-consumers-are-paying-20-increase-in-annual-retransmission-consent-fees>.

<sup>37</sup> Public Knowledge notes that some independent networks are owned by companies which also hold television broadcast stations serving only a small portion of the United States. Since such television ownership does not create undue influence in negotiations, independent networks affiliated with small television station groups should not be excluded from the protections that would be afforded by the proposed rules.



leverage turning users against the MVPDs and harming their subscriber numbers. Blackouts remain a persistent threat, harming consumers by blacking out desirable content in numerous markets. As the FCC recently noted,

Over the past decade, data indicates that the number of blackouts resulting from unsuccessful retransmission consent negotiations has increased dramatically. For the first 20 years of the retransmission consent regime, S&P Capital IQ reports that there were a total of 81 failed retransmission consent negotiations that resulted in blackouts of 447 broadcast TV stations in 365 markets, with two thirds of the impasses occurring just in the last three years of that period, from 2011 to 2014. This increase in the number of blackouts has persisted for over a decade, and the impact of each individual blackout has increased as more stations are taken off the air for longer periods of time. In 2019 alone, just 18 retransmission consent impasses resulted in 272 station blackouts that spanned 205 markets and affected 26.5 million subscribers. 6 According to S&P Capital IQ, these blackouts "on average remained in effect for 171 days—higher than the 98-day average in 2018, 33 days in 2017 and 52 days in 2016." Some MVPD subscribers in over half of television markets continue to experience blackouts every year.<sup>38</sup>

The ability to use blackouts, potentially affecting millions of consumers, is another bargaining chip that is not afforded to independent programmers.

### **C. Alleviating Harms to Competition by Prohibiting MFNs**

In a competitive market, small businesses like independent programmers should drive innovation and be ideal partners for MVPDs and live TV streaming services looking to find new approaches and fresh new content to serve viewers. Instead, MFNs are innovation-killers in the home video distribution marketplace. MFNs, by their nature and without regard to the various types of MFNs which may exist, confer significant benefits on the MVPD without necessarily creating any benefit for the independent network and consequently, viewers. They work as a ratchet—only moving in the direction that helps the MVPD. Even with the rise of streaming services, the issue of MFNs remains crucial for ensuring a competitive and diverse video marketplace. MFNs restrict the ability of independent programmers to negotiate fair carriage agreements and innovate in their distribution methods, thereby limiting their reach and revenue potential. By prohibiting MFNs, the FCC can promote a more level playing field where new

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<sup>38</sup> Requirements for Commercial Television Broadcast Station Blackouts, MB Docket No. 23-427, 2023 FCC LEXIS 3863, FCC 23-115 (rel. December 21, 2023).

and diverse voices can thrive, ultimately benefiting consumers with more varied and affordable programming options. Furthermore, eliminating MFNs would encourage competition among streaming services, driving innovation and improving service quality for viewers. Thus, addressing MFNs is not only relevant but also essential for fostering a healthy, competitive media environment that adapts to the evolving landscape of video distribution.

First, in all instances, the MFN provides the MVPD with additional competitive knowledge. That is, when an independent network strikes a deal with terms that are potentially more beneficial than those in other MVPD's contracts with MFN protection, it is incumbent on the independent network to notify those other MVPDs of the relevant terms of the new contract. This provides useful competitive information to all other MVPDs whether they avail themselves of the new terms or not.

Second, MFNs are structured to provide protection on major economic and marketing issues. Even MFNs which are not unilateral or "cherry picking" in nature, nonetheless can allow an MFN-protected MVPD to reap the benefit of the new contractual term. So a "free period" associated with a launch on a new platform can translate into a zero rate for other MVPD competitors—even though they had previously benefited from similar launch incentives. MFNs are all about the present, not past history. Likewise, if an independent network offers a lower rate in exchange for placement in a "better neighborhood" on a MVPD's channel lineup or as an incentive to be included in a programming package that is marketed to more of the MVPD's subscribers, the rate becomes available to other MFN-protected MVPDs—generally without the corresponding benefits to the independent network.

Third, MFNs are weaponized against independent networks. The fear of MFN audits is real. These procedures, which allegedly are meant to only ensure compliance with MFN obligations, often take months and result in significant expenditures of network executives' time and resources paid to outside

lawyers and accounting firms. Often MFN audits are either threatened or actually conducted just before carriage contract renewal negotiations are set to begin.

Finally, MFN clauses evolve. These clauses, which often go on for several pages of the carriage agreement, are carefully drafted by the MVPDs' lawyers to protect the MVPDs' interest. Given the inequality of bargaining power that is the defining characteristic of independent networks—MVPD negotiations, independent networks have little ability to make changes to what is proposed. With movement of MVPD executives between companies and the availability of outside counsel who gain insight into how other MVPDs approach their MFNs, new and beneficial MFN terms developed by one MVPD soon become industry standards. In fact, some MVPDs even require MFNs that include their competitor's MFN clauses. "MFNs on MFNs" has become the logical (albeit absurd) conclusion to this MFN arms race. As such, banning MFNs as they relate to independent networks is the best policy.

### **1. Banning MFNs Must Be Accompanied By Reasonable ADMs**

If the unfair burdens of MFNs are abolished entirely, streaming could create revenue opportunities, such as FAST Channels and video on demand (VOD), in addition to expanding viewership, which should play an increasingly important role in the future financial models for independent programming networks. To ensure that independents have a fair opportunity to participate in these and other streaming opportunities, it is important that the Commission also adopt the rules proposed in the NPRM prohibiting unreasonable ADM restrictions. To be clear, the same large players in traditional MVPD platforms also are major parts of the streaming universe. To ensure that the successes which would attend prohibition of MFNs, fair restrictions on ADMs also must be enforced. Otherwise, independents would be burdened with the same problems that exist today, MVPD contractual agreements which freeze them out of providing streamed programming as timely as their programming conglomerate competitors.<sup>39</sup>

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<sup>39</sup> Comments of NTCA–The Rural Broadband Association, p. 3; Comments of FUSE, LLC, p. 13; Comments of American Independent Media, Inc., p. 14.

## V. Competition in Satellite Communications Services

The satellite marketplace requires competition to drive innovation and to ensure consumers benefit from improved services and greater accessibility.

### A. Starlink's Dominance is Turning Out to Be A Big Deal

The Fixed Satellite Service (“FSS”) marketplace is made up of a few major actors including: INTELSAT, SES, Telesat, OneWeb, Viasat, XTAR, Amazon’s Project Kuiper, and Space X’s Starlink. Starlink has demonstrated particularly significant growth; Starlink’s NGSO constellation is reportedly made up of 6,000 satellites, with over 5,200 of them operational and serving nearly 2.7 million users across 75 countries.<sup>40</sup> This disproportionate disruption in the satellite communications market is attributed to two factors: middle/upper income consumers’ willingness to pay a premium and a cost advantage in manufacturing and launch services.<sup>41</sup>

Starlink’s cost advantage in manufacturing is driven by ambitious vertical integration and high volume production.<sup>42</sup> The vertical integration of in-house manufacturing allows the company to keep costs of launching satellites unprecedentedly low. SpaceX’s Falcon9, the first orbital class rocket vehicle capable of relaunching, has also played a notable role in the reduced cost of a Starlink satellite launch: occurring nearly every week, with about 60 satellites released into orbit each time.<sup>43</sup>

Starlink’s dominance has a significant impact on national security and domestic policy. For example, a recent article in *The New York Times* highlighted how Starlink has leveraged its importance to U.S. national security interests to ignore environmental regulations and disrupt environmentally sensitive

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<sup>40</sup> Sandra Erwin, “Starlink soars: SpaceX’s satellite internet surprises analysts with \$6.6 billion revenue projection,” *SpaceNews*, (May 9, 2024). <https://spacenews.com/starlink-soars-spacexs-satellite-internet-surprises-analysts-with-6-6-billion-revenue-projection/>.

