

April 1, 2024

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
45 L Street NE  
Washington, DC 20554

**Re: WC Docket No. 23-320, *Safeguarding and Securing the Open Internet***

Dear Ms. Dortch:

“Extraordinary claims require extraordinary evidence.”<sup>1</sup>

This aphorism, made famous by Carl Sagan,<sup>2</sup> is generally a useful guide for policymakers. But it is especially useful in the context of regulatory debates, because firms and industries subject to agency oversight are incentivized to make extraordinary claims about the potential harms of any rule governing their actions.

Indeed, in this proceeding and its predecessors, the ISP industry and its hired interest groups have routinely made wildly extraordinary claims alleging that catastrophic harm to broadband investment and deployment will (or did) follow the Commission’s restoration of its oversight authority. But the evidence provided for these extraordinary claims of doom are often little more than anti-regulatory rhetoric, misleading and inaccurate tallies of publicly-traded communications firms’ aggregate capital expenditures, or “frothy mix[es] of algebra and math jargon”<sup>3</sup> that rely on questionable applications of quasi-experimental statistical tools—without one look at the mountains of contradictory real-world evidence.

The claim that restoring light-touch Title II authority and basic Open Internet rules would harm—or did harm, from 2015 through 2018—ISPs’ broadband network investments is indeed

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<sup>1</sup> See Patrizio E. Tressoldi, *Extraordinary Claims Require Extraordinary Evidence: The Case of Non-Local Perception, a Classical and Bayesian Review of Evidences*, 2 *Frontiers in Psych.*, art. 117, at 1 (June 10, 2011).

<sup>2</sup> Sagan’s aphorism is based on Laplace’s Principle, which is central to the scientific method and is particularly apt for this proceeding and the evidence submitted in the record: “the weight of evidence for an extraordinary claim must be proportioned to its strangeness.” *Id.* (quoting Charles Coulston Gillispie, *Pierre-Simon LaPlace, 1749-1827: A Life in Exact Science* (2000)).

<sup>3</sup> Paul deSa, “Theory vs. Practice,” *Federal Communications Commission Blog* (Oct. 6, 2010).

extraordinary. Not only because mountains of evidence from the ISPs themselves demonstrate its falsity; it is also extraordinary because the mechanism by which this supposed harm would occur is illogical and unreasonable, and has been proven ever more outlandish over time. ISPs exist to generate economic returns for their shareholders. They do so by meeting the strong customer demand for robust and open broadband telecommunications services, not by creating artificial scarcity in the hopes that edge companies will pay for prioritized delivery.<sup>4</sup> The real-world record over the past decade bears out the claim’s falsity.

As noted in our initial comments, the claim that oversight authority, however limited, harms investment is based on the “old trope that regulation creates uncertainty, which in turn reduces the regulated industry’s investment.”<sup>5</sup> We noted that this supposed fear rarely ever changes behavior, in part because “uncertainty” itself is usually overstated. But it is also rarely true because there are many other factors that have a stronger relationship to a firm or industry’s investment incentives.

In this *ex parte*, we review recent ISP discussion of the factors that impact the industry’s investment in and deployment of broadband networks. This review covers ISP comments to investors and investment analysts, as well as financial data released after this proceeding’s comment and reply comment filing deadlines. The record reflects that ISPs are strongly committed to deploying and upgrading their networks ahead of consumer demand, because they are confident that doing so is key to future financial prosperity in the face of increasing competition. Other factors that could impact ISP investment decisions—such as the state of the broader economy, supply costs, interest rates, corporate taxes, or supposed regulatory uncertainty—are either not material or simply warrant no mention by ISPs in their communications with investors and the investment community.

In other words, at a time when fiber and advanced DOCSIS deployment is happening at a historic level—and on the eve of the restoration of Title II classification for broadband internet access service (“BIAS”)—the impact of FCC regulation is simply a non-factor in the minds of ISP executives and investment analysts. Title II and Net Neutrality were not mentioned, or even hinted at, by a single ISP on any full-year 2023 investor calls or at other investor conference

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<sup>4</sup> The 2015 *Open Internet Order* rules did not, and the proposed rules in this proceeding would not, prohibit ISPs from offering their own customers quality of service enhancements for additional fees. Mobile carriers prioritize their postpaid customers ahead of their prepaid customers during periods of network congestion. For example, AT&T’s newly launched fixed wireless service aimed at businesses comes in two tiers, a \$60 standard tier and a \$100 tier, the latter including “a higher level of priority for the first 250GB of data used in each billing period—a benefit when the network is busy.” The latter may be more of a comfort expense for some businesses, as AT&T is strongly incentivized to minimize congestion for all of its customers. See “AT&T Introduces AT&T Internet Air™ for Business that Delivers Reliable Internet for a Low Price, with Our Best Wireless Speeds at Your Business Locations,” *AT&T* (Mar. 26, 2024).

<sup>5</sup> See Comments of Free Press, WC Docket No. 23-320, at 89 (filed Dec. 14, 2023) (“Free Press Comments”).

appearances following these calls, and no analyst asked any question about or related to this proceeding.

In fact, despite the current backdrop of elevated inflation, increased interest rates, and the potential of higher taxes (if Congress allows bonus depreciation to expire), ISPs have been incredibly bullish about the future of their businesses precisely because of the network investments they are making. The only factors ISPs cite as driving this bullishness are strong consumer demand for robust open networks, the availability of new technologies, and the need to remain competitive. ISPs and their investors understand that this consumer demand for robust open telecom services is driven entirely by consumer demand for what they can do with the connection: send and receive the information of their choosing.

This letter is organized as follows: We first present capital expenditure (“capex”) data published by ISPs and the U.S. Census Bureau after this proceeding’s comment and reply cycle. We then analyze ISPs’ most recent comments on the state of their businesses, and examine their financial performance from 2012 to 2023. This analysis (along with our prior reports<sup>6</sup> and filings<sup>7</sup> in related proceedings) demonstrates that ISPs have had and continue to generate robust cash flows that are used to fund network upgrades and return value to shareholders. Title II—its 2015 restoration, its 2018 repeal, and its pending re-restoration—had no impact on ISPs’ financial performance, and in the future will not have any.

This evidence should be afforded the appropriate weight as the Commission examines the record. We believe that the ISPs’ own words to their shareholders, and to industry analysts through channels governed by the SEC,<sup>8</sup> should be afforded significantly more weight than evidence-free tropes, vague threats, dubious aggregate capital expenditure tallies, or nonsensical math jargon foisted on the Commission this docket or elsewhere.

### **Recently Released Census Bureau Data and ISP Capital Expenditures Data Reflect Elevated Levels of Broadband Investment and Deployment in 2022 and 2023, a Reversal of Trump-Era Declines**

On February 28, 2024, the Census Bureau released the results for the 2022 Annual Capital Expenditures Survey (“ACES”) and revised data for the 2021 survey. As we explained in our initial comments, the ACES is the “best source to understand how telecom industry capital spending in aggregate is changing over time.”<sup>9</sup> We present the updated and revised ACES data

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<sup>6</sup> See, e.g., S. Derek Turner, Free Press, “It’s Working: How the Internet Access and Online Video Markets Are Thriving in the Title II Era” (May 15, 2017) (“It’s Working”).

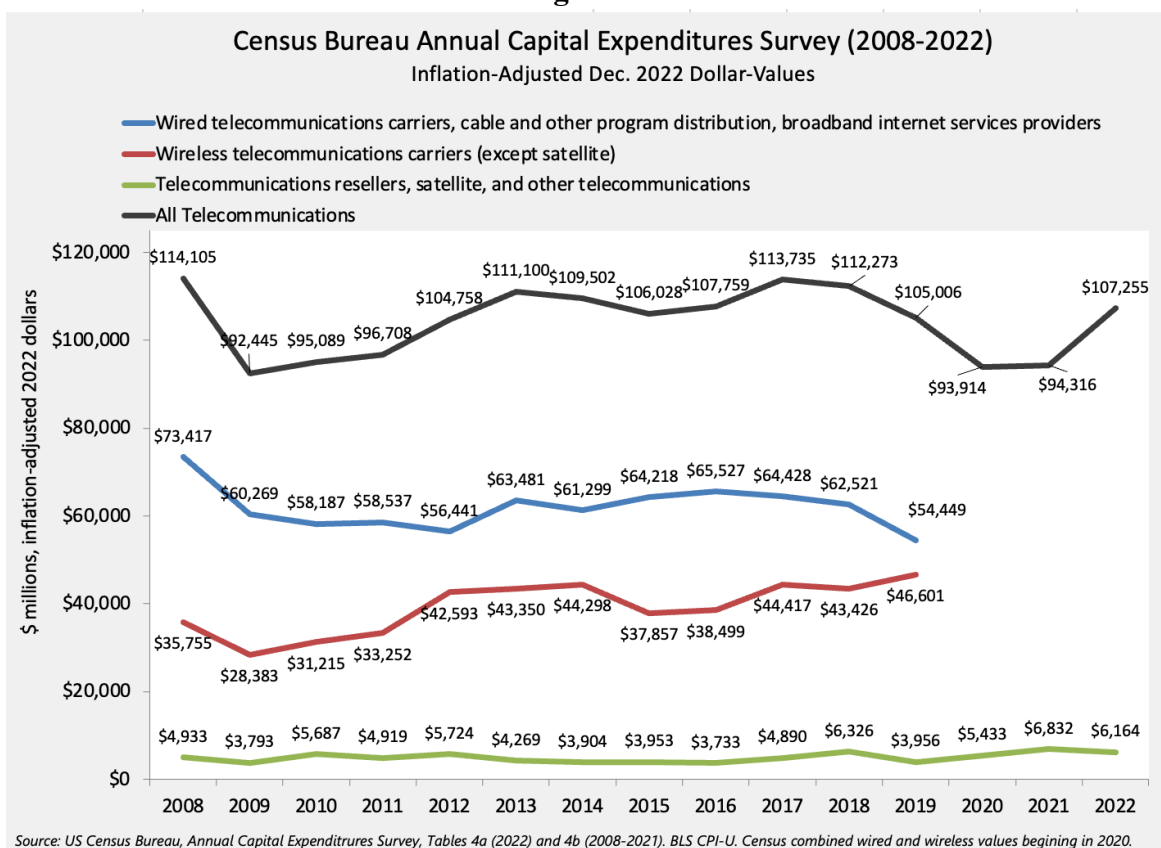
<sup>7</sup> See Comments of Free Press, *In the Matter of Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 20-269, at 32–35 (filed Sept. 18, 2020) (“Free Press 2020 Section 706 Comments”).

<sup>8</sup> This assertion is supported by the strict rules of candor in corporate disclosures. See 17 C.F.R. § 240.10b-5.

<sup>9</sup> Free Press Comments at 92.

for the U.S. telecommunications industry (which includes all wired, wireless, and satellite ISPs) below in Figure 1. Total U.S. *annual* telecommunications industry investment was \$4.2 billion higher in 2017 than it was in 2014 (inflation-adjusted values).<sup>10</sup> As we also noted in our initial comments, 2017—the last year before the repeal of the 2015 *Open Internet Order*—was the peak year for U.S. telecom industry investments in the last decade and a half. The Pai Commission’s *RIF Order* was followed by a sharp and continuous decline in telecom capital spending, with total U.S. annual telecommunications industry investment decreasing by nearly \$19 billion in 2020 as compared to 2017 (inflation-adjusted values). And as we discuss in detail below, this drop occurred despite the Trump Administration’s corporate tax cuts.

**Figure 1:**



The newly released data show a sharp increase in telecom industry capital spending in 2022, 13 percent higher (inflation-adjusted) than 2021, driven entirely by increased wired and terrestrial wireless investment (a 15.6 percent increase, inflation-adjusted).<sup>11</sup> These 2022

<sup>10</sup> CPI-U-adjusted, presented in December 2022 dollar values. The nominal figures were \$86.6 billion in 2014, increasing to \$94.5 billion in 2017 (a 9 percent increase).

<sup>11</sup> As Figure 1 reflects, capital investments in the “telecommunications resellers, satellite, and other telecommunications” industry declined by about 10 percent in 2022 as compared to 2021 (inflation-adjusted). However, capital investments in the satellite telecom sector are even more “lumpy” than in the wired and wireless sectors, and changes year-to-year or even within a period of years are rarely reflective of anything other than the industry’s long technology cycle. Of

increases were largely driven by ISPs' fiber-to-the-home ("FTTH") investments (e.g., Charter, AT&T, Frontier, Altice, and others), DOCSIS 4.0 preparation work (e.g., Comcast and Charter), and wireless carrier 5G expansion (e.g., AT&T, Verizon, T-Mobile, and DISH).