<sup>41</sup> *Id.*

<sup>42</sup> *Id.*

<sup>43</sup> Adam Satariano et al., “Elon Musk’s Unmatched Power in the Stars” *The New York Times* (July 28, 2023), <https://www.nytimes.com/interactive/2023/07/28/business/starlink.html>.

areas surrounding SpaceX's East Texas launch zone.<sup>44</sup> Meanwhile, reliance on Starlink for global broadband access has created a serious national security concern over the concentration of power over foreign policy and military operations in the hands of a single individual.<sup>45</sup> Competitors have alleged that this dominance comes not simply from entrepreneurial drive and technical innovation, but increasingly from anticompetitive tactics.<sup>46</sup>

### **B. The Commission Should Analyze the Potential Effects of the Concentration of Relaunchable Vehicles to Ensure Competition Among Satellite Communications Providers**

While Starlink is undoubtedly pioneering access to low earth orbit (LEO) services, as mentioned above, the provider is unrealistic for many low income individuals.<sup>47</sup> Additional actors in this arena could help drive prices down particularly in the nation's most rural and tribal communities. However, Amazon, for example, is largely reliant on outside launch providers for satellite vehicles.<sup>48</sup> The Commission should consider an analysis of various factors that may bottleneck the satellite communications marketplace including vehicle manufacturing.

## **VI. A Spectrum Policy to Promote Competition**

Spectrum policy is central to competition policy. A balanced spectrum policy that unleashes more quality spectrum for unlicensed, exclusively licensed, and shared/lightly-licensed use has proven in recent years to be both a feasible and effective means to promote competition and consumer choice for

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<sup>44</sup> Eric Lipton, "Wildlife Protections Take a Backseat to SpaceX's Ambitions," NY Times (July 7, 2024) <https://www.nytimes.com/2024/07/07/us/politics/spacex-wildlife-texas.html>.

<sup>45</sup> Lily Jamali and Jesus Alvarado, "How Musk's Starlink Became a Security Liability for the U.S.," Marketplace.org (Sept. 14, 2023).

<https://www.nytimes.com/2024/07/07/us/politics/spacex-wildlife-texas.html>

<sup>46</sup> Eric Lipton, "Elon Musk Dominates Space Launch. Rivals are Calling Foul," NY Times (May 28, 2024). <https://www.nytimes.com/2024/05/28/us/politics/elon-musk-space-launch-competition.html>

<sup>47</sup> A starlink starter kit for high-speed internet in homes costs \$299 with a \$120 monthly service fee. *See* "Residential." *Starlink*, [www.starlink.com/residential](http://www.starlink.com/residential). Accessed 30 June 2024.

<sup>48</sup> Jeff Foust, *Starlink's disruption of the space industry*, The Space Review (May 28, 2024), <https://www.thespacereview.com/article/4801/1>.

broadband. PK and OTI urge the Commission to 1) prioritize policies that balance licensed, unlicensed, and shared/lightly-licensed allocations for fixed and mobile services alike; 2) adopt auction frameworks that make interference-protected spectrum available in much smaller geographic areas and at lower power; and 3) that move quickly to determine which underutilized federal and non-federal bands cannot be cleared off for auction so that instead either an unlicensed underlay (as in the 5 and 6 GHz bands) or coordinated shared access on a lightly-licensed basis (as in CBRS and the 70/80/90 GHz bands) can be implemented. The Commission should also conclude its proceeding to update its rules on spectrum holdings since the current flawed and outdated framework has proven woefully inadequate as a means of remedying what has become a steadily consolidating mobile marketplace.

**A. The Commission has Demonstrated that a Balanced Spectrum Allocation Policy with More Unlicensed, Shared and Licensed Access Promotes Competition**

The Commission can promote competition in both the wireless and fixed broadband markets, as well as in adjacent markets for devices, chips and communications services, by continuing the sort of balanced spectrum policy it has pioneered in recent years. The most robust and competitive wireless ecosystem will need additional contiguous blocks of unlicensed, shared/licensed-by-rule, and exclusively-licensed spectrum. Trends in consumer use, in emerging competition in mobile by Wi-Fi-first MVNO entrants, in growing competition among fixed wireless service providers, and in direct spectrum access for very local and purpose-built broadband and IoT networks by a growing variety of enterprises, critical infrastructure, schools, libraries and other local public institutions, all reinforce the reality that the world's most competitive and valuable 5G wireless ecosystem will be built on abundant and diverse spectrum access.

The unfortunate lapse in the Commission's auction authority has underscored the vital importance of unlicensed, shared, and licensed-by-rules as tools that the Commission should utilize more frequently to bring spectrum into productive use. No one can predict when Congress will restore the Commission's

auction authority. Even when Congress does eventually do so, it is unlikely to make that auction authority permanent. By contrast, the Commission’s authority to authorize shared spectrum access is inherent in the Act and the Commission’s overall spectrum management authority.

Substantial increases in mid- and upper-mid-band spectrum access should be made available for each of these three distinct paths to the spectrum access needed to meet the future needs of households, enterprises, and community anchor institutions at the lowest possible costs. The nation needs more of all three categories of spectrum access because the world’s most robust and productive wireless ecosystem will not be built out by mobile carriers alone or solely with exclusively licensed spectrum. America’s emerging “5G” and future “6G” wireless ecosystems, like the current wireless ecosystem, will rely on a combination of large national or regional carrier networks for truly “mobile” connections (for use ‘on the go’) and an increasingly far larger number of complementary, high-capacity, and customized networks deployed by individual enterprises, households, and community anchor institutions to meet their particular needs at a lower cost.

In this respect, the Commission’s world-leading expansion of shared, unlicensed access to 1,200 megahertz across the entire 6 GHz band is already fueling more competition among both mobile and fixed wireless providers, in addition to its even larger impact on innovation and the quality of consumer connectivity. As the workhorse of the internet, Wi-Fi and unlicensed spectrum is what ultimately makes both mobile and fixed broadband service more available, fast, and affordable to consumers and businesses nationwide. The vast majority of data consumed on smartphones and other mobile devices—more than 80% in the U.S. and Europe—flows over Wi-Fi networks, never touching mobile carrier spectrum or infrastructure. And far more unlicensed spectrum will be needed in five-to-ten years to distribute the multiple gigabits of low-latency throughput that will be available and needed for all the new

high-bandwidth applications and devices (such as AR/VR) that will be primarily used inside our nation’s homes, offices, schools and other indoor venues.

Most relevant for this inquiry is the demonstrable—and unexpected—convergence and competition that Commission spectrum decisions have facilitated over the past few years in the markets for mobile and fixed residential broadband. In short, more unlicensed and shared spectrum access is enabling the three largest cable ISPs to add a “Wi-Fi first” mobile service offering to their bundle, acquiring roughly 15 million post-paid mobile subscriptions to date. Conversely, and even more recently, a large infusion of mid-band licensed spectrum auctioned over the past four years has created excess capacity that the three national mobile carriers are leveraging to aggressively enter the fixed wireless market and acquire an additional 9 million fixed broadband subscribers.

In the mobile market, the Commission’s unanimous votes in 2020 to expand the availability of very wide channels of unlicensed spectrum access in the 5.9 and 6 GHz bands gave the cable industry (initially Charter and Comcast) what they needed to justify large investments in what was initially a counterintuitive product: a Wi-Fi first MVNO. Today Comcast, Charter and Cox market a high-capacity *mobile* service that relies principally on Wi-Fi and, for use ‘on the go,’ a MVNO relationship with Verizon. For example, Comcast reports that “[t]oday 90 percent of the mobile data traffic on Xfinity Mobile devices travels over WiFi, not cellular,” and delivers mobile download speeds up to 1 gigabit per second (gbps).<sup>49</sup> Comcast attributes this to its extensive fiber backhaul and 23 million Wi-Fi hotspots, most of which are consumer gateway routers open to any customer through a separate SSID. More than a year earlier Charter similarly reported that more than 85 percent of the data traffic on its MVNO network

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<sup>49</sup> Kohposh Guda, “Comcast Lights Up Wi-Fi Boost Delivering Gig Speeds to Xfinity Mobile Customers on Millions of Wi-Fi Hotspots,” Comcast Blog (April 23, 2024). Available at: <https://corporate.comcast.com/press/releases/comcast-wifi-boost-gig-speeds-23-million-wifi-hotspots>.



ran over Wi-Fi.<sup>50</sup> Charter and Comcast were also among the largest four largest buyers of Priority Access Licenses (along with Verizon and DISH) in the 2020 CBRS auction and have reported they are close to adding that capacity to their mobile networks in select markets, which they plan to enhance with the CBRS band's General Authorized Access (GAA) when possible.<sup>51</sup>

The recent large increase in the supply of mid-band licensed spectrum has spawned a reciprocal increase in competition to cable (and other fixed broadband providers) by mobile carriers. Just as the three largest cable companies are leveraging their extensive fiber backhaul and access to unlicensed spectrum to compete in mobile services, each of the three nationwide mobile carriers—Verizon, T-Mobile and AT&T—has recently begun leveraging its surplus spectrum holdings to offer a fixed wireless home broadband service in many geographic areas.

T-Mobile's home broadband service reached 5.2 million fixed wireless access ("FWA") customers last quarter, while Verizon hit 3.5 million.<sup>52</sup> Verizon already has plans to further expand its service to multi-dwelling units using its millimeter wave spectrum.<sup>53</sup> The two carriers already hold a combined 7% of the U.S. broadband market with their FWA offerings.<sup>54</sup> AT&T's newer FWA service, Internet Air, added 110,000 new subscribers in the first quarter of 2024 and reached more than 200,000 overall.<sup>55</sup> In total, the

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<sup>50</sup> Linda Hardesty, "Charter, Comcast Share Their Wi-Fi Networks for MVNO Services," *Fierce Wireless* (May 10, 2023) (reporting 85% Wi-Fi offload on MVNO mobile networks), <https://www.fiercewireless.com/wireless/charter-talks-spectrum-connectx>.

<sup>51</sup> Remarks of Manish Jindal, Group Vice President, Wireless R&D, Charter Communications, at "Announcing CBRS 2.0: The Next Generation of Spectrum Sharing with the Military," *New America* (June 18, 2024), <https://www.newamerica.org/oti/events/announcing-cbrs-20/>.

<sup>52</sup> "T-Mobile Delivers Industry-Leading Customer, Service Revenue and Profitability Growth in Q1 2024, and Raises 2024 Guidance," T-Mobile Press Release (Apr. 24, 2024), <https://www.t-mobile.com/news/business/t-mobile-q1-2024-earnings>; Kelly Hill, "Verizon shares FWA revenues, improves phone losses," *RCR Wireless News* (Apr. 22, 2024), <https://www.rcrwireless.com/20240422/carriers/verizon-shares-fwa-revenues>.

<sup>53</sup> Kelly Hill, "Verizon shares FWA revenues, improves phone losses," *RCR Wireless News* (Apr. 22, 2024), <https://www.rcrwireless.com/20240422/carriers/verizon-shares-fwa-revenues>.

<sup>54</sup> Doug Dawson, "Competing Against FWA," *Pots and Pans*, CCG Consulting (June 26, 2024), <https://potsandpansbyccg.com/2024/06/26/competing-against-fwa/>.

<sup>55</sup> Jeff Baumgartner, "AT&T doubles 'Internet Air' subscriber tally in Q1," *Light Reading* (Apr. 24, 2024), <https://www.lightreading.com/fixed-wireless-access/at-t-doubles-internet-air->

mobile carriers had signed up 7.8 million FWA residential customers (through March). New Street Research estimates that the top four wireless providers (including Dish) have the excess spectrum capacity to serve 16 million.<sup>56</sup> This growth is likely to continue into the near future: TD Cowen analysts predict that FWA operators will gain 2.6 million more customers this year.<sup>57</sup>

FWA's growth is clearly taking market share from cable ISPs, just as cable's Wi-Fi first mobile service has taken a small but growing share of the mobile data market.<sup>58</sup> Leichtman Research Group reports that FWA accounted for more than 100% of the net growth in broadband subscriptions in 2023, since the top cable companies lost approximately 65,000 broadband subscribers at the same time.<sup>59</sup> Cable is further predicted to lose another 1.1 million customers this year.<sup>60</sup> While a significant number of FWA subscribers appear not to have had a high-speed broadband connection before—and a focus of the carriers' purported strategy has been to capture DSL and hotspot customers—the technology offers obvious and direct competition to cable in areas where the two do overlap. This overlap is not inconsiderable: Opensignal finds that some 6% of urban Internet customers, who more likely live in areas with existing cable, subscribe to a FWA connection.<sup>61</sup>

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subscriber-tally-in-q1.

<sup>56</sup> Linda Hardesty, "Big U.S. wireless operators have capacity for 16 million FWA subscribers," *Fierce Network* (June 25, 2024), <https://www.fierce-network.com/broadband/big-us-wireless-operators-have-capacity-16-million-fwa-subscribers>.

<sup>57</sup> Mike Dano, "Verizon hints at FWA expansion next year," *Light Reading* (May 14, 2024), <https://www.lightreading.com/fixed-wireless-access/verizon-hints-at-fwa-expansion-next-year>.

<sup>58</sup> Mike Dano, "FWA in the USA: Getting ready for Phase 2," *Light Reading* (June 6, 2024), <https://www.lightreading.com/fixed-wireless-access/fwa-in-the-usa-getting-ready-for-phase-2>.

<sup>59</sup> Leichtman Research Group, "Research Notes, 1Q 2024: Actionable Research on the Broadband, Media & Entertainment Industries" (March 2024), <https://leichtmanresearch.com/wp-content/uploads/2024/03/LRG-Research-Notes-1Q-2024.pdf>.

<sup>60</sup> Mike Dano, "Verizon hints at FWA expansion next year," *Light Reading* (May 14, 2024), <https://www.lightreading.com/fixed-wireless-access/verizon-hints-at-fwa-expansion-next-year>.

<sup>61</sup> Robert Wyrzykowski, "5G Fixed Wireless Access (FWA) Success in the US: A Roadmap for Broadband Success Elsewhere?" *Opensignal* (June 6, 2024), <https://www.opensignal.com/2024/06/06/5g-fixed-wireless-access-fwa-success-in-the-us-a-roadmap-for-broadband-success-elsewhere>.

The completion of four mid-band spectrum auctions since early 2021—adding more than 400 megahertz of exclusive spectrum supply in the 2.5 and mid/upper 3 GHz bands—has encouraged the three big mobile carriers to better monetize their investment in 5G network infrastructure by layering on top a fixed wireless access (FWA) service in areas with below-average demand for 4G/5G mobile capacity. There are indications that the mobile carriers’ vast warehouse of millimeter wave spectrum (most obtained in the 2018 Spectrum Frontier auctions) is being selectively leveraged as well.