This increase in telecom industry capital investment in 2022 is also reflected in the capital intensity data. As we explained in our initial comments, capital intensity "is of particular interest to investors because it offers them a simple way to gauge how a company's investments are changing relative to its overall business. . . . The capital intensity metric is also useful when examining individual companies, as mergers, acquisitions and divestments makes it nearly impossible to reliably track changes in capital investments over longer time periods."<sup>12</sup> As Figure 2 below shows, the entire U.S. telecom industry reinvested \$1.61 for every \$10 in revenue in 2022, the highest capital intensity level since at least 2008. And this comes just two years after the U.S. telecom industry's capital intensity had reached a record low (since at least 2008) of 13.1 percent.<sup>13</sup>

As was the case in our initial comments and all of our filings on this matter, we are not attributing these swings in capital intensity to anything other than the cyclical nature of investment in this industry, as is clearly shown in the Census data presented in Figures 1 and 2. Indeed, as we noted in our initial comments, the Census data reflect how "wired and wireless carriers sometimes follow different trajectories," and how sometimes one industry sector is in a period of heightened investment while the other will be in a maintenance and "harvesting" phase (which we discuss below in more detail).<sup>14</sup>

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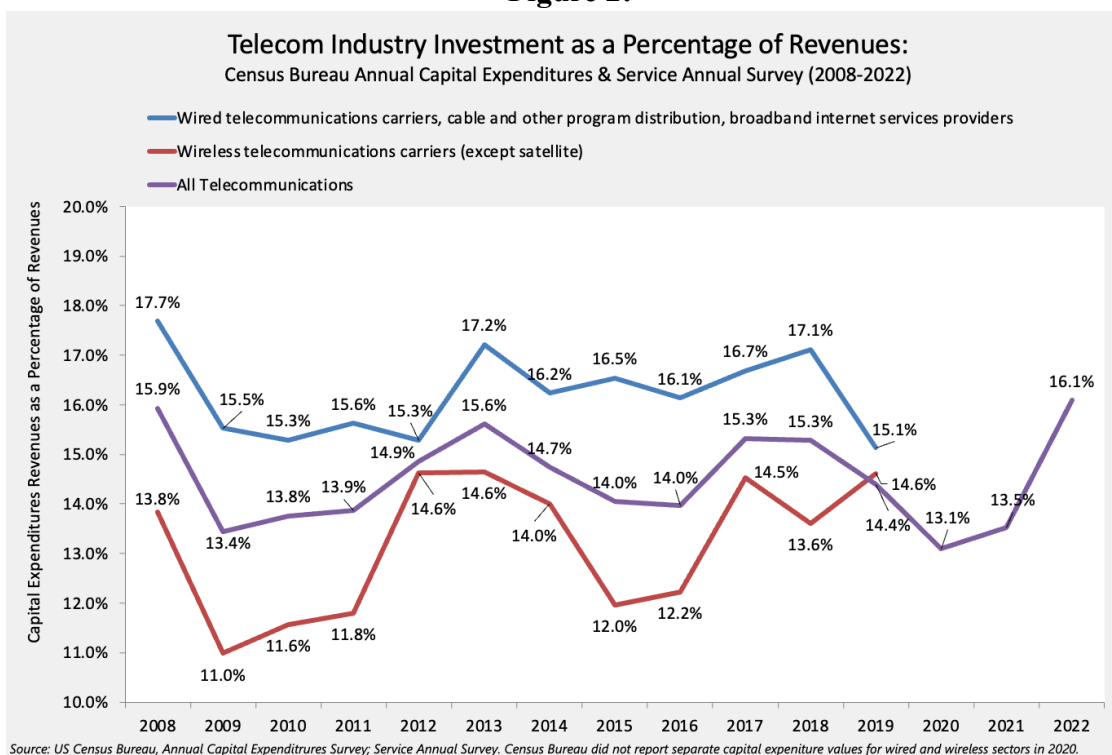
course, deployment by Low Earth Orbit ("LEO") broadband providers like Starlink are a new development and have certainly contributed to the elevated levels since 2018. Starlink is a private company, so we do not have information about its specific spending. We can note that Starlink was publicly unveiled in January of 2015, just as it was clear that the Commission would shortly be reclassifying BIAS under Title II. The company then moved into R&D, receiving FCC approval in May 2018 to launch its first satellites. At the time Starlink stated its initial investments to go commercial would be approximately \$10 billion. Starlink launched 60 satellites in May 2019 and users began signing up in 2021. *See, e.g.,* Dominic Gates, "Elon Musk touts launch of 'SpaceX Seattle,'" *Seattle Times* (Jan. 16, 2015); Michael Baylor, "With Block 5, SpaceX to increase launch cadence and lower prices," *NASA Spaceflight* (May 17, 2018); Press Release, "Starlink Mission - Mission Overview," *Space-X* (May 2019); Michael Sheetz, "SpaceX says its Starlink satellite internet service now has over 10,000 users," *CNBC* (Feb. 4, 2021).

<sup>12</sup> Free Press Comments at 96–97.

<sup>13</sup> Values presented in Figure 2 differ slightly in certain years from those we presented in our initial comments. This difference is due to the Census Bureau's revisions to prior years' revenue data, as published in the 2022 Services Annual Survey.

<sup>14</sup> Free Press Comments at 93, 127.

**Figure 2:**



We next present updated data of company-specific capital investments, which indicate that ISP capital expenditure and intensity were not negatively impacted by the 2015 *Open Internet Order*. The data below in Figure 3 capture the (inflation-adjusted) capital expenditures for all U.S. ISPs that were publicly traded when the Commission adopted the 2015 *Open Internet Order*. Where possible, we present *pro forma* results that account for mergers, acquisitions, and divestitures.<sup>15</sup>

<sup>15</sup> We have updated the notes in Figure 3 for this tally, as certain factors make this time series more difficult to present in a meaningful way. For example, while we always try to present *pro forma* results, some companies made partial divestments to private carriers or acquired assets from private carriers, which we cannot track. Also, certain companies may change the way they report their data, which can make prior results incomparable to current and future results. For these and other reasons we again repeat the important caveat that we stressed in our initial comments: “there’s little informational value to be found in aggregate industry data, particularly aggregated data sourced from publicly-traded company SEC filings.” *Id.* at 102. There is, however, utility in this information when examining each company’s trajectory, and comparing an individual ISP’s or groupings of ISPs’ investment patterns over time.

**Figure 3:**

Capital Expenditures (inflation-adjusted Dec. 2023 thousands \$)		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cable	Comcast (cable segment) (1)	6,574,456	7,111,429	8,041,583	9,130,176	9,650,718	9,927,025	9,429,783	8,247,273	7,778,048	7,624,386	7,821,528	8,241,000
	Charter (pro forma)	7,229,096	7,370,720	9,212,028	9,038,096	9,585,923	10,801,768	11,141,625	8,588,672	8,731,904	8,400,027	9,690,096	11,115,000
	Altice USA (pro forma)	1,734,776	1,681,860	1,664,067	1,679,281	1,214,181	1,183,764	1,408,532	1,617,881	1,264,689	1,355,133	1,978,410	1,704,811
	Wide Open West	211,355	292,065	329,057	300,751	365,269	374,908	383,516	295,441	275,676	228,512	172,801	268,900
	Cable ONE (2)	209,224	186,833	231,738	209,889	186,781	223,181	265,892	313,170	345,306	431,206	427,967	371,028
ILEC/Wireless	AT&T (pro forma) (3)	27,030,046	28,167,913	27,997,928	25,957,454	28,469,364	26,814,665	25,947,471	23,438,300	18,458,880	18,183,005	20,283,471	17,853,000
	Verizon	21,609,800	21,854,185	22,456,603	23,052,398	21,673,460	21,460,442	20,339,418	21,413,784	21,422,899	22,318,657	23,860,415	18,767,000
ILEC	Lumen (4)	4,892,432	5,012,090	5,169,029	5,318,587	5,482,208	5,257,168	3,876,675	4,330,744	4,391,270	3,190,580	3,117,036	3,100,000
	Frontier	999,872	835,372	898,860	1,119,225	1,779,971	1,478,228	1,455,432	1,463,476	1,390,746	1,875,841	2,829,723	3,211,000
	Consolidated Comm. (pro forma)	359,348	346,124	325,364	324,346	307,730	287,259	298,920	277,181	256,202	528,477	640,750	515,035
Mixed ILEC/Cable	TDS Telecom (Wireline and Cable)	211,870	195,303	223,959	249,013	206,046	249,865	283,154	290,243	344,768	452,127	574,470	577,000
	Shenandoah Telecom. Co. (pro forma)	118,975	154,032	89,131	90,367	220,090	182,276	166,839	165,676	141,842	176,143	195,961	256,550
Wireless	Sprint (5)	5,686,016	9,196,289	7,393,658	14,232,181	9,476,660	12,046,068	14,970,681	13,918,542	2,753,229	N/A	N/A	N/A
	T-Mobile	3,875,736	5,297,705	5,639,297	6,126,556	5,973,891	6,516,399	6,765,561	7,628,937	12,993,638	13,561,065	14,437,995	9,801,000
	DISH (mobile wireless segment)	0	0	0	0	0	0	0	0	113,050	1,113,402	2,682,966	2,586,000
	US Cellular	1,117,895	970,699	728,412	691,316	566,682	584,133	629,069	847,204	1,107,390	857,738	740,606	611,000
Companies that went private	GCI (6)	195,107	237,645	230,051	228,559	248,355	235,628	200,122	177,242	173,219	N/A	N/A	N/A
	Mediacom	336,624	347,986	336,478	373,825	425,837	425,258	407,479	354,048	377,954	373,967	N/A	N/A
	Cincinatti Bell (pro forma)	594,404	372,735	364,466	496,238	488,178	380,502	324,708	267,150	263,311	321,478	498,974	N/A
	Windstream (7)	1,471,203	1,106,924	1,027,405	1,368,619	1,257,541	1,130,571	1,001,464	1,048,665	1,120,133	N/A	N/A	N/A
	Alaska Communications System	78,681	63,404	66,930	62,870	51,202	40,546	49,066	54,317	59,099	N/A	N/A	N/A
	Otelco	8,493	8,199	7,857	8,575	8,740	10,589	9,747	14,850	11,818	N/A	N/A	N/A
Aggregate Total (companies reporting all periods)		81,860,896	88,672,619	90,400,714	97,519,633	95,158,972	97,387,150	97,362,568	92,836,522	81,769,539	80,296,299	89,454,196	78,978,324

(1) Starting in Q1 2023, Comcast changed segment reporting, expanding the "Cable" segment to "Connectivity and Platforms." Restated (inflation-adjusted) capital expenditures for this new segment were \$8.632B (2021) and \$8.388B (2022).

(2) Cable One acquired five small cable companies since becoming public in 2015. It did not report pro forma results. Therefore a portion of its increased capital expenditures during this time are due to these acquisitions.

(3) AT&T did not report pro forma w/ or w/o DTV or Warner Media.

(4) In the fall of 2022 Lumen spun off a portion of its assets to private equity firm Apollo Global. Lumen's results are pro forma through 2022, and as-reported for 2023.

(5) Accounting standard changes resulted in Sprint substantially revising its values, but only did so historically beginning with June 30, 2016 results. Prior Sprint periods are Free Press' revised estimates.

(6) Liberty Global acquired GCI Liberty in 2020, then later spun itself off into a new company called Liberty Broadband. Results shown are for GCI.

(7) Windstream exited bankruptcy as a private company. The value shown is trailing-12-months from June 30, 2020.

Source: Free Press analysis of company SEC filings. Values are presented in December 2023 inflation-adjusted thousands of dollars. Where possible the most-recent or restated values are presented

We will not repeat our analysis of the 2012–2023 data again here, but reiterate that ISP industry investments are, by companies' own repeated admission, "lumpy." There are periods of higher investment, followed by lulls. And as we discuss below, there are also periods where companies are able to deploy broadband to more locations at a lower cost than previously incurred. With those caveats in mind, we note that for companies that were public from 2012 to 2023, aggregate capital investments declined on an inflation-adjusted basis in 2023 (see Figure 4 below).

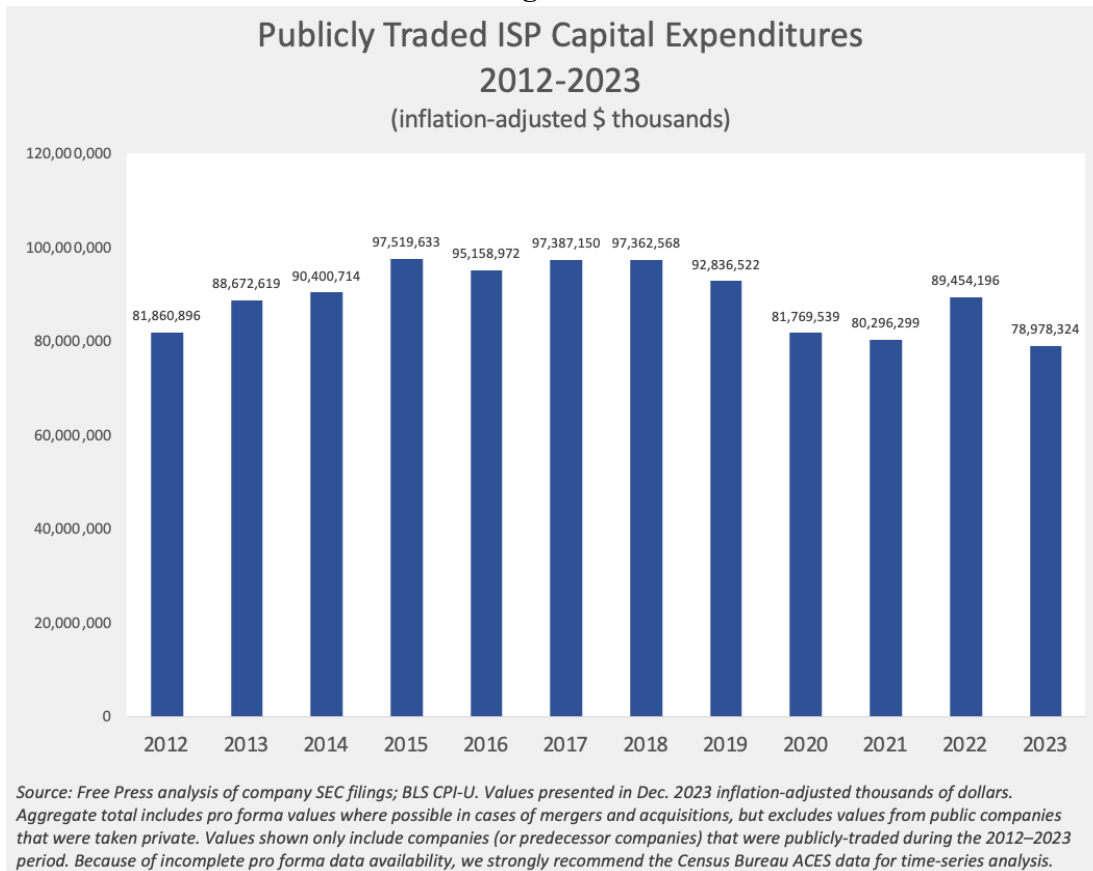
Of the fifteen publicly-traded companies we tracked from 2022 to 2023,<sup>16</sup> five reported increased capital spending last year, while ten reported reduced investment.<sup>17</sup> Below we cover in detail each ISP's own explanation for why its capital spending increased or declined in 2023. For now, we note that the aggregate decline in 2023 largely reflects reduced spending at the major wireless carriers—AT&T, T-Mobile and Verizon—which all made substantial 5G-related investments in 2022, and began to return last year to what they would describe as a "normal" level of spending. Meanwhile, Charter's total capital spending increased 15 percent last year, equaling (on an inflation-adjusted basis) its highest annual spend since it completed the

<sup>16</sup> We present US Cellular's and TDS's wireline results separately. Both companies are publicly traded, but TDS is the parent company of US Cellular.

<sup>17</sup> We present in the notes to Figure 3 the *pro forma* 2021 and 2022 Comcast "Platforms and Connectivity" segment results, which shows a slight decline in 2023 in inflation-adjusted investment. However, illustrating the issues with putting too much stock in this data, Comcast actually increased its network capital spending for line extensions, scalable infrastructure, and upgrades/rebuilds during 2023. See Figure 30 below.

integration of its Time Warner Cable and Bright House network acquisitions (see Figure 31 below).