A combination of mid- and high-band spectrum allows operators to offer relatively high speeds at low marginal cost. Verizon’s 5G Home Internet, for example, advertises download speeds up to 300 Mbps, while both AT&T and T-Mobile both offer potential ranges above 200 Mbps.<sup>62</sup> T-Mobile’s FAQ, in fact, directly encourages customers to compare its 5G home internet speeds to those of cable (although the carrier acknowledges that data prioritization may lead to slower speeds at times).<sup>63</sup> As the New Street analysis suggests, one big limitation on mobile carrier FWA service is that it is targeted to areas with lower mobile demand and, in the fine print, fixed consumers can be throttled during periods of congestion to ensure that mobile customers achieve QOS.<sup>64</sup>

Where it is available, FWA can compete with cable broadband on the basis of price in particular. Opensignal finds that 74% of FWA customers pay under \$75 monthly for the service, compared to 60%

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<sup>62</sup> See the product pages for the three mobile carrier FWA products, all accessed June 29, 2024: AT&T Internet Air, <https://www.att.com/internet/internet-air/>; Verizon Home Internet, <https://www.verizon.com/home/internet/5g/>; T-Mobile 5G Home Internet, [https://www.t-mobile.com/home-internet/plans?INTNAV=tNav%3APlans%3AHomeInternetPlan](https://www.t-mobile.com/home-internet/plans?INTNAV=tNav%3APlans%3AHomeInternetPlan;);

<sup>63</sup> See T-Mobile’s FAQ, “How it Works: A Window Into 5G Wireless Internet,” <https://www.t-mobile.com/home-internet/how-5g-home-internet-works?INTNAV=tNav%3AHowItWorks>.

<sup>64</sup> See Allison Johnson, “Five things to consider before you sign up for T-Mobile Home Internet,” *The Verge* (April 13, 2021) (T-Mobile home internet “is subject to the same “data prioritization” policies as most of the company’s cellular data plans, meaning customers might see their speeds temporarily drop during busy times for the network”), <https://www.theverge.com/2021/4/13/22381885/t-mobile-5g-home-internet-issues>; see also T-Mobile 5G Home Internet, “How it Works: A Window Into 5G Wireless Internet,” which states that “speeds vary due to factors affecting cellular networks, including data prioritization,” <https://www.t-mobile.com/home-internet/plans?INTNAV=tNav%3APlans%3AHomeInternetPlan>.

below that price point for cable broadband.<sup>65</sup> Like cable ISPs, mobile carriers are well-positioned to offer consumer-friendly discounts as part of a bundle. The price of Verizon’s 5G Home, for example, drops by \$15 per month when bundled with a postpaid mobile connection.<sup>66</sup> Though cable operators have tried to downplay FWA as a lower-cost but slower-speed offering, Comcast has already launched its cheaper NOW line of products (with home broadband reaching 100 Mbps for as low as \$30) seemingly in response.<sup>67</sup>

Nevertheless, it is important to recognize that these numbers represent “green shoots” of potential future competition. Both the fixed broadband market and the mobile broadband market remain highly concentrated on both a local and national basis. It is therefore imperative that the Commission take active steps to promote competition. In particular, the Commission’s successful policies on unlicensed and licensed-by-rule spectrum access – combined with a spectrum cap/screen designed to support four-firm competition rather than three-firm competition – can encourage the growth of these competitive offerings to the benefit of consumers.

**B. Coordinated and Lightly-Licensed Spectrum Sharing Should be Expanded to Give a Wide Variety of Enterprises, Rural ISPs and other Users and Use Cases Direct Local Access to Spectrum**

A spectrum policy designed to promote competition and consumer choice should make substantially more spectrum available for coordinated sharing on a localized basis by the widest possible variety of small and rural ISPs, individual business enterprises, critical infrastructure, campuses, venues, schools and other public spaces. A principal rationale for heightened scrutiny of mobile spectrum holdings

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<sup>65</sup> Robert Wyrzykowski, “5G Fixed Wireless Access (FWA) Success in the US: A Roadmap for Broadband Success Elsewhere?” *Opensignal* (June 6, 2024), <https://www.opensignal.com/2024/06/06/5g-fixed-wireless-access-fwa-success-in-the-us-a-roadmap-for-broadband-success-elsewhere>.

<sup>66</sup> Verizon Home Internet, accessed July 1, 2024, <https://www.verizon.com/home/internet/5g/>.

<sup>67</sup> Doug Dawson, “Competing Against FWA,” *Pots and Pans*, CCG Consulting (June 26, 2024), <https://potsandpansbyccg.com/2024/06/26/competing-against-fwa/>.

(discussed just below) is that the low- and mid-band spectrum most valuable for wide-area mobile services has become more and more difficult to clear and repurpose for exclusive licensing. However, contrary to assumptions of scarcity, innovative and forward-looking spectrum sharing policies can unlock an abundance of wireless bandwidth in a larger number of underutilized bands—including in unused portions of licensed mobile carrier bands—for a very diverse range of users and use cases.

In a 5G and emerging 6G world, customized and purpose-built small cell networks using Next Generation Wi-Fi, private LTE/5G and other technologies at relatively low power enhance the wireless ecosystem and fuel advanced applications such as home and industrial IoT and automation, virtual reality, and near-real time interactive video. The distinction between spectrum for very wide-area coverage (which fits the traditional cellular licensing model) and spectrum for access and capacity in localized areas (which is a specific benefit of unlicensed and lightly-licensed spectrum) is even more relevant for private 5G/LTE networks in light of the fact that an increasing share of mobile device data traffic (more than 80 percent) is consumed indoors, on a nomadic and not mobile basis. As fiber backhaul reaches more and more locations, innovation and competition can be fueled with direct, localized spectrum access.

The Citizens Broadband Radio Service (“CBRS”) is a now well-established example of how occupied but underutilized spectrum can be coordinated for more intensive licensed and opportunistic use by an unprecedented variety of users that range from big mobile carriers (e.g., Verizon) to local school districts and libraries. CBRS has been among the FCC’s most successful spectrum policy innovations, one being replicated by regulators in the United Kingdom, Germany, Sweden and more than a dozen other nations (albeit with manual coordination to date).<sup>68</sup> The rules for CBRS include a use-it-or-share-it provision that authorizes any operator to coordinate access to both the GAA portion of the band and to unused PAL spectrum on an opportunistic basis. The SAS database thereby facilitates—on an automated

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<sup>68</sup> See, e.g., Ofcom, “Shared Access Licenses,” Available at: <https://www.ofcom.org.uk/consultations-and-statements/category-1/enabling-opportunities-for-innovatio>; “CBRS Leading a Global Trend of Private LTE/5G: HP,” *Communications Daily* (April 13, 2023).

basis at low cost—intensive spectrum sharing that both protects U.S. Navy operations and ensures that all the spectrum in the 3.5 GHz band is available for use.

The diverse and rapid profusion of CBRS deployments include many very localized and innovative wireless network deployments that would either not be possible or would be overly expensive in a wireless ecosystem that depended only on large-area and exclusive licensing. Within four years of becoming available, there are more than 1,000 users of GAA shared spectrum access and nearly 400,000 CBSD access points deployed.<sup>69</sup> In addition to the hundreds of factory complexes, ports, utilities, and other private networks customized to boost enterprise connectivity, dozens of Tribes, school districts and libraries—as well as small wireless ISPs in rural and underserved areas—rely on CBRS (and primarily on General Authorized Access) to extend the reach of their broadband networks and to enhance their communities’ basic connectivity.<sup>70</sup>

The Commission can promote competition, as well as innovation, by tailoring the CBRS framework to unlock fallow spectrum capacity in additional occupied but underutilized bands. Spectrum sharing governed by database coordination (and sensing where necessary) is at this point well-proven and

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<sup>69</sup> See Kris Kozamchak, “How CBRS 2.0 is Driving the Future of Private Cellular Networks,” Mosolabs (June 26, 2024), <https://www.mosolabs.com/how-cbrs-2-0-is-driving-the-future-of-private-cellular-networks/>; “OnGo Alliance Meeting Highlights CBRS Momentum, Addressing Industry Connectivity Needs,” OnGo Alliance Press Release (Nov. 14, 2023), <https://ongoalliance.org/news/ongo-alliance-meeting-highlights-cbrs-momentum-and-5g-sa-plugfest-addressing-industry-connectivity-needs/>.