**Figure 4:**

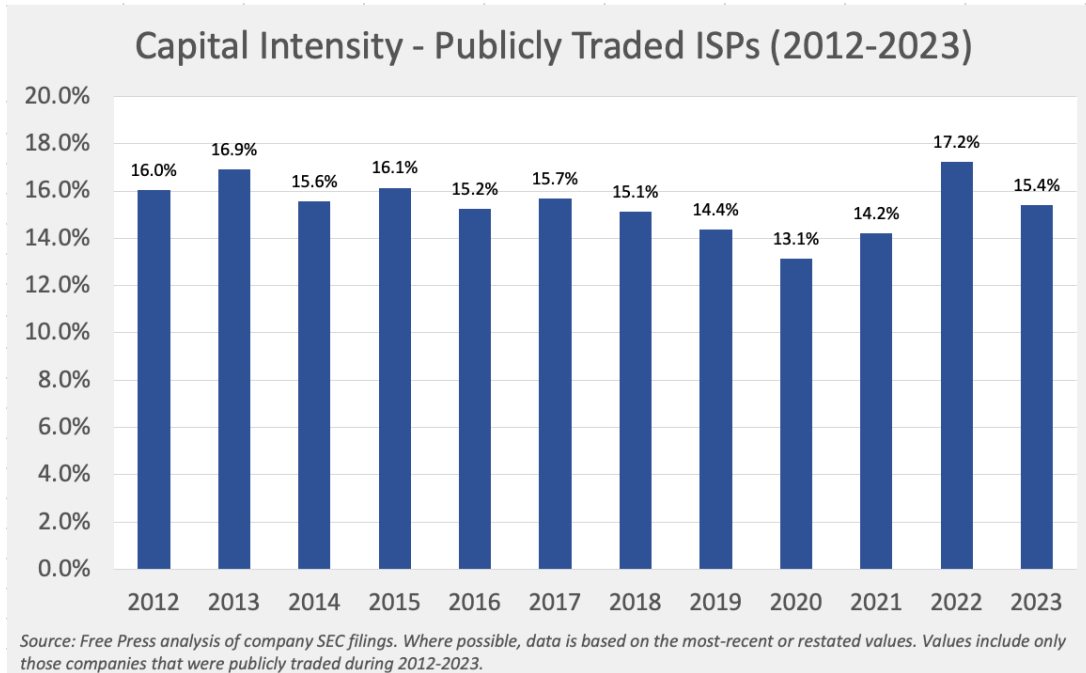


Because of the caveats we discussed above that limit the utility of both company-specific and aggregate capex data, we suggest that capital intensity offers a more informative reflection of the industry’s overall investment pattern. We’ve updated that data below in Figure 5 for the publicly-traded ISPs in aggregate, and in the next section discuss capital intensities for individual ISPs.

While the aggregate capital intensity value for the publicly-traded companies did decline in 2023, this value was still higher than it was in any year since the *RIF Order* except 2022. Again, the Commission generally should not afford much analytical weight to aggregate data in its policy analysis (and certainly, such data have no bearing whatsoever on the legal analysis of whether broadband internet access service is properly classified as a telecommunications service or an information service). While aggregate industry-wide figures may make for easily repeatable talking points, they obscure what is actually happening in this industry at any point in time. The simple fact now is that the three major U.S. wireless carriers are all coming off their peak spending period for 5G deployment. Their 2023 declines are unremarkable—or certainly no more remarkable than Charter’s one year increase in capital spending as it confidently deploys FTTH services to rural areas.



**Figure 5:**



### **Consumer Demand for Robust, Open Telecom Services Remains High, and Follows ISPs’ Deployment of Higher-Capacity Networks**

As we noted in our initial comments, “broadband provider company investments, particularly those in core network services, accelerated following the Commission’s 2015 vote. And much more relevant than the dollars these ISPs spent is this encouraging fact: the transmission capabilities of broadband services offered by carriers large and small increased dramatically in the nearly three-year period beginning in mid-2015 under restored common carriage.”<sup>18</sup> We stated, “the data provides evidence supporting the argument that settling the controversy about whether broadband providers could discriminate against streaming video (by blocking, throttling, or discriminating through paid-priority arrangements) produced a positive response from those broadband providers. Many or all of them apparently sought to gain share in a market where internet users demand transmission capacities that can adequately support streaming video.”<sup>19</sup>

We demonstrated this reality in part by using FCC Form 477 deployment data, which showed that competitive higher speed services were increasingly available as wireless carriers finished their nationwide LTE upgrades, cable providers began DOCSIS 3.1 upgrades, and ILECs continued to deploy fiber-to-the-node (Very high-speed DSL, or “VDSL”) and FTTH networks. The most recent FCC broadband deployment data further confirms that this pace of deployment continues, unimpacted by the 2017 *RIF Order* or the pending restoration of Title II classification of BIAS. As of June 30, 2023, at least one terrestrial provider of 25 megabits per

<sup>18</sup> Free Press Comments at 78.

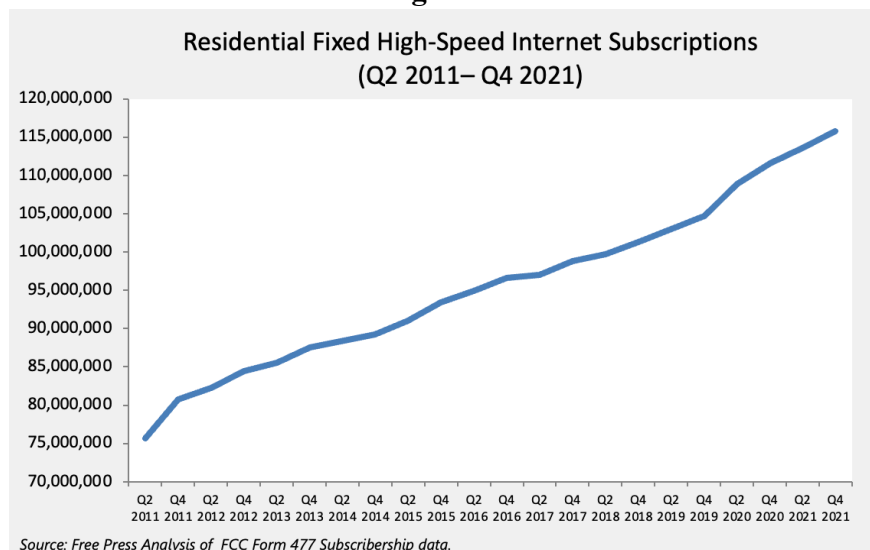
<sup>19</sup> *Id.* at 78–79.

second (“Mbps”) downstream and 3 Mbps upstream broadband is available at nearly 95 percent of all locations, with 92 percent of locations served by at least one terrestrial ISP offering 100 Mbps downstream/20 Mbps upstream service. Between June 2022 and June 2023, terrestrial coverage at this higher 100/20 Mbps level increased by 8.3 million locations, a nearly 6-percent increase. During that time, availability of terrestrial service at 100/20 Mbps in rural areas increased by more than 14 percent, from 24.5 million rural locations in June 2022 to 28 million in June 2023.

The Form 477 subscribership data also reflects growing consumer demand for higher transmission speed services, uninterrupted by the 2015 *Open Internet Order*, the 2017 *RIF Order*, or the current Commission’s proposal to restore Title II oversight authority. Fixed and mobile subscription growth was remarkably linear through these regulatory “eras.”

For example, between the end of 2012 and the end of 2014, the number of fixed line subscriptions increased at a compound annual growth rate (“CAGR”) of 2.8 percent. Between the end of 2014 and the end of 2016, the CAGR was 4.1 percent. During the first two years of the Trump administration (*i.e.*, from the end of 2016 to the end of 2018), fixed line subscriptions grew at a CAGR of 2.9 percent. The rate of subscriber growth did temporarily accelerate in 2020 (to 6.6 percent) due to the “pandemic pull-forward.”<sup>20</sup> In 2021, this rate of growth decelerated (to 3.7 percent) back closer to “normal” levels (see Figure 6).

**Figure 6:**

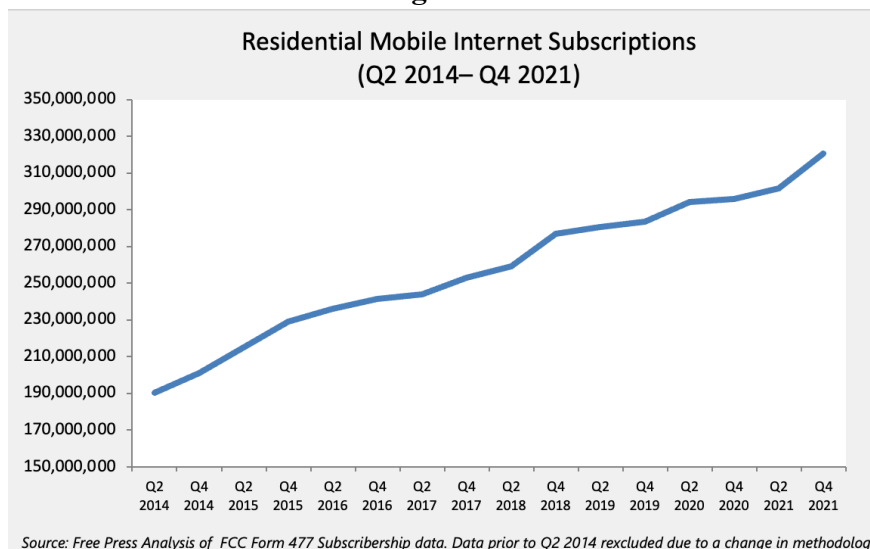


The mobile subscription data reflects steady growth, with both periodic acceleration and deceleration. Unlike what was seen in fixed lines, there’s little to indicate that there was a pandemic pull-forward in residential mobile subscriptions in 2020. However, residential mobile

<sup>20</sup> See, e.g., *id.* at 121 n.236 (citing numerous ISP comments attributing the growth in home internet subscriptions seen in mid- to late-2020 to pandemic-related office and school closures “pulling forward” consumer demand).

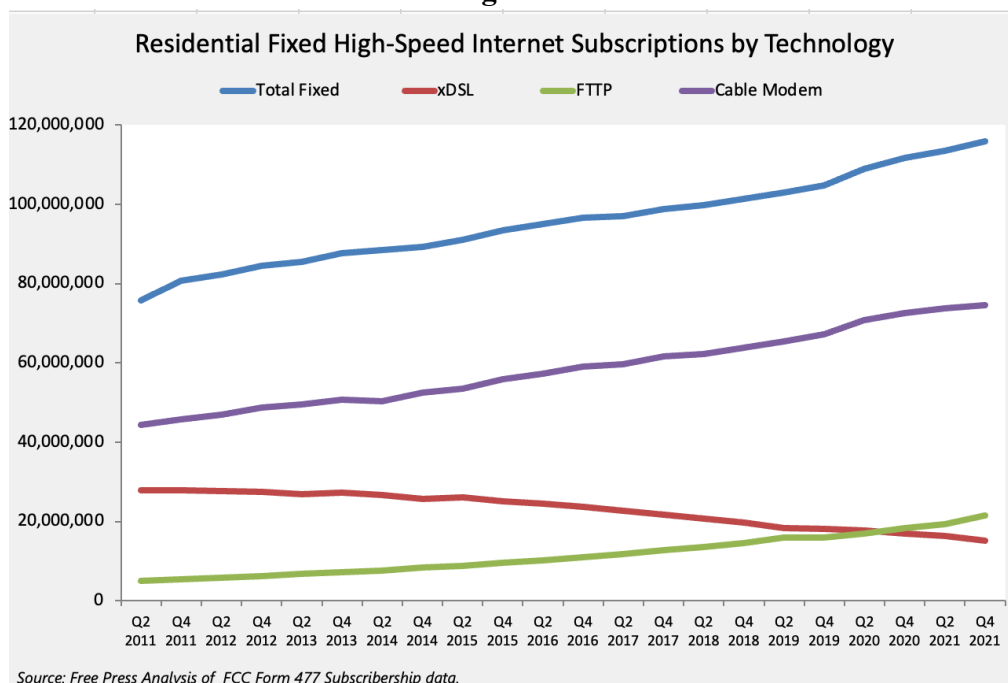
subscriptions did increase sharply during the second half of 2021, possibly suggesting that the “great reopening” positively impacted demand for mobile data lines (see Figure 7).

**Figure 7:**



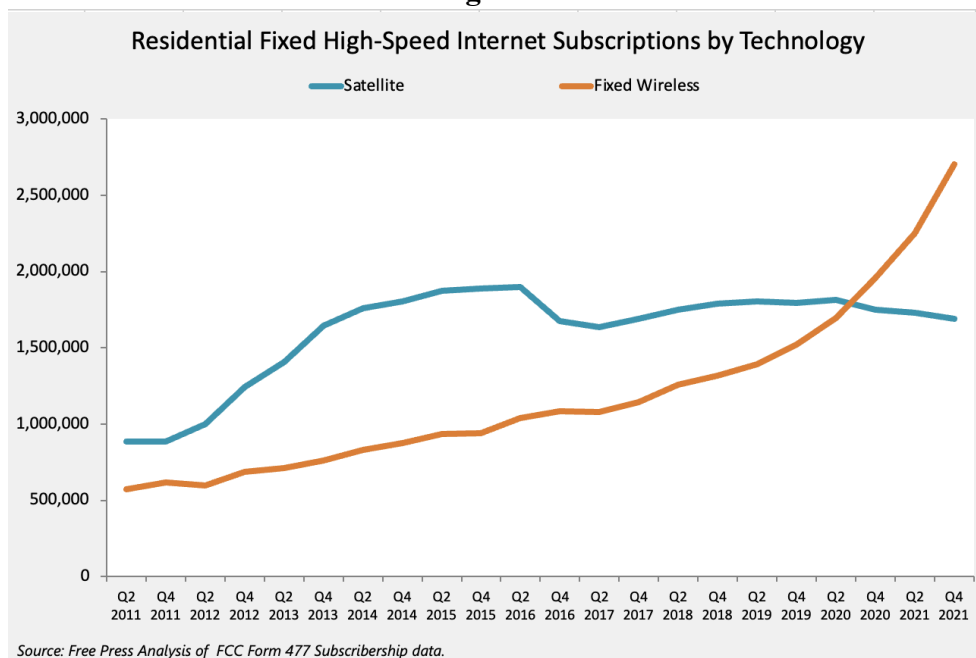
The Form 477 subscriber data for each fixed line technology also shows remarkably consistent growth, with no sign of any impact due to changes in FCC regulatory authority or Net Neutrality policy. Residential subscriptions for cable modem and fiber-to-the-premise (“FTTP”) have grown steadily, the latter offsetting the continued decline in DSL lines (see Figure 8).

**Figure 8:**



During this time demand for satellite services leveled off, as terrestrial options for rural residential households increased (see Figure 9). It is likely that more recent subscribership data would show a return to growth in residential satellite subscriptions, as LEO-operator Starlink began signing up U.S. customers in 2021.