<sup>70</sup> For example, school districts in Texas, Colorado, California and other states responded to the pandemic remote learning crisis by leveraging CBRS to connect tens of thousands of low-income students at home directly to the school’s network, ending the “homework gap” for good. See Michael Calabrese and Matthew Marcus, “Case Studies of School and Community Networks Able to Close the Homework Gap for Good,” New America and Schools Health & Libraries Broadband (SHLB) Coalition report, at 25-29 (August 2022). Available at: [https://newamericadotorg.s3.amazonaws.com/documents/Anchor-Nets-Case-Studies-revisedFINAL\\_091422.pdf](https://newamericadotorg.s3.amazonaws.com/documents/Anchor-Nets-Case-Studies-revisedFINAL_091422.pdf).

promoting competition in low-, mid-, and high-frequency bands.<sup>71</sup> Extending and adapting the three-tier CBRS framework is likely the most expeditious and productive way to make federal radar and other bands below 3450 MHz available for 5G-capable networks and services.<sup>72</sup> Our groups and PISC have recommended that the National Spectrum Strategy include a plan to study and make available for at least opportunistic shared use all of the band segments from 2900 to 3450 MHz.<sup>73</sup> According to NTIA spectrum use studies, compared to the 3450-3650 MHz bands already made available for commercial sharing, the sub-bands below 3450 MHz are heavily occupied by DOD systems from all branches of the military and thus less amenable to clearing for traditional wide-area, high-power and “exclusive” use.<sup>74</sup>

Immediately below this 3 GHz military spectrum is the 2900-3100 MHz sub-bands allocated to federal and commercial shipborne radars required on most passenger and cargo ships for safety under an international maritime treaty, as well as for weather monitoring.<sup>75</sup> Similar to the 3100-3650 MHz bands, it appears that the band could be open for licensed-by-rule and/or unlicensed (low power, indoor-only) shared use across most of the nation.

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<sup>71</sup> See generally, Michael Calabrese, “Solving the Spectrum Crunch: Dynamic Spectrum Management Systems,” Dynamic Spectrum Alliance report (Oct. 2023). Available at <https://www.dynamicspectrumalliance.org/solving-the-spectrum-crunch.pdf>.

<sup>72</sup> See Reply Comments of New America’s Open Technology Institute, Facilitating Shared Use in the 3.1-3.55 GHz Band, WT Docket No. 19-348 (March 23, 2020).

<sup>73</sup> See Comments of Public Interest Spectrum Coalition, *Development of a National Spectrum Strategy*, NTIA Docket No. 230308-0068, at 41-46 (filed Apr. 17, 2023).

<sup>74</sup> U.S. Dept. of Commerce, Feasibility of Commercial Wireless Services Sharing with Federal Operations in the 3100-3550 MHz Band, at 11 (July 2020) (“NTIA July 2020 Report”) (“the lower portion of the band is more congested and includes additional systems that have not been analyzed”), [https://www.ntia.doc.gov/files/ntia/publications/ntia\\_3100-3550\\_mhz\\_mobile\\_now\\_report\\_to\\_congress.pdf](https://www.ntia.doc.gov/files/ntia/publications/ntia_3100-3550_mhz_mobile_now_report_to_congress.pdf). See also C. Todd Lopez, “Spectrum Sharing is Way Ahead to Maintain Economic Dominance,” DOD News, U.S. Department of Defense (Sept. 21, 2022). Available at: <https://www.defense.gov/News/News-Stories/Article/Article/3165774/spectrum-sharing-is-way-ahead-to-maintain-economic-dominance-defense-official-s/>.

<sup>75</sup> See NTIA, Federal Government Spectrum Use Reports 225 MHz-7.125 GHz, “2900-3100 MHz Report” (Dec. 1, 2015) (“NTIA 2900-3100 Use Report”). Available at <https://www.ntia.doc.gov/page/federal-government-spectrum-use-reports-225-mhz-7125-ghz>. The International Convention for the Safety of Life at Sea (SOLAS) is an international maritime treaty that sets minimum safety standards in the construction, equipment and operation of merchant ships.

Once the incumbent protection criteria are established, the Commission can leverage the Spectrum Access Systems (SAS) already operating in the nearby CBRS band to coordinate at least General Authorized Access (GAA) – and possibly Priority Access Licenses (PALs) as well – in local areas where and when the spectrum is not in use by military, maritime or other incumbent operations. Our groups believe it is in the public interest to designate most of the frequencies between 2900 and 3450 MHz for a three-tier sharing framework similar to CBRS, with small-area PALs and GAA use coordinated across the entire band by a dynamic spectrum management mechanism.

The pending 12 GHz proceeding represents another important opportunity for the Commission to expand both spectrum for fixed terrestrial broadband licensees *and* opportunistic access for a myriad of other local spectrum users, particularly rural and Tribal wireless ISPs. In that proceeding, our groups have proposed a Tribal set-aside; opportunistic access on a coordinated basis by fixed wireless providers where the band is not in use by the primary licensees; and the consideration of a low-power, indoor-only underlay for unlicensed use (similar if not the same as LPI in 6 GHz) can be accommodated regardless of the degree of coexistence possible between incumbent satellite and future two-way terrestrial broadband providers.<sup>76</sup>

More broadly, authorizing opportunistic access on a use-it-or-share-it basis in underutilized bands should be embraced by the Commission as a default approach aimed at expanding local spectrum access for small and non-traditional ISPs in rural, tribal and other underserved areas, as well as for a wide variety of business enterprises, venues, schools, libraries and other community anchor institutions.<sup>77</sup> A use-it-or-share-it authorization can expand productive use of spectrum without risking harmful interference or undermining the deployment plans of primary licensees. Depending on the band and

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<sup>76</sup> See Comments of the Public Interest Organizations, *Expanding Flexible Use of the 12.2-12.7 GHz Band*, WT Docket 20-443 (May 7, 2021), at 14-27.

<sup>77</sup> See Michael Calabrese, “Use It or Share It: A New Default Policy for Spectrum Management,” Open Technology Institute at New America (March 2021). Available at: <https://tinyurl.com/m7v2rkre>.



incumbent use, opportunistic access can be an unlicensed underlay (similar to the low-power, indoor-only authorization across the entire 6 GHz band), or managed by an automated coordination mechanism. A use-or-share approach promotes important public interest goals, including more intensive use of fallow spectrum capacity, lowering barriers of entry to a diverse range of uses and users. This in turn facilitates innovation and competition, improving choices and lowering costs for consumers, and promoting service in rural and other underserved areas, thereby helping to narrow the digital divide.