**Figure 9:**

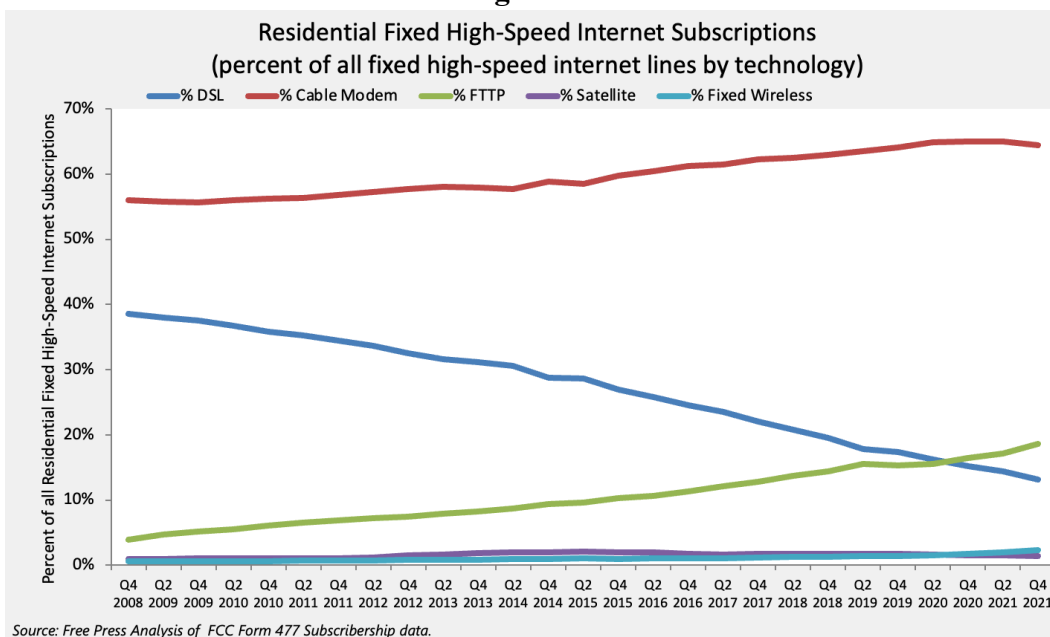


Residential fixed wireless services (which are, in some cases, the only terrestrial option available for rural households) also saw consistent growth between 2012 and 2019, accelerating sharply thereafter as Verizon and T-Mobile began heavily marketing their fixed wireless products (see Figure 9). Such services are selectively marketed by these carriers, depending on where they have excess capacity not needed for their mobile subscribers. This is often in less densely populated areas, but also includes urban areas where there is ample demand for a third option other than an ILEC or cable ISP’s wired services.<sup>21</sup>

<sup>21</sup> Verizon and T-Mobile both manage their fixed wireless deployments and marketing to maintain a balance between growth and impact on capacity available for mobile customers. Verizon states that it deployed fixed wireless services to areas that include a potential addressable market of 50 million customers, but even though it saw accelerating growth for this service upon launch, it now is purposefully marketing that service in a manner (including a recent price increase) to produce a customer growth rate of approximately 350,000 to 400,000 subscribers per quarter. *See, e.g.*, Comments of Hans Vesterberg, Verizon CEO, Q4 2023 Investor Call (Jan. 23, 2024) (“On fixed wireless access, we’re consistently adding more than 350,000 subscribers per quarter, which is part of our plan for steady, sustainable growth that exceeds what we expected at launch. Just three years [after] the launch, we serve more than 3 million fixed wireless access customers, well ahead of our stated goal of 4 million to 5 million subscribers by the end of 2025.”); Comments of Joe Russo, Verizon CFO, Verizon Investor Day (Feb. 5, 2024) (“We are absolutely building ahead of the capacity needed for the business units to continue to deliver the 400,000 broadband adds a quarter. And my team is doing a terrific job. Now we pass over 50

The relative growth of FTTH and more recent residential fixed wireless services has finally put a dent in cable modem’s dominant market share. As Figure 10 below shows, cable modem’s share of all residential lines peaked at 65 percent in 2021. This most recent Form 477 subscribership data is of course more than two years out-of-date, and the subscriber totals released by individual ISPs suggests further erosion of cable’s market dominance in 2022 and 2023.<sup>22</sup>

**Figure 10:**



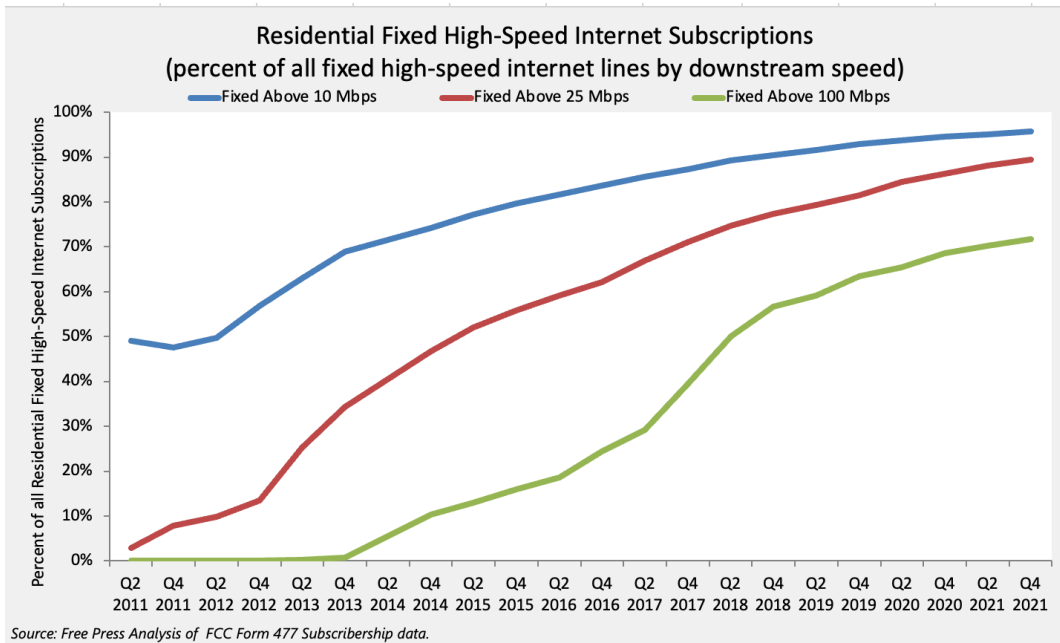
The Form 477 subscribership data also reflect that consumer uptake of faster services reliably followed their deployment (see Figure 11). This data in particular shows the uptick in subscriptions to 100 Mbps-level services that followed the cable industry’s DOCSIS 3.1 upgrades made from 2014 to 2017 (see Figure 12).<sup>23</sup>

million households with fixed wireless access and as Sampath mentioned, over 17.5 million [open for sale] in the FiOS footprint, and we’ll continue that build in 2024.”).

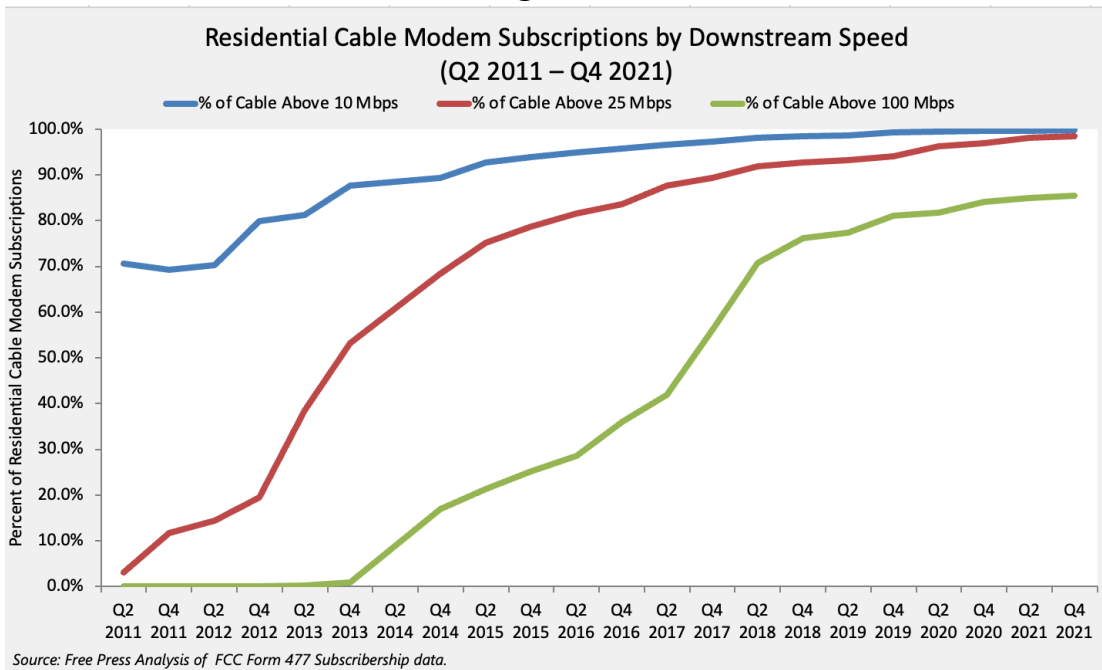
<sup>22</sup> Estimates from S&P Global suggest cable’s market share peaked in the fourth quarter of 2021, at 68.5 percent of all U.S. broadband connections and 69.1 percent of all U.S. residential broadband connections. At the end of 2023, S&P Global estimated cable’s share was 63 percent of all U.S. broadband connections and 64 percent of all residential U.S. broadband connections. See John Fletcher & Mau Rodriguez, “Broadband market share Q4 2023: Historic cable losses, broadband subsidy anxiety,” *S&P Global* (Mar. 22, 2024).

<sup>23</sup> See generally “It’s Working” (describing the rollout and deployment plans of DOCSIS 3.1 by various publicly-traded cable ISPs from 2014 to 2017).

**Figure 11:**

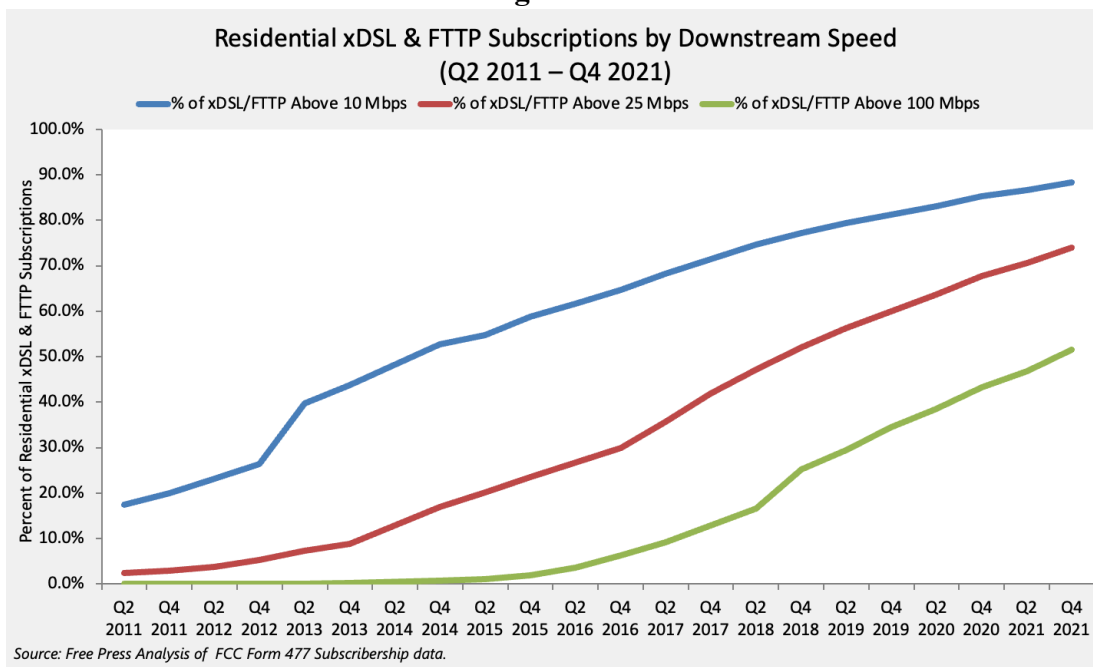


**Figure 12:**



The Commission’s subscribership data for ILEC technologies reflect the growth in VDSL and FTTH prior to and following the 2015 *Open Internet Order*, as well as AT&T’s completion of its DirecTV-related FTTH build-out merger condition in 2019 (see Figure 13).

**Figure 13:**



### **The Different Approaches Taken by AT&T and Verizon Illustrate the Long-Term Financial Benefits of Fiber Investment**

The ISP industry has remarkably stable and consistent financial performance—performance that was not impacted by the 2015 *Open Internet Order* nor its subsequent repeal. As detailed below, ISPs are consistent generators of free cash flow, a key metric of a firm’s ability to return value to its shareholders. An ISP’s ability to maintain this consistent level of shareholder return is a direct function of its continued investments in its primary product: broadband internet access service. ISPs as a whole operate in an industry that requires a predictable, but not excessive, level of maintenance capital expenditures, with periodic temporary increases to deploy technology upgrades. This generally amounts to a steady state capital intensity in the low-teens percentages, with short spells in the high-teens or low-twenties.<sup>24</sup>

<sup>24</sup> See, e.g., Comments of Jason Armstrong, Comcast CFO, 2024 Morgan Stanley Technology, Media & Telecom Conference (Mar. 6, 2024) (“I’ll just note that while our CapEx intensity at Connectivity & Platforms has been at around 10 percent for the past few years, this is not a specific internal target for us. Rather, it’s an output. Our teams are going as fast as possible. However, if, for example, we have an opportunity to accelerate further our growth in homes passed at accretive economics, then we’d welcome that opportunity. But right now, the envelope has been right around 10 percent, and we’re very happy with the pace that we’re on and the progress we’re making.”); Comments of John Stankey, AT&T CEO, Q4 2023 Investor Call (Jan. 24, 2024) (“We should be at mid-teens as a percent of revenue in a steady state as we kind of get through the front end of this investment cycle.”); Comments of Pascal Desroches, AT&T CFO, Q4 2023 Investor Call (Jan. 24, 2024) (“We expect to operate at mid-teens capital intensity long term. And we’re committed to that.”); Comments of Kevin Coyle, SVP & CFO, Cable One Inc., Q3 2015 Cable One Inc. Earnings Call (Nov. 5, 2015) (“[W]ith the completion of most of these

While the industry as a whole tends to follow this pattern, there are some important differences between different types of carriers. As we discussed in our initial comments, cable ISPs “have a substantial cost advantage over ILECs.”<sup>25</sup> DOCSIS 3.0 deployment costs were less than \$20 per passing and DOCSIS 3.1 upgrades less than \$10,<sup>26</sup> while DOCSIS 4.0 upgrades run between \$100 and \$200 per passing.<sup>27</sup> Wireless carriers have a similar steady-state capital intensity in the low- to mid-teens, with periodic spikes during upgrade cycles.<sup>28</sup>

ILECs face a different investment prospect than their cable company competitors, and this difference explains much about the market over the past two decades. The differences in upgrade strategies followed by the leading ILECs—Verizon and AT&T—are instructive, and illustrate how little impact FCC regulatory authority has on investment decisions compared to a firm’s motivation to maximize shareholder returns.

Consider Verizon. It was a notable early investor in FTTH with its announcement of its FiOS plans in mid-2004.<sup>29</sup> As ISP infrastructure analyst Jeff Heynen explained, Verizon “bit the bullet early with a high-cost rollout of FTTH infrastructure.”<sup>30</sup> Indeed, Verizon’s fiber plans were criticized for years by certain analysts, until they could no longer argue with the positive

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major capital initiatives, we should return to historical levels which are in the mid to high teens.”).

<sup>25</sup> Free Press Comments at 115.

<sup>26</sup> *See id.* at 114.

<sup>27</sup> *See id.* at 113–116.

<sup>28</sup> For example, since 2012 T-Mobile’s capital intensity has been consistently in the 13 to 15 percent range, with 2022’s C-Band upgrades boosting that level to 17.5 percent, and then returning to 12.5 percent in 2023. US Cellular’s capital intensity was at an elevated 19 percent during the 2013–2014 period as it made the bulk of its LTE upgrades. This capital intensity dropped back to the low teens until the company ramped up its 5G deployments beginning in 2019. After a period of elevated spending, US Cellular’s capital intensity in 2023 was back down to 15.6 percent. *See, e.g.,* Armstrong, Comcast CFO, 2024 Morgan Stanley Technology, Media & Telecom Conference, *supra* note 24 (“The wireless industry is fairly capital-intensive, and there’s predictive capital intensity, which is what you’re doing sort of at the tower level and backhaul level, and then there’s the spikes in capital that you get around spectrum auctions that are big and chunky and happen every few years.”) (emphases added).

<sup>29</sup> *See* Ben Charney, “Verizon’s fiber race is on,” *CNET* (July 19, 2004).

<sup>30</sup> Jeff Heynen, “Alternative facts on broadband investments threaten net neutrality,” *SNL Kagan* (Mar. 10, 2017) (title later changed to “FCC concern over broadband investments threatens net neutrality”).



results.<sup>31</sup> Though Verizon’s deployment goal has not wavered from its initial target,<sup>32</sup> the bulk of its FiOS investment came in the first several years of the project. Verizon’s peak year of FiOS capex was 2007, a year when it spun off more rural territory to Fairpoint Communications (following divestiture of its Hawaiian assets in 2005, and followed by further rural divestment to Frontier Communications in 2009).<sup>33</sup> Verizon spun off an additional chunk of its territory to Frontier again in April 2016. These divestitures and early fiber build-outs made Verizon the most fiber-heavy of all the major ILECs. When Verizon reaches 18 million FiOS passings at the end of this year, it will offer FTTH to approximately 90 percent of the homes in its territory.<sup>34</sup>

This early commitment to FiOS and a strategy to sell off most of its rural footprint freed up significant cash flow for Verizon to pursue other methods to increase shareholder value, though some were more misguided than others. After reaching its FiOS deployment goal in 2011, Verizon then moved to acquire Vodafone’s 45 percent stake in Verizon Wireless in 2013. In 2015, it acquired what was left of AOL for \$4.56 billion. In 2016, it reached a deal to purchase Yahoo! for \$4.5 billion. During this time, it launched (2015) and then shuttered (2018) Go90, another failed attempt of the company to enter the over-the-top content business.

In 2021, however, Verizon sold its media group, including AOL and Yahoo, to Apollo Global Management for \$5 billion. That same year, Verizon leaned fully into its core competency with aggressive expansion of its fixed wireless service.<sup>35</sup> And in 2022, it increased the number of

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<sup>31</sup> See, e.g., Karl Bode, “Craig Moffett Suddenly Thinks FiOS Is Great,” *DSL Reports* (Aug. 23, 2013) (“Just a few years back, Moffett regularly mocked FiOS as a disastrous decision, insisting that Verizon’s \$24 billion investment in last mile fiber would shove Verizon into a huge operational hole because Verizon was ‘giving people a Maserati at the price of a Volkswagen.’ . . . That was then, this is now. At his own firm, Moffett appears to have pulled a complete 180 on FiOS, and is now gushing about how the investment is paying off in spades for Verizon.”).

<sup>32</sup> When Verizon first launched FiOS, it spoke of a terminal deployment goal of 19 million locations. After the launch, however, the company spun off a significant number of its (heavily rural) assets to Fairpoint Communications in 2007 and to Frontier Communications in 2009. As of Spring 2010, Verizon indicated it was nearing completion of its FiOS deployments reaching 18 million locations by the end of that year, with only greenfield-level deployments continuing thereafter. In 2015, Verizon reached a deal to spin off parts of its service area to Frontier, which included approximately 3.4 million FiOS “open for business” passings. Verizon currently offers FiOS to 17.6 million locations and expects to pass 18 million locations by the end of 2024. See, e.g., Saul Hansell, “Verizon’s FiOS: A Smart Bet or a Big Mistake?,” *New York Times* (Aug. 18, 2008); Roger Cheng, “Verizon to End Rollout of FiOS,” *Wall Street Journal* (Mar. 30, 2010); Verizon Transactions Conference Call Investor Presentation (Feb. 5, 2015); Masha Abarinova, “Verizon fiber exec dishes on build progress, cell site upgrades,” *Fierce Telecom* (Oct. 3, 2023).

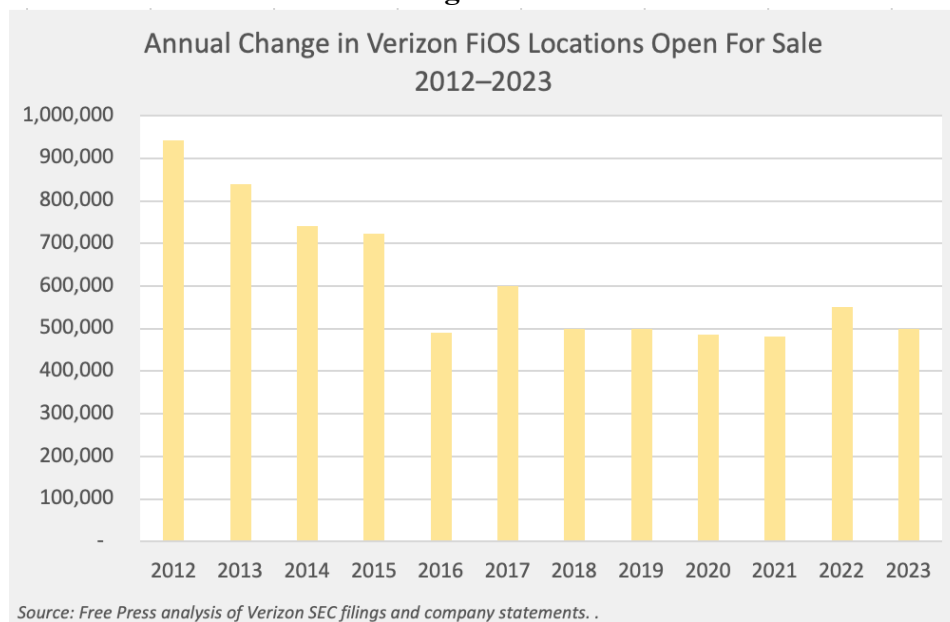
<sup>33</sup> See, e.g., “It’s Working” at 91–92.

<sup>34</sup> Free Press’s estimate is based on an S&P Global estimate of total passings in Verizon’s ILEC territory.

<sup>35</sup> See, e.g., Bevin Fletcher, “Verizon brings 5G fixed wireless for business to 21 cities,” *Fierce Wireless* (Apr. 15, 2021) (“Verizon is increasing the number of cities where it offers 5G

new FiOS passings “open for business” by 550,000, the most since 2017 (see Figure 14).<sup>36</sup> There’s simply no indication of changes in Verizon’s FiOS deployment plans related to the Commission’s Title II and Open Internet policies—neither from their adoption nor their repeal.

**Figure 14:**



Verizon does not report capital expenditures by segment. However, given that Verizon publicly stated its completion of its FiOS deployments in 2011 (aside from continued greenfield deployments),<sup>37</sup> changes in its company-wide capital expenditures data largely show the impact

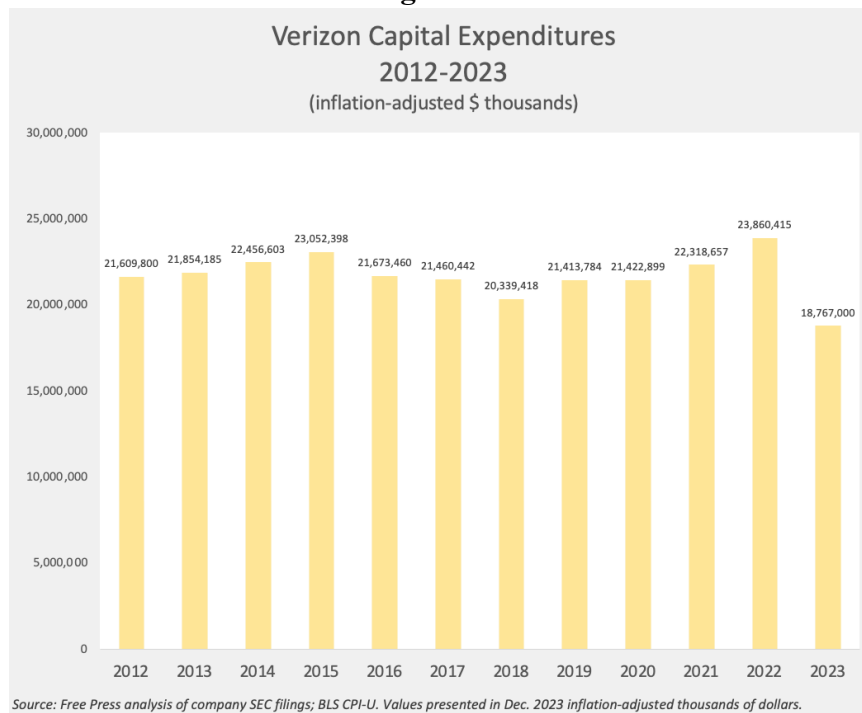
fixed wireless for business customers this month from three to 24.”); Monica Allevan, “Verizon expands FWA business offering to 42 cities,” *Fierce Wireless* (July 15, 2021) (“Verizon is upping the ante in its rivalry with cable companies, now offering its 5G Business Internet fixed wireless access (FWA) service to businesses in parts of 42 U.S. cities, up from the previous 24 markets.”).

<sup>36</sup> These results are *pro forma* of Verizon’s 2016 partial divestiture to Frontier, comparing the annual change in new locations where Verizon markets FiOS internet access services. As we detailed in our 2020 Section 706 Comments, “Verizon’s expansion outside of this ‘natural’ growth in recent years was planned in 2016, following the company’s acquisition of XO Communications in Spring of that year. Shortly following this deal, Verizon announced a new agreement with the city of Boston to replace ‘its copper-based infrastructure with a state-of-the-art fiber-optic network platform across the city.’” Free Press 2020 Section 706 Comments at 38. This minor commitment shows up in the 2017 new passings data, which otherwise reflect a greenfield building pace after the company reached its primary FiOS deployment goal in 2011. *See Cheng, supra* note 32.

<sup>37</sup> Verizon stated in March 2010 that it would finish its FiOS rollouts by the end of the year. *See Cheng, supra* note 32. However, it subsequently made reference to reaching its FiOS commitment in 2014. *See Comments of Fran Shammo, EVP & CFO, Verizon Communications Inc., Q4 2014 Verizon Communications Inc. Earnings Call (Jan. 22, 2015)* (“On capex, Mike, it

of Verizon’s wireless deployment cycles. As we see below in Figure 15, Verizon increased capex from 2012 to 2015 as it rolled out LTE nationwide. It then ramped capex back up from 2019 through 2022 as it deployed 5G.<sup>38</sup>

**Figure 15:**



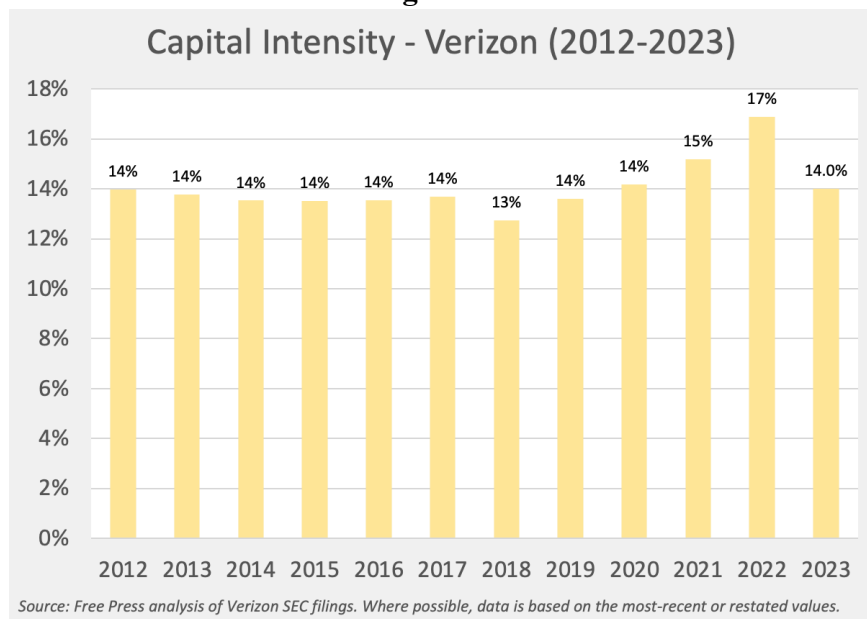
We note that the capex amounts in Figure 15 are not *pro forma* – that is, they do not capture the impact of Verizon’s divestiture of its Texas, California, Oregon, and Washington state assets to Frontier in a deal that closed in Spring of 2016. Thus, Verizon’s capital intensity data offers a better sense of the carrier’s reinvestments into its business over the past decade. As Figure 16 indicates, Verizon’s capital intensity was 14 percent every year between 2012 and 2020, except for 2018, when it dropped slightly to 13 percent. Verizon’s capital intensity shot up only after the end of the Trump administration (and thus after the election of an administration likely to appoint commissioners favoring a reinstatement of a Title II classification for BIAS), driven entirely by the company’s 5G deployments. Verizon’s capital investments and its capital intensity level dropped back to “business as usual” levels in 2023, as the carrier passed the peak of its Citizens Broadband Radio Service (“CBRS”) 5G deployments.<sup>39</sup>

goes directly to what you said. I have been pretty consistent with this in the fact that we will spend more capex in the Wireless side and we will continue to curtail capex on the Wireline side. Some of that is because we are getting to the end of our committed build around FiOS, penetration is getting higher.) (emphasis added).