### **C. The Commission Should Adopt Significant Changes to its Spectrum Screen**

As the Commission has repeatedly explained, unlike the antitrust authorities, the FCC has an affirmative obligation to *promote* competition.<sup>78</sup> As a general matter, this comes from the Commission's public interest standard of review for license transfers.<sup>79</sup> But in spectrum policy, the Commission has an additional statutory obligation to: "promot[e] economic opportunity and competition and ensur[e] that new and innovative technologies are readily accessible to the American people by avoiding excessive concentration of licenses."<sup>80</sup>

The Department of Justice has consistently maintained that protecting competition requires four national firms, not three. In 2011, the Department of Justice challenged the acquisition of T-Mobile by AT&T to preserve the availability of four national competitors.<sup>81</sup> Approximately 10 years later, the DOJ acquiesced to the merger of T-Mobile and Sprint only after imposing numerous divestitures and conditions

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<sup>78</sup> See, e.g., *Applications of AT&T Wireless Inc. and Cingular Wireless Corporation for Consent to Transfer Control of Licenses and Authorizations*, Memorandum report & Order, 19 FCCRcd 21522, 21554-55 Par. 42 (2004) (*Cingular-AT&T Wireless Order*). ("In addition to considering whether the merger will reduce existing competition, therefore, we also must focus on whether the merger will accelerate the decline of market power by dominant firms in the relevant communications markets and the merger's effect on future competition.")

<sup>79</sup> *Id.* at Par. 41-43.

<sup>80</sup> 47 U.S.C. § 309(j)(3)(B).

<sup>81</sup> See Department of Justice, "Justice Department Files Antitrust Lawsuit to Block AT&T's Acquisition of T-Mobile," Press Release (August 31, 2011). Available at: <https://www.justice.gov/opa/pr/justice-department-files-antitrust-lawsuit-block-att-s-acquisition-t-mobile>:

to replace Sprint with DISH as the fourth national competitor.<sup>82</sup> Only last month, the DoJ reiterated the importance of four-firm competition by supporting DISH’s request for an extension of time to purchase T-Mobile’s 800 MHz licenses.<sup>83</sup> Additionally, while 3-firm concentration was considered “highly concentrated” under the old merger guidelines, the new proposed merger guidelines take an even stricter view of appropriate levels of market concentration.<sup>84</sup>

Unfortunately, during the 20 years since the Commission decided to sunset its hard spectrum cap in 2003 and adopt a case-by-case analysis,<sup>85</sup> spectrum aggregation limits have failed to facilitate or even preserve competition. Rather than maintaining the screen at its initial level so that more spectrum could go to competitors and new entrants, the Commission continued to raise the spectrum screen whenever it made new “usable spectrum” available in the marketplace.<sup>86</sup> The lengthy list of national and regional providers in the *Cingular-AT&T Wireless Order*, presented as proof that a screen of one third of available spectrum would support vibrant competition, has melted away to the three-firm competition the spectrum screen remains structured to support. T-Mobile has announced a deal to acquire US Cellular, the largest remaining regional carrier. Additionally, the Big Three facilities-based providers have been buying the independent MVNOs (e.g., TracFone, Mint Mobile), reducing even this limited competitive option.

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<sup>82</sup> See Department of Justice, “Justice Department Settles with T-Mobile and Sprint by Requiring a Package of Divestitures to DISH,” Press Release (July 26, 2019). Available at: <https://www.justice.gov/opa/pr/justice-department-settles-t-mobile-and-sprint-their-proposed-merger-requiring-package>.

<sup>83</sup> See United States Response to Defendant DISH Network Corp.’s Motion for Relief From Judgement and Motion for Modification of Final Judgement, *United States v. Deutsche Telekom, A.G.*, Civil Action No. 1:19-cv-02232-TJK at 7 (filed Sept. 18, 2023)(“there is no more cost-effective way for DISH to catch up to the Big Three carriers and replace the competition that was lost when T-Mobile acquired Sprint than to purchase the 800 MHz spectrum”).

<sup>84</sup> Draft merger guidelines available at: [https://www.justice.gov/d9/2023-07/2023-draft-merger-guidelines\\_0.pdf](https://www.justice.gov/d9/2023-07/2023-draft-merger-guidelines_0.pdf).

<sup>85</sup> See *In re 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Service*, Report & Order, 16 FCCRcd 22668, at 22670 ¶ 6 (2001).

<sup>86</sup> PN at n.10 & n.11 (citing cases).

As our groups opined in our spectrum holding comments last year, we believe that to shape a more competitive market, the Commission must first recognize that a spectrum screen that triggers only when a transaction would allocate a third of the spectrum in a market to one carrier is a spectrum screen that will inevitably create 3-firm competition. That is even more true today and going forward, as the leading 5G mobile services rely on wider channels of contiguous spectrum for high-capacity and low-latency connectivity. The Bureau should recommend to the Commission that it consider how to restructure the screen to promote four-firm competition rather than three-firm competition.

Accordingly, PK and OTI continue to recommend the following policy changes with respect to spectrum holdings and market structure:

***Restructure the screen to support four-firm competition rather than three-firm competition.***

Since its adoption in 2004, the Commission has structured its screen to support three equal sized providers per market.<sup>87</sup> But as both traditional antitrust analysis and the Commission's own experience has demonstrated, subscribers need a minimum of four national providers to see vigorous competition between providers. Spectrum aggregation limits should reflect this reality.

***Convert the current screen into a genuine hard cap.*** At present, the screen merely requires the Commission to take a "hard look" at specific markets where a carrier exceeds its limits. Prior to adoption of the screen, the Commission used a hard cap to limit spectrum aggregation. A hard cap rather than a soft screen would make it more difficult for the largest providers to absorb smaller players.

***Adopt a weighting criteria that recognizes the different value of different spectrum frequencies.***

Although PK/OTI do not support the limited petition submitted by AT&T, our groups agree that the Commission's spectrum policies should reflect the differences in physical characteristics of the different

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<sup>87</sup> See Wireless Telecommunications Bureau and Office of Economics and Analytics, *T-Mobile License LLC, Cellco Partnership, Applications for 3.7-3.98 GHz*, ULS File No. 0009446137, ULS File No. 0009446983, Memorandum Opinion & Order Par. 3.

frequencies. Because carriers need a suitable mix of frequencies to offer an increasingly wider suite of services, the Commission should use this weighting criteria for all spectrum bands.

***Continue to use auction-specific limits in addition to general spectrum aggregation limits to promote new entry and enhance DEI.*** In addition to general spectrum aggregation limits, the Commission has used auction-specific limits to encourage new entrants, reduce concentration of licenses, and increase the likelihood of success for minority-owned and women-owned firms.<sup>88</sup> The Commission should continue this practice.

***Address the vertical integration of MVNOs with facilities based providers and adopt policies to enhance MVNO competition.*** MVNOs are not substitutes for facilities-based providers. But they do provide some limited price competition with facilities based providers (as well as competing with each other). As we described earlier in this section, the one Commission policy that has operated to create some emerging competition in the mobile marketplace is the substantial expansion of local access to unlicensed (6 GHz band) and shared (CBRS) spectrum being leveraged by the three largest cable companies, which recognize that where they have extensive backhaul and customer relationships, a Wi-Fi first MVNO strategy can support a competitive high-speed mobile data service. However, even this silver lining of competition resulted from the happenstance of a MVNO option being included in the sale of prime AWS-3 spectrum by the cable companies to Verizon years ago—a transaction that, at the time, contributed further to the aggregation of prime spectrum by the largest national carriers.

## **VII. Bridging the Digital Divide**

In 2021, Congress stated, “Access to affordable, reliable, high-speed broadband is essential to full participation in modern life in the United States;” and further found that “(t)he persistent ‘digital divide’ in the United States is a barrier to the economic competitiveness of the United States and equitable

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<sup>88</sup> See n.4 *supra*.

distribution of essential public services, including health care and education.” Congress made clear, on a bipartisan basis, through the passage of the *Infrastructure Investment and Jobs Act* that in order to effectively and equitably close the digital divide, it is imperative to simultaneously tackle gaps in broadband access, broadband affordability, and broadband adoption. Through the IIA, historic funding opportunities have become or will become available to address all parts of the digital divide; however, continuous investments will need to be made to harden networks so they are resilient, fill the affordability gap for low-income consumers, and sustain the growing digital equity field.