<sup>38</sup> These results do not reflect capital spent by Frontier on the Verizon assets that it acquired as of April 1, 2016.

<sup>39</sup> See Comments of Anthony Skiadas, Verizon CFO, Q4 2023 Investor Call (Jan. 23, 2024) (“The full [2023] year capex totaled \$18.8 billion, which represents a more than \$4 billion

**Figure 16:**



**After AT&T Completed In 2019 the DirecTV FTTH Deployment Merger Commitment the Company Made in 2015, Its Fiber Deployments Slowed to a Crawl**

AT&T took a different path than Verizon, though it ultimately realized it had to make substantial FTTH investments in order to remain competitive with cable company ISPs. We again quote industry infrastructure analyst Jeff Heynen. In 2017, after noting that Verizon “bit the bullet” with its 2004 FiOS plan, Heynen stated:

“Meanwhile, AT&T chose to follow a less costly route of pushing fiber into neighborhoods, but continuing to rely on copper-based VDSL for the final connection to subscribers’ homes, sparing them the high cost of trenching fiber through subscribers’ yards. However, that investment lasted only five years, as the company’s strategy shifted to focus on FTTH. Now, all network operators are in the middle of network upgrades to ensure their competitiveness with cable operators’ DOCSIS 3.1 rollouts, which will push speeds to 1 Gbps and beyond. Those upgrades will occur whether net neutrality is in place or not, as reflected by the shipment numbers and revenue for broadband access equipment in 2016.”<sup>40</sup>

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reduction in capital spending from 2022 as we come down from our peak C-Band spending level . . . We expect deleveraging of the balance sheet to accelerate in 2024 as CapEx comes down to BAU levels, and we continue to generate strong cash flow.”); *see also* Vesterberg, Verizon CEO, Q4 2023 Investor Call, *supra* note 21 (“We also reduced our year-over-year leverage while continuing to bring CapEx back towards business as usual levels. This aligns with the capital allocation priorities we have shared in recent years.”).

<sup>40</sup> *See* Heynen, *supra* note 30.

It's important for the Commission to understand the timing and cadence of AT&T's decisions. After the Commission indicated it would block AT&T's attempted takeover of T-Mobile, AT&T decided it needed to do something to help it stop losing customer share to cable company ISPs. In late 2012, AT&T announced "Project VIP," a two-year plan to finish its nationwide LTE rollout and deploy VDSL or ADSL2+ broadband services to approximately 75 percent of its footprint.<sup>41</sup>

Then, in May of 2014, AT&T announced it was acquiring DirecTV ("DTV") for nearly \$64 billion (\$48 billion in equity plus \$16 billion in assumed debt). In concert with its DTV purchase, AT&T announced it would deploy FTTH to 12.5 million additional residential locations, for a total of approximately 14 million locations.<sup>42</sup> AT&T announced it had met that

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<sup>41</sup> See Comments of John Stankey, Group President and Chief Strategy Officer, AT&T Inc., 2012 Analyst Conference (Nov. 7, 2012). Stankey noted that AT&T's Project VIP upgrade plans were "to deliver IP broadband to 57 million customer locations. We'll reach 33 million total U-verse customer locations by year-end 2015, 24 million U-verse IPDSLAM customer locations by the end of next year, though we're nearly complete today. We'll expand 4G LTE to reach 300 million POPs by year-end 2014. . . . Our plan is to increase our U-verse footprint by a third to 43 percent, meaning 75 percent of our customer locations will have access to either U-verse or IP-DSLAM. We'll be essentially complete with this IP broadband build by the end of 2015."

<sup>42</sup> The final fiber deployment condition stated in part that "within four (4) years of the Closing Date the Company will complete the aforementioned FTTP deployment to all 12.5 million customer locations and the Company will offer speeds of 45 Mbps or more to at least 25.7 million customer locations." *Applications of AT&T and DIRECTV for Consent to Assign or Transfer Control of Licenses or Authorizations*, MB Docket No. 14-90, Memorandum Opinion and Order, 30 FCC Rcd 9131, 9286 App. B (2015) ("*AT&T-DTV Approval Order*"). The Commission adopted this condition in part to offset concerns about harms to competition, and to hold AT&T to its promise made in its Public Interest Statement that "the combination improves the broadband economics so substantially that the combined company will be able to deploy FTTP broadband, its highest-speed fiber connection, to at least 2 million more customer locations than it would have been able to deploy under any plan of record absent the transaction." *Id.* at 9253, ¶ 318 (emphasis added). For the purposes of tracking AT&T's FTTP deployments against this promise, it would help to know how many such customer locations AT&T had at the time it made this commitment and at the merger's closing. Unfortunately, the Commission redacted this information in the *AT&T-DTV Approval Order*. We can, however, estimate this value from AT&T's public statements and its Form 477 filings. The Form 477 data indicate that as of year-end 2014, AT&T FTTH was located in blocks containing 770,000 housing units. AT&T closed the transaction on July 27, 2015. Though they were irregular and often vague, statements made on AT&T's quarterly investor calls indicate that its end-goal for the merger commitment was 14 million total FTTP customer locations. This implies that the 12.5 million commitment was in addition to the 1.5 million it expected to have at the time of deal closing. For example, on January 26, 2016, AT&T said "we will get to 14 million fiber enabled and, quite frankly, there's a likelihood that we may get to more than that when we're finished." Comments of John Stephens, AT&T CFO, Q4 2015 Investor Call (Jan. 26, 2016). With this starting point, we can look to additional AT&T statements to estimate its deployment progress during the 2016–2019 period when it was working to meet its merger commitment. On its

DTV merger-related FTTH deployment commitment in June 2019.<sup>43</sup> For the remainder of 2019 and 2020, AT&T slowed its FTTH deployments to a greenfield pace.<sup>44</sup>

In other words, once it had satisfied its merger commitments made in 2015 to the Obama FCC, AT&T made no increase to its greenfield pace of FTTH deployments after the 2017 RIF Order and Trump tax cuts. AT&T instead used its tax cut savings to chase the ever-elusive vertical content pot of gold. It spent nearly \$100 billion to acquire Time Warner Entertainment (\$79 billion of equity, \$21 billion in assumed debt), in a deal that finally closed in June of 2018 after a protracted legal battle with the Department of Justice.

But AT&T's debt-laden push into the satellite TV, cable TV channel, and studio content markets was doomed from the start. Less than three years later, it reached a deal to sell the Time

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January 31, 2018 investor call, AT&T said, “[o]ur fiber build continued to go strong. We now reach more than 7 million customer locations and expect to double that in the next 18 months.” Comments of Randall Stephenson, AT&T CEO, Q4 2017 Investor Call (Jan. 31, 2018). On this call and others, AT&T indicated that it did not begin to market consumer FTTH until late 2016. On the January 30, 2019 investor call, AT&T stated it “also accelerated our fiber deployment, and we now reach 11 million customer locations.” Comments of Randall Stephenson, AT&T CEO, Q4 2018 Investor Call (Jan. 30, 2019). It also said that “[o]ur fiber footprint continues to grow. We now pass more than 11 million customers locations with fiber and are on our way to hit the 14 million locations later this year. This will extend our fiber network to 22 million locations when we include business.” *Id.* Finally, on AT&T's July 24, 2019 call, it indicated it had met the DTV merger commitment. *See* Comments of John Stephens, AT&T CFO, Q2 2019 Investor Call (July 24, 2019) (“We passed an important milestone with our fiber deployment reaching 14 million customer locations and satisfying our fiber build commitments.”).

<sup>43</sup> *See* Stephens, AT&T CFO, Q2 2019 Investor Call, *supra* note 42. The AT&T-DTV merger approval noted that in its Public Interest Statement and other correspondence, AT&T had used the term “customer locations” and households interchangeably. And in its investor calls, AT&T sometimes seems to use the term to include business customer locations, while when referring to the merger commitment it uses the phrase to mean housing units. However, in the final commitment, the Commission defined it as “mass-market customer locations, such as those occupied by residences, home offices, and very small businesses (and excluding locations solely occupied by large enterprises and institutions).” *See AT&T-DTV Approval Order*, 30 FCC Rcd at 9286, App. B.

<sup>44</sup> An examination of AT&T's public statements indicates its FTTH deployments slowed to a greenfield pace (approximately 350,000 to 500,000 new locations per year) after it achieved its DTV merger commitment in mid-2019, until it increased its deployment target in January of 2021. *See* Comments of John Stankey, AT&T COO, Q4 2019 Investor Call (Jan. 29, 2020) (“On what we do in the fixed space, you should expect that we’re going to continue to add to the . . . fiber footprint . . . You should expect, just by natural growth of the population, you’ll probably see somewhere between 350,000 to 0.5 million new fiber locations coming into the portfolio. Right now, that is just kind of what I would call the natural growth rate that’s going to happen.”) (emphasis added).

Warner assets to Discovery Communications for \$83 billion. This May 2021 announcement (which followed AT&T's February 2021 announcement of its plans to spin out DTV and get it off the books too) came with AT&T's recommitment to fiber deployment. The company announced it would deploy FTTH to 30 million locations by the end of 2025.<sup>45</sup>

Thus, we see a clear trajectory for AT&T. It faced a crossroads all the way back in 2012, and decided to make a partial investment in VDSL and ADSL2+ to help stay somewhat competitive with cable company ISPs. This "Project VIP" bought the company some time, but was ultimately a punt. AT&T used capital it could have spent upgrading to full FTTH to instead chase a series of misguided vertical acquisitions. Despite the rhetoric it and other ISPs used in their advocacy for the Pai Commission to repeal the *Open Internet Order*, AT&T did not increase its broadband network investments following the *RIF Order*. In the Spring of 2020, it found itself saddled with massive debt used to acquire two businesses experiencing secular decline (satellite TV and linear cable channels), and it continued to lose DSL customers faster than it gained FTTH customers. Activist investors were clamoring for a change.<sup>46</sup> All of this resulted in AT&T pushing its prior CEO into retirement and divesting its vertical assets so that it could instead put more resources into FTTH deployment.<sup>47</sup>

This history is reflected in AT&T's capital investments. Figure 17 below shows AT&T's inflation-adjusted capital expenditures. Figure 18 shows AT&T's those same expenditures plus capital equipment paid for with "vendor financing" (since a portion of AT&T's capital equipment

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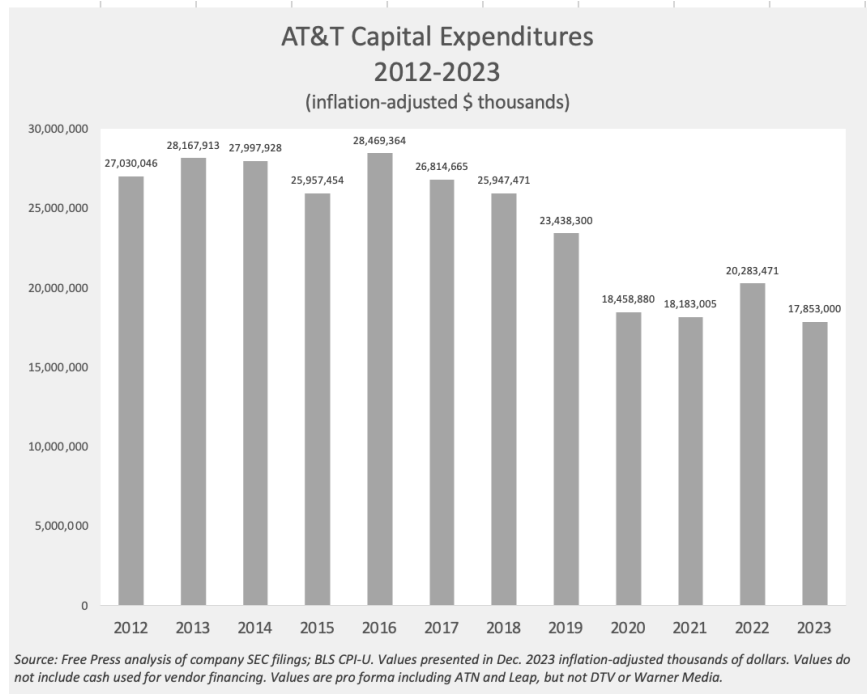
<sup>45</sup> After a change in CEO, AT&T indicated it planned to increase its FTTH deployments beyond a greenfield pace. See Comments of John Stankey, AT&T CEO, Q4 2020 Investor Call (Jan. 27, 2021) ("We'll be building somewhere around 2 million fiber residential locations, in that neighborhood."). A month later, as it announced its deal to spin out DTV to a private equity firm, AT&T again increased its FTTH deployment target for 2021. See Comments of John Stankey, AT&T CEO, AT&T Special Investor Call (Feb. 25, 2021) ("And in addition to baseline growth of nearly 1 million new homes and business locations, we'll build out about 2 million additional fiber-served locations for a total of 3 million new fiber-capable locations as part of our integrated fiber strategy this year."). Then with the Warner Media sell the plan became a multiyear commitment to pass 30 million total locations. See Comments of John Stankey, AT&T CEO, Warner Media LLC Special Investor Call (May 17, 2021) ("Our goals with the new AT&T are simple and straightforward. We plan to continue the momentum in our mobility business by stepping up our investment in our wireless network. We expect to effectively deploy the assets we acquired during the recent C-Band auction reaching 200 million POPs with that spectrum by the end of 2023. We intend to double down on our fiber expansion. We expect to more than double our current fiber footprint by the end of 2025, reaching 30 million customer locations with a single goal of offering the best fixed broadband service in the market.").

<sup>46</sup> See Thomas Franck, "AT&T shares rally after activist Elliott Management takes \$3.2 billion stake, sees stock worth \$60," *CNBC* (Sept. 9, 2019).

<sup>47</sup> As we discuss below, this refocusing on FTTH investment came with a reduction in AT&T's share repurchases and dividend payments, which is a strong indication of the company's expectations for future growth in its broadband business.

was obtained from vendors through a financing plan; this portion of its capital equipment costs is booked as financing payments, not capital expenditures. The company used this type of financing arrangement for a portion of its DTV deployments and its recent FTTH and 5G deployments). And Figure 19 shows AT&T's capital investments as a percentage of its revenues.