#### **A. The End of the ACP Stifles Competition, Innovation, and Economic Growth**

The historic funding of the Broadband Equity Access and Deployment (“BEAD”) program and the Digital Equity Act programs will not be fully understood until after funds are exhausted and projects are fully executed in the coming years. Yet, the positive impacts of the FCC’s Affordable Connectivity Program (“ACP”) are unmistakably evident as this program was a successor of the Covid-19 pandemic response program, the Emergency Broadband Benefit, which appropriated a quarter of the amount of funds as ACP. First, more than 23 million households quickly enrolled in the most successful and robust broadband subsidy that the nation has ever had. All sectors ranging from federal, state, and local governments; industry; and community-based organizations worked collaboratively to inform households about their eligibility and enroll people in ACP who participate in federal assistance programs or who earn up to 200% of the federal poverty level. The \$30 subsidy alongside the commitments made by ISPs to the White House to lower prices and/or increase speed offerings made affordable, reliable high-speed internet a reality for millions of people across the country.<sup>89</sup>

Unfortunately, due to Congressional inaction to get short and long-term funding, the once widely successful Affordable Connectivity Program met its demise on May 31, 2024, which has led households to

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<sup>89</sup> White House, “White House Announces ACP Eligible Plans from 20 Internet Service Providers” (2022). <https://www.whitehouse.gov/getinternet/#:~:text=To%20delivery%20maximum%20cost%20savings,more%20than%20%2430%20per%20month>.

make sacrifices in other parts of their lives to get internet access. The lapse in funding has also created feelings of frustration and distrust not only with the federal government but also with digital navigators who worked tirelessly as surrogates of the program.

As has been made clear by policymakers, ACP will also impact the success of the BEAD program. A study about the impact of ACP concluded that the program reduces the subsidy needed to incentivize providers to build in rural areas by 25% per household.<sup>90</sup> The supply side and demand side barriers to closing the digital divide are interconnected. Historic broadband deployment funding made available through the BEAD program will result in providers examining what revenues they expect to receive in order to provide a return on their investment. In order for an ISP to project its return on investment, the company must have an understanding of who will be able to sign up for broadband services once the infrastructure is deployed or upgraded in unserved and underserved communities. The absence of ACP will burden providers who are working to determine their return on investment which leaves the broader success of the BEAD program at serious risk. It will also create challenges in states' attempts to fulfill the statutory requirement for a low-cost service option offered by BEAD subgrantees. In fact, every state and territory incorporated ACP or a similar successor program into their plans for BEAD and Digital Equity Act funding.<sup>91</sup> It must also be noted that the macroeconomic impact of the BEAD program is estimated to add a total of \$84.8 billion to US GDP and the ACP program is estimated to add \$55.2 billion.<sup>92</sup> Again, this is all at risk if the program is not refunded in the short-term and long-term.

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<sup>90</sup> Boston Consulting Group & Common Sense Media, "Closing the Digital Divide Benefits Everyone, Not Just the Disconnected: An Analysis of How Universal Connectivity Benefits Education, Health Care, Government Services, and Employment" [https://www.common sense media.org/sites/default/files/research/report/2022-cs-bcg-closing-digital-divide\\_final-release-3-for-web.pdf](https://www.common sense media.org/sites/default/files/research/report/2022-cs-bcg-closing-digital-divide_final-release-3-for-web.pdf).

<sup>91</sup> Kathryn de Wit, "Testimony for the Record Submitted to the Senate Committee on Commerce, Science, and Transportation Subcommittee on Communications, Media, and Broadband for the Hearing The Future of Broadband Affordability" (May 2, 2024). <https://www.commerce.senate.gov/services/files/9661F498-7E52-46C8-B6C6-15639EE4BB16>.

<sup>92</sup> Matthew Sprinston & Edward Oughton, "The contribution of US broadband infrastructure subsidy and investment programs to GDP using Input-Output modeling" (February 2024). <https://arxiv.org/ftp/arxiv/papers/2311/2311.02431.pdf>.

Most critically, the impact of the loss of ACP on consumers demonstrates that a broadband subsidy is what allows millions of families the ability to access healthcare, jobs, and education with less fear or worry. A 2024 national study states the following about ACP recipients who were at risk and have now lost the subsidy: “65% of ACP participants fear losing their job or their household’s primary source of income; 75% of ACP participants fear losing access to important healthcare services, like online appointments or prescription medicine refills; [and] 81% of ACP parents worry about their children falling behind in school.”<sup>93</sup>

One of the additional strengths of ACP is that it was a program that enabled consumer choice by allowing participants to select an ISP and associated plan that best fit their needs. It simultaneously spurred competition among providers to offer innovative pricing models and service offerings to attract new customers or retain existing customers. This also ultimately led to increased transparency into the broadband market, which helped consumers better compare options and make informed decisions that fit their respective household budgets.

Currently, in July 2024, consumers are left to fill the gaps for their connectivity needs with temporary fixes ranging from hotspot rentals, commutes to public or public-adjacent locations that offer free WiFi, and enrollment in low-cost plans offered by ISPs that are temporary or not as robust an offering as ACP. It is clear that the absence of ACP puts a financial burden on consumers across varying zip codes, age groups, and racial identities but it also places the burden of the time tax on our most vulnerable populations who must navigate time-intensive government assistance programs or ISP-led internet discount offers, commute to libraries and community centers, or rebalance their home budgets in order to meet their connectivity needs.

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<sup>93</sup> Benenson Strategy Group, “The Impact and Importance of the Affordable Connectivity Program” (2024). <https://www.bsgco.com/acp-fact-sheet>.

## **B. Failure to Address Broadband Affordability Will Slow Broadband Adoption**

A delta remains between those who have and have not adopted broadband and much of what drives this disparity where broadband infrastructure *is* available is household income. According to the Pew Research Center, 87% of U.S. adults with annual household incomes of \$30,000 or less state they are internet users; however, only 57% of those within that income threshold actually subscribe to broadband at home. Meanwhile, 98% of adults in the U.S. with annual household incomes of more than \$70,000 report that they use the internet and 88% of that population say they have broadband at home.<sup>94</sup> There are also broadband adoption discrepancies among racial demographics. Pew Research Center reports that 68% of Black adults and 75% of Latino adults subscribe to broadband at home as compared to 83% of white adults who have home broadband subscriptions. The Affordable Connectivity Program filled a critical gap in closing the digital divide for the recipients who said they never had broadband and for those who had inconsistent connectivity due to cost.<sup>95</sup> The program made clear that the individual and nationwide effects of more households being connected to broadband cannot be overlooked in the areas of labor participation, healthcare, and education:

**Labor:** Access to affordable, reliable broadband provides increased economic opportunities beyond the industries available in one’s geographic location and flexibility for those with disabilities and those who are caretakers for people in their household.<sup>96</sup> Research shows there is a “a strong relationship between household broadband subscription, computer access, and labor market disparities” and that “broadband is an additional component of economic well-being.”<sup>97</sup> As Nicol Turner Lee states, in order to

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<sup>94</sup> Pew Research Center, “Internet, Broadband Fact Sheet” (2024). <https://www.pewresearch.org/internet/fact-sheet/internet-broadband/>.