**Figure 17:**



**Figure 18:**

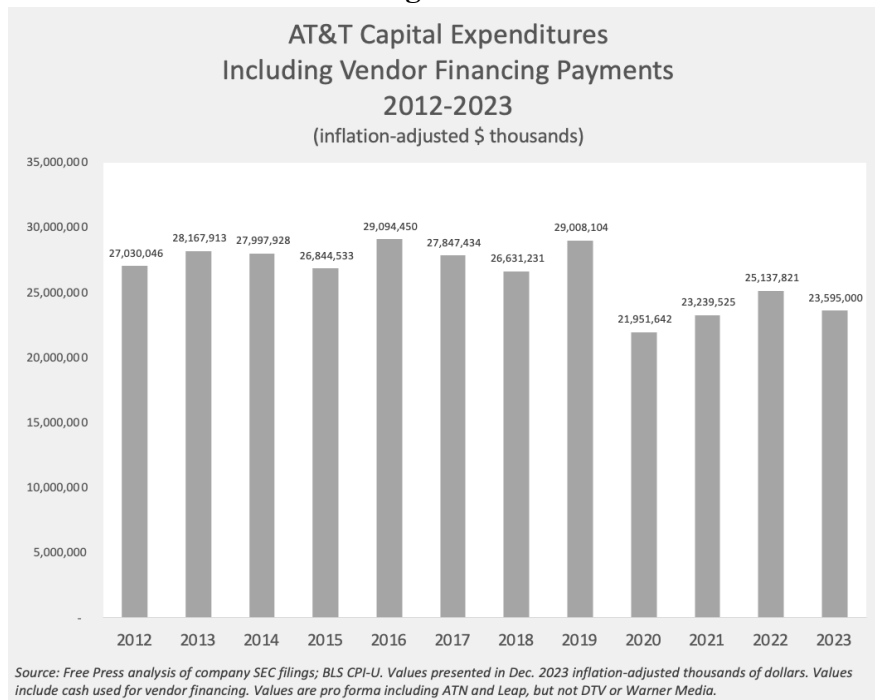
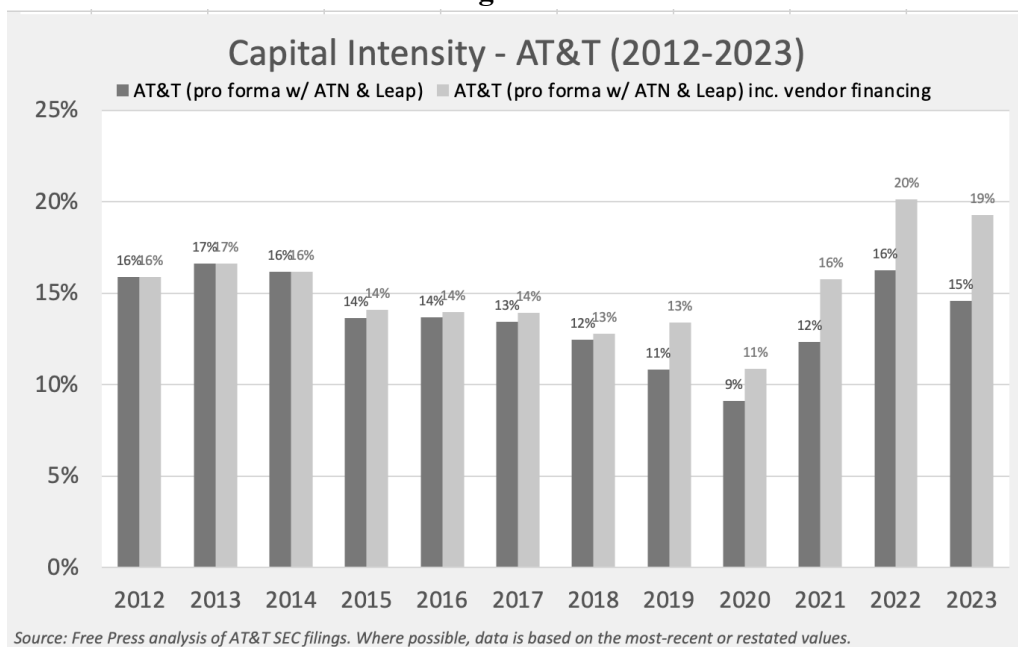




Figure 19:



These data reflect the 2012–2014 Project VIP deployments, the 2016–2019 DTV merger condition-related FTTH deployments and subsequent slowdown, the removal of DirecTV from its books (through a deal that closed in August 2021), and the divestiture of Warner Media (which closed in April 2022), which was followed by AT&T increasing the pace of its FTTH deployments from less than half a million locations per year in 2020, to between 2 and 3 million per year from 2021 to 2023.

The record makes it clear that AT&T had to ramp up its FTTH deployments if it wanted to continue maintaining a profitable retail wireline business. It squeezed as much as it could out of VDSL deployments, but U-Verse was not a product that could compete effectively with today’s (and tomorrow’s) DOCSIS 3.1 and DOCSIS 4.0 cable modem services. AT&T’s current CFO Pascal Desroches recently stated that the company realized that it “needed to invest significantly. We understood that we had legacy businesses that were going to decline. So we leaned into our transformation program with those being—understanding, we have a challenge ahead of us, and we have to become more efficient.”<sup>48</sup>

When asked how AT&T balances its goals of cost cutting with its need to make “all the necessary investments to perhaps sustain growth,” Desroches stated that AT&T is “investing more than anybody else. And I would expect, because we are pursuing a double strategy that we . . . will probably continue to do so. We understand the importance of doing that, and it will build a sustained advantage long term. That’s something we don’t want to give up and we won’t give up. And fortunately, we’re at a point where we can invest meaningfully and de-lever and cut

<sup>48</sup> Comments of Pascal Desroches, AT&T CFO, Deutsche Bank 32nd Annual Media, Internet & Telecom Conference (Mar. 12, 2024).

costs because there's a lot of legacy costs that will come out as the business—as the legacy revenues [fall] away.”<sup>49</sup>

Thus, we see that financial realities finally hit AT&T in the face and made it realize what other ILECs already understood: they are uniquely positioned as incumbents to earn literally decades worth of high margin returns, if they invest in future-proof FTTH networks. AT&T's transformation is particularly noteworthy, in part because of how fast it changed directions after President Biden was elected, and after it was clear that his Federal Communications Commission would prioritize restoration of its Title II authority.

AT&T has only continued to express its bullishness on the future of its business, well after the Commission released the *Notice* in this proceeding.<sup>50</sup> Indeed, earlier this year AT&T announced it will seek approval from its board to go well beyond its 30 million FTTH locations goal, by another 10 to 15 million locations.<sup>51</sup>

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<sup>49</sup> *Id.* (emphasis added).

<sup>50</sup> See Stankey, AT&T CEO, Q4 2023 Investor Call, *supra* note 24 (“Taking a step back, it's clear how far our investment-led strategy has taken us from where we stood only 3 years ago. Since the start of 2021, we've substantially improved our Mobility position and brand perception. We went from losing wireless share to growing our share of subscribers. As a result, we increased our postpaid phone base by more than 10 percent to more than 71.2 million subscribers. This represents our best 3-year stretch of postpaid phone net add growth in more than a decade. During the same 3-year time span, we've added to our share of industry wireless service revenue growth, increased our annual wireless service revenues by more than \$7.5 billion and grew Mobility EBITDA by about \$4 billion. This level of sustained success requires contributions from across the company, including our network team that continues to enhance and expand our 5G and fiber networks. Our mid-band 5G network is now available to more than 210 million people, offering faster speeds and an enhanced experience. We're also bringing more fiber to Americans than anyone else. This excites me because where we build fiber, we win. Over the past 3 years, we went from passing about 18 million consumer and business locations to now passing more than 26 million locations. As we continue to expand our reach, we're growing our fiber base with 1.1 million AT&T Fiber net adds in 2023, we've generated more than 1 million AT&T Fiber net adds annually for 6 straight years. Over the past 3 years, we've grown AT&T Fiber subscribers by 3.4 million or by nearly 70 percent to more than 8.3 million. This success reflects new customer wins and lower churn, trends that we see as sustainable. The financial benefits we continue to realize through our fiber focus are significant. Compared to 2020, we've more than doubled our fiber revenues to over \$6.2 billion in 2023, and our broadband ARPU climbed more than 20 percent as customers continue to seek higher value plans with faster speeds. In addition to delivering high-margin revenue growth, fiber is more energy efficient, requires less maintenance and customers keep the service longer. Therefore, as we scale our fiber footprint, we expect to continue to drive margin expansion. This flywheel of faster subscriber growth, higher revenues and expanding margins gives us confidence in our ability to repeat similar levels of fiber-fueled growth in the future.”) (emphases added).

<sup>51</sup> See *id.* (“We'll continue to extend our lead as the company that reaches more homes and businesses with fiber. We remain on track to pass our 30 million-plus consumer and business

It is important to note that AT&T foresees a continued elevated pace of FTTH deployment even as it reduces its total capital spending. This is a critical point that we've made repeatedly: the amount of money that shows up on a company's cash flow statement for capital expenditures is not a good metric for measuring that company's network deployments. This is in part because a company's total capital expenditures include a number of non-network-related capital investments (for example, cable TV set top boxes). But capex is also a poor metric for deployment because companies' average per-location deployment costs can decline as technology improves and companies scale deployments.<sup>52</sup>

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fiber location target by the end of 2025. As I mentioned last month, the better-than-expected returns we are seeing on our fiber investments potentially expands the opportunity to go beyond our initial target by roughly 10 million to 15 million additional locations. This also assumes similar build parameters in a regulatory environment that remains attractive to building infrastructure.”). The reference to an “attractive” regulatory environment could be read as a vague AT&T reference to the Commission, but further context makes it clear Mr. Stankey was referring to the states' BEAD requirements. *See id.* (“There may be some similarity between each of the states, but there clearly [are] 50 different states and 50 different points of view on this. I think we're going to be very measured and targeted as to where we go in, both in terms of the states that are setting up the right kind of rules that incent the joint private sector investment as well as the right rules that are sustainable for how you operate in that. I think a good news story is I point to a state like Texas, I think was the largest benefactor of BEAD financing. Seems to me policy-wise, they have a pretty sound approach to things. It looks to me like we can work effectively in the state. Given it's a large amount, we'll probably have a good opportunity there. There's a few other states that I look at and say, I'm not sure the policies are going to line up effectively. At the end of the day, as I said in my opening comments, we have 10 million to 15 million organic opportunities to go and invest and build. We know what the average cost per pass location is for us to build those areas. It's a very controlled and measurable number. In some of the BEAD circumstances, the amount of private capital per living unit that's being required is actually substantially higher than what our average cost is and what I would call our organic and market-driven non-BEAD footprint. And so if I think about I can get more scale, more households faster in places where the construct is very straightforward, the amounts and the plays to run are getting more scale in existing areas, that's what weighs against your incentive to invest. And I think states that understand that are coming up with smart policies to try to be competitive with that. And states that don't understand that are probably going to have pretty voluminous and deep requirements that ultimately cause private capital to maybe shy away from matching in some of those areas.”) (emphasis added).

<sup>52</sup> *See* Comments of John Stankey, AT&T CEO, 2024 Morgan Stanley Technology, Media & Telecom Conference (Mar. 4, 2024) (“I don't expect that fiber will ever be the solution for all of the ILEC footprint, but that's where being a great wireless provider comes in and part of our strategy around how we're operating the business more effectively. . . . And I've said this before, technology continues to get better. Costs go down. While we're talking about 30 million locations passed right now, we're going to get up the learning curve further and we're going to see vendor costs improve and we're going to see the demand for connectivity [ ] continue to increase.”) (emphases added).

Indeed, as we pointed out in our initial comments, in this industry there never is any reason to expect capital expenditures to go up every year. They do not, even if ISPs get everything they want in terms of legal and regulatory policy, and even if business is booming. AT&T itself told the Commission in 2010 that “there is no reason to expect capital expenditures to increase by the same amount year after year. Capital expenditures tend to be ‘lumpy.’”<sup>53</sup> AT&T’s 2023 capex was lower than it was in 2022, but that’s merely a reflection of it getting through a temporary higher-cost period due to 5G deployment.<sup>54</sup> AT&T’s capital intensity declined in 2023 and is likely to decline further in 2024, as it completes 5G-related upgrades yet continues to deploy FTTH to reach the final 4 million of its 30 million locations goal. Indeed, AT&T indicated that the pace of its construction is such that it will bring more FTTH locations open for business even as its total capital spend declines, in part because it has finished repaying vendor-financed builds and is devoting more of its own capital towards deployment.<sup>55</sup> And it is important to note that AT&T’s 2025 goal of 30 million FTTH locations, and its identified target of 10 to 15 million more FTTH locations, does not include its so-called “Gigapower” joint venture, a project that is initially targeting an additional 1.5 million locations.<sup>56</sup>

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<sup>53</sup> Comments of AT&T, WT Docket No. 10-133, at 34 (filed July 30, 2010) (“[T]here is no reason to expect capital expenditures to increase by the same amount year after year. Capital expenditures tend to be ‘lumpy.’ Providers make significant expenditures to upgrade and expand their networks in one year (*e.g.*, perhaps because a new generation of technology has just been introduced), and then focus the next year on signing up customers and integrating those new facilities into their existing networks, and then make additional capital expenditures later, and so on. Minor variations from year to year thus should not be surprising, much less an indication of declining competition.”) (emphasis added).

<sup>54</sup> In March 2024, when asked why AT&T guided for capex approximately \$2 billion below its level in 2023, AT&T CFO Pascal Desroches said “capital investment is in-year capital expenditures plus payment for capital incurred in the previous years. Last year, a big part of our capital investment was to paydown build that had happened in 2022. As we look out this year, a larger portion of our capital budget will be towards projects in a year and so we are actually doing more things in 2024 than we did in 2023 as it relates to the new revenue generating—revenue supporting initiatives. And this is why we’ve been saying it’s really important for us to manage down our vendor payables in addition to our—on-balance sheet debt because that gives us an opportunity. If you clear enough of that out, more of your spend is going to be on projects that will produce revenues even though you’re spending on your absolute level less.” Desroches, AT&T CFO, Deutsche Bank 32nd Annual Media, Internet & Telecom Conference, *supra* note 48 (emphasis added).