<sup>95</sup>*Id.*

<sup>96</sup> Center on Rural Innovation and Rural Innovation Strategies, “The Rise of Remote Work in Rural America” (January 2022). <https://ruralinnovation.us/resources/reports/the-rise-of-remote-work-in-rural-america/>.

<sup>97</sup> Alvaro Sanchez and Adam Scavette, “Broadband Access, Computer Use, and Labor Market Attachment in Philadelphia,” (August 2020). Federal Reserve Bank of Philadelphia,



“harness the massive potential for job creation, broadband must be a part of a broader strategy of 21st century inclusive economic growth, especially in the production of new opportunities for individuals with or without a four-year degree.”<sup>98</sup> Because society is in the midst of the AI revolution, the populations where cost remains a major barrier to adopting broadband will also be left out of these technological changes as consumers, workers, and entrepreneurs. As Blair Levin states, “[W]e are going to discover that the cost of digital exclusion will be even greater than it was during COVID, as Artificial Intelligence magnifies those barriers and costs.”

**Healthcare:** Diabetes, heart disease, maternal care, and mental health challenges negatively impact many segments of the American population. Innovations in telehealth dramatically can improve access to better remedy these issues but patients must be able to adopt broadband in order to experience the benefits.<sup>99</sup> Access to high-speed internet provides patients with an opportunity to receive high-quality healthcare while saving time and money. These services are particularly important to rural communities, low-income communities, aging populations, and veterans. Rural communities are not just the broadband deserts; they are also healthcare deserts and research shows that the country is at risk for a long-term care crisis that will particularly impact rural communities due to the lack of healthcare providers and the larger population of aging adults.<sup>100</sup> Because the majority of this group will live on fixed incomes from social

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<https://www.philadelphiafed.org/-/media/frbp/assets/community-development/reports/broadband-access-computer-use-and-labor-market-attachment-in-philadelphia.pdf>.

<sup>98</sup> Nicol Turner Lee, “Testimony of Nicol Turner Lee Before the United States Senate Committee on Health, Education, Labor & Pensions Subcommittee on Employment and Workplace Safety Hearing on Connecting Workers and Communities: Preparing and Supporting the Broadband Workforce” (May 2022). [https://www.brookings.edu/wp-content/uploads/2022/05/GS\\_05032022\\_CongressionalTestimony\\_TurnerLee.pdf](https://www.brookings.edu/wp-content/uploads/2022/05/GS_05032022_CongressionalTestimony_TurnerLee.pdf).

<sup>99</sup> Alisa Valentin and Christy Gamble Hines, “Rural Black Maternal Health in the Age of Digital Deserts” (June 2022), *Black Women & Public Health; Strategies to Name, Locate, and Change Systems of Power*; Maria Magdalena, Bujnowska-Fedak & Urszula Grata-Borkowska, “Use of Telemedicine-Based Care for the Aging and Elderly: Promises and Pitfalls” (May 2015). <https://www.tandfonline.com/doi/full/10.2147/SHTT.S59498>.

<sup>100</sup> Fazal Khan and Julie Drissen, “Bridging the Telemedicine Infrastructure Gap: Implications for Long-Term Care in Rural America” *Public Policy & Aging Report*, (October 2018). <https://academic.oup.com/ppar/article-abstract/28/3/80/5124271>.

security, retirement savings, or pensions, it is absolutely critical for high-speed internet to be affordable to them. Similarly, it is critical that they are equipped with the skills necessary to navigate an ever changing technological landscape that is fraught with online threats ranging from disinformation to scams. In order for the country to create and sustain a more inclusive society, it is imperative that aging populations have the digital skills necessary to safely navigate the internet and also subsidy programs such as ACP to help fill the affordability gap.

**Education:** The COVID-19 public health crisis highlighted many consequences of the digital divide, from healthcare inequities to employment disadvantages, but the consequences of education were magnified during the pandemic. During the pandemic, K-12 schools, colleges, and universities switched modalities of instruction from synchronous or in-person instruction to asynchronous or distance learning. This switch meant that students had to use their home internet and connected devices to attend class, socialize with classmates, and complete assignments. 55 million students had to quickly switch and adapt to asynchronous learning.<sup>101</sup> For the millions of students who did not have home internet or access to a connected device during the pandemic, they became the youngest to be harmed by the digital divide and the “homework gap.” This gap causes issues for students because they have to find spaces with internet access to complete their assignments. They negotiate their lack of home internet access by spending extra time at libraries after school (often forgoing dinner and extracurriculars in order to finish their homework) or working in parking lots or fast-food restaurants with free Wi-Fi. Others just don’t complete their homework due to the futility of having affordable and fast internet in their homes.<sup>102</sup> The “homework gap”

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<sup>101</sup> Education Superhighway, “We Closed The Classroom Connectivity Gap. Now It’s Time To Take On The Home Access Gap,” (2020). <https://www.educationsuperhighway.org/blog/we-closed-the-classroom-connectivity-gap-now-its-time-to-take-on-the-home-access-gap/>.

<sup>102</sup> Clare McLaughlin, “The Homework Gap: The ‘Cruellest Part of the Digital Divide.’” National Education Association. (April 20, 2016). <https://www.nea.org/nea-today/all-news-articles/homework-gap-cruellest-part-digital-divide>.

is a visible consequence of the digital divide and a vital example of the importance of having both mobile and home internet access.

The FCC provided supplementary funding for libraries and schools through the Emergency Connectivity Fund and has been working on expanding its E-Rate program to curb the “homework gap.” This gap affects the most vulnerable students, like those from low and middle-income families and those whose primary language is not English. In 2020, 17 million students lacked the high-speed home internet access necessary to support their online learning, and 7 million students did not have a digital device like a laptop, computer, or tablet to use for their schoolwork.<sup>103</sup> A study from Michigan State University found that students who experience the homework gap tend to spend more time on their homework, have lower grade point averages, weaker digital skills, and have less interest in acquiring a college or university degree.<sup>104</sup> Policy interventions that robustly and creatively address the “homework gap” will help bolster digital agency and confidence of digitally excluded families and their children. Long-term funding measures that will allow students to work at home in an environment that may be more conducive and accessible than communal public spaces. This will also impact the economic and employment trajectories of our youngest and most vulnerable learners and should be considered a digital investment in our youth and the future of the United States.

The Affordable Connectivity Program, or any successor program that truly addresses the affordability gap, must have a permanent home. The home for such a program should not be one that is subject to temporary appropriations because the funding amounts and duration are uncertain. A path exists to house ACP under the Universal Service Fund but this must be addressed urgently because the fact remains that income inequality is an issue in the U.S. that is exacerbated by systemic barriers that inhibit

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<sup>103</sup> All4Ed, “Students of Color Caught in the Homework Gap” (2020).

[https://futureready.org/wp-content/uploads/2020/08/HomeworkGap\\_FINAL8.06.2020.pdf](https://futureready.org/wp-content/uploads/2020/08/HomeworkGap_FINAL8.06.2020.pdf)

<sup>104</sup> Keith Hampton, Laleah Fernandez, Craig Robertson, and Johannes M. Bauer, "Broadband and Student Performance Gaps" (2020). <https://doi.org/10.25335/BZGY-3V9>.

communities from accessing economic opportunities. Unless those issues are addressed, the need for a low-income broadband subsidy will remain.

## **VIII. Conclusion**

PK et al. urges the Commission to foster competition in the public interest and that requires the agency to create and sustain initiatives that remove barriers to entry, promote equity, and ensure transparency. The FCC plays a critical role in the lives of all Americans and the *Communications Marketplace Report* provides an opportunity for the agency to build a competitive landscape that benefits consumers.

/s/ \_\_\_\_\_

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