<sup>55</sup> *See id.*

<sup>56</sup> *See id.* (“We expect to get to 30 million locations in 2025. We’ve announced that we have an opportunity for an incremental [10 to 15 million] in our own footprint beyond that. All that is aside from the amounts that we have invested in GigaPower, where we are the anchor tenant, our 50-50 [joint venture where] we are the anchor tenant, and that is in Phase 1, that’s expected to be 1.5 million subscribers or locations passed. And in success, if we’re penetrating that and getting returns, there’s no reason why we would stop at [1.5 million]. So all of a sudden, you start to see the opportunity . . . 30 million next year. It’s 30 million locations next year, an incremental 10

There's simply nothing in the record to suggest that AT&T's incentives would change, or that its business decisions would lead it to pull back its broadband investments, if the Commission restores Title II.<sup>57</sup> The long-term profit margins of FTTH are just too high and the impact of Commission regulation is non-existent.

### **ISPs Have a Consistent Track Record of Investing in Order to Generate Significant Cash Flows that Are Returned to Shareholders as Dividends or Stock Buybacks**

ISPs, like any business, exist to make money. In slightly more technical terms, firms exist to provide a positive return to shareholders. Firms can use cash to directly pay investors dividends; they can boost the trading value of their shares by repurchasing and retiring common stock (also known as “buybacks”); they can use cash in the attempt to boost their equity value through mergers and acquisitions; or they can reinvest in their businesses.

To evaluate and compare how individual companies are performing, analysts often focus on two primary metrics: earnings before interest, taxes, depreciation and amortization (“EBITDA”) and levered free cash flow (“FCF”).<sup>58</sup> EBITDA captures a company's net income

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[million] to 15 [million], we're going to add thereafter and whatever is done in GigaPower. And we haven't really—we don't understand yet what the [BEAD] opportunity is going to be indeed. So all that makes us feel really good because relative to when we originally [got going] with the business cases, we are penetrating fiber faster. Our ARPUs are higher. Our churn is lower. So there are lots of really good things happening. And I take a step back and I said the only limiting factor is the CFO saying, we've got to do this and at the same time, de-lever. And we couldn't be more pleased. The ability to then take that expanded [total addressable market] in fiber locations [paired] with our wireless product and draw churn lower—really prospects are really good for us as we look out the next few years.”) (emphases added).

<sup>57</sup> See Stankey, AT&T CEO, Q4 2023 Investor Call, *supra* note 24 (“I obviously believe that we should not be at the sustained levels of investment that we're at right now forever. Our point of view is we're building infrastructure that's sustainable infrastructure that will build a franchise that will last for many years to come. The fiber investment is a hard one to do at the front end, but it's an incredibly durable investment. The depreciation levels on this go out a long time for a reason. And the beauty of the technology is improving capacity on it is a relatively light lift incrementally once you got the glass in the ground. So you heard me talk about we should be at mid-teens as a percent of revenue in a steady state as we kind of get through the front end of this investment cycle. As long as we continue to perform in the market the way we've been performing on this elevated level of investment, I'm comfortable that we should continue to do that.”) (emphasis added).

<sup>58</sup> Because these metrics are so important to shareholder understanding of a company's performance, the firms themselves pay close attention to, and highlight, EBITDA and FCF in their investor communications. See, e.g., Comments of Jeffery McElfresh, AT&T COO, 2024 Morgan Stanley Technology, Media & Telecom Conference (Mar. 4, 2024) (“And by balanced, I mean, our growth in our financial results aren't from just subscriber growth or just pricing actions and a growing ARPU, it's from both, growing subscribers and growing ARPU. And doing it with industry-leading churn, which means we get the service side continues to improve

before the impacts of interest payments or depreciation, and is an important figure to understand how much cash a company is generating that could be used to reinvest in the business (in the form of capital expenditures) or return to shareholders.<sup>59</sup> Levered free cash flow measures a company's cash generation after capital expenditures, interest payments on debt, and taxes. Investors pay particularly close attention to levered free cash flow because it is a reliable measure of how much profit a firm generates that can be returned directly or indirectly to shareholders via dividends, stock buybacks, or other methods.

As the data in Figure 20 indicate, the leading U.S. ISPs all reported remarkably steady earnings during the 2015 *Open Internet Order* era, which were in no way boosted by the 2017 *RIF Order*.<sup>60</sup> These ISPs have routinely achieved recurring EBITDA margins in the 30 to 40 percent range, which is more than enough to fund continued network upgrades ahead of consumer demand, while also returning cash to shareholders.<sup>61</sup>

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and getting stronger and better, and that translates to really great EBITDA performance. And ultimately, we translate that into free cash flow so that we can continue investing in our networks, our 5G and fiber networks and doing it as efficient as we can and penetrating those networks as effectively as we can to turn those investment dollars into revenue.”) (emphases added).

<sup>59</sup> *See, e.g.*, Comments of Christopher Winfrey, Charter Communications CEO, 2024 Morgan Stanley Technology, Media & Telecom Conference (Mar. 6, 2024) (“I think the start, the big picture, we recognized the importance of EBITDA growth at all times, but particularly when you're inside of an investment cycle. So it matters to us to—we understand that's put—allow us the flexibility to go do these long-term investment programs. And so we're focused on that.”) (emphasis added).

<sup>60</sup> The large (and identical) swings in AT&T's and Verizon's recurring EBITDA margin during the 2012–2014 period are due to an actuarial accounting change that resulted in both companies having a net credit for their pension obligations in 2013, whereas they had large pension charges in 2012 and 2014. Verizon, for example, explained in its 2013 10-K that, “[d]uring 2013, we recorded net pre-tax severance, pension and benefits credits of approximately \$6.2 billion primarily for our pension and postretirement plans in accordance with our accounting policy to recognize actuarial gains and losses in the year in which they occur.” Verizon Communications Inc., 2013 Annual Report (Form 10-K) (Feb. 27, 2014). This was a net \$13.4 billion swing for Verizon, which incurred a \$7.2 billion charge for pensions in 2012, and \$7.5 billion in 2014. *See* Verizon Communications Inc., 2012 Annual Report (Form 10-K) (Feb. 26, 2013); Verizon Communications Inc., 2014 Annual Report (Form 10-K) (Feb. 23, 2015). Similarly, AT&T noted in its 2013 10-K that “[o]perating income for 2013 increased \$17,578 [millions] due to a noncash actuarial gain of \$7,584 related to pension and postemployment benefit plans . . . .” AT&T Inc., 2013 Annual Report (Form 10-K) (Feb. 21, 2014). This is compared to the \$7.9 billion charge for pensions and a \$10 billion charge in 2014.

<sup>61</sup> Recurring EBITDA is a metric that removes non-recurring, irregular, and one-time items that may distort the as-reported EBITDA. It is a useful metric when comparing the financial performance of companies within the same industry.

**Figure 20**

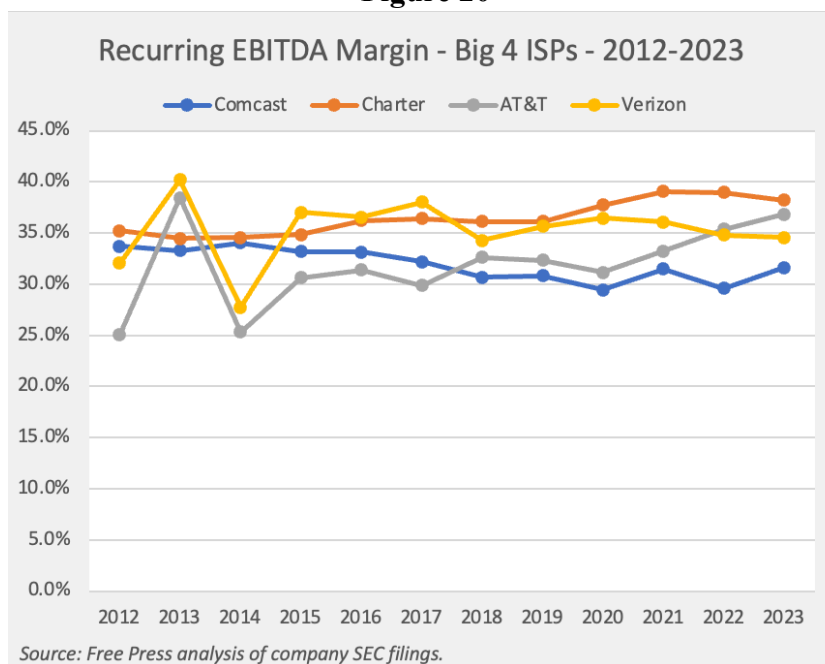


Figure 21 below captures these Big 4 ISPs’ levered free cash flow margins, and reflects an industry that generates significant profits, even as individual carriers continue to aggressively invest in network upgrades and deployments.<sup>62</sup> AT&T’s, Comcast’s, and Verizon’s 2023 recurring free cash flow margins were all near 15 percent, greater than or close to the margins brought in by tech company giants like Amazon (3.2 percent), Alphabet (14.5 percent), NVIDIA (16.8 percent), and Meta (20 percent); or other stable companies known for their sector leadership and profitability such as Walmart (2 percent), Merck (3.5 percent), or ExxonMobil (7 percent).

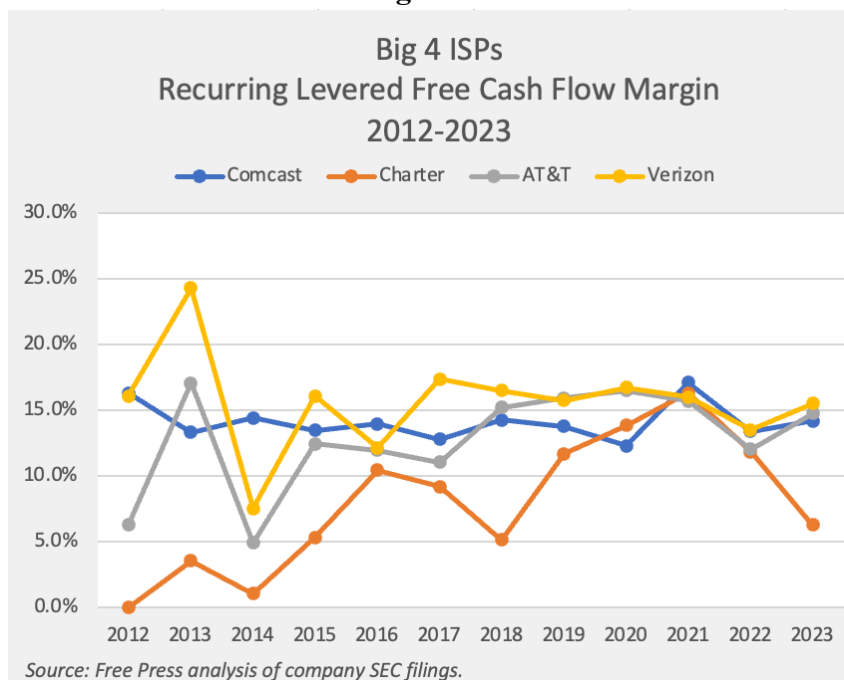
Stable companies will optimize their levels of capital investments aiming to produce future earnings. In the ISP industry, that often means that companies will prioritize reinvesting in their core business in order to catch up to, or stay ahead of, the competition. Because of technology cycles, ISPs go through periods of elevated and then reduced capital spending. This

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<sup>62</sup> The data in Figure 21 are not *pro forma*. Charter’s levered free cash flow margins were low and variable during the period, following its emergence from Chapter 11 bankruptcy in late 2009, through its merger with Time Warner Cable and Bright House Networks. These low margins are in part due to the merger and acquisitions Charter made during that time. It acquired Bresnan Communication’s western systems in 2013, and closed the acquisitions of Time Warner Cable and Bright House in May of 2016). Charter then made substantial network upgrades to these acquired systems. After 2018 (its peak year of DOCSIS 3.1 investments), Charter saw its levered free cash flow grow to the levels of the other Big 4 ISPs. Charter’s rural broadband deployment initiative resulted in lower FCF in 2022 and 2023. As we discuss herein, Charter believes its rural initiative will help secure consistent high-margin earnings for years to come, as it faces little to no competition in these rural areas.

cyclical nature of investment means that ISPs who stay ahead of market demand can generate substantial free cash flow during the periods between upgrade cycles.

**Figure 21**



T-Mobile is currently in one of these “harvesting” portions of its upgrade cycle, having led all U.S. carriers in rolling out nationwide 5G. T-Mobile’s CFO recently noted that his company’s “business is already generating so much cash and so much more yet to come that it affords a range of opportunities.”<sup>63</sup> Those opportunities include various methods of returning cash to shareholders, such as dividends (which T-Mobile reinstated last year after a 5-year stretch of not paying dividends) and stock buybacks (T-Mobile devoted 17 percent of its revenues to share repurchases in 2023). However, T-Mobile has been quick to ensure investors understand that its top priority is network investment—even as it generates far more cash than it

<sup>63</sup> Comments of Peter Osvaldik, T-Mobile US CFO, 2024 Morgan Stanley Technology, Media & Telecom Conference (Mar. 5, 2024) (“[A]s I said, with the ongoing expansion of core EBITDA and free cash flow [ ] this business is already generating so much cash and so much more yet to come that it affords a range of opportunities. The first one being always investment into the business to make sure that we continue to grow, outgrow the industry profitably and drive those underpenetrated segments and growth into there. The second will always be looking at potential accretive M&A opportunities. And whether that’s in the spectrum space, whether it’s things like very capital-light JVs in the fiber area or other capabilities to continue to grow beyond that is another thing. And the third will be, of course, capital returns. To your point, we have initiated a small dividend with aspirations to grow that on a 10 percent per share basis. We have a share buyback program that’s ongoing, all fueled by this tremendous free cash flow. So it’s an exciting time to be at T-Mobile, and there’s a lot of opportunity ahead.”).



needs for deployments given that the company has completed the bulk of its 5G deployments.<sup>64</sup> Indeed, T-Mobile is now putting some of its excess cash into FTTH deployment.<sup>65</sup>

T-Mobile is one of many ISPs that are currently in the middle of a very favorable part of their business cycle, where they can deploy upgrades as aggressively as possible while still generating substantial free cash flow. Verizon is in a similar situation. In the past decade, Verizon managed to deploy nationwide 3G, then 4G LTE, and then 5G wireless services (the last is still ongoing, but past the peak expense phase), while also managing to increase its dividend seventeen years in a row.<sup>66</sup>

Comcast may have finally seen its broadband subscribership growth stall, but it leads all U.S. cable companies in rolling out 10 gigabit-per-second (“Gbps”) capable DOCSIS 4 networks. It is doing so at an increasing pace, while maintaining a relatively low capital intensity level of 10 percent.<sup>67</sup> Throughout the past decade, Comcast rolled out network upgrades ahead of demand, and did so while consistently increasing its dividend payment and share buybacks.<sup>68</sup>

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<sup>64</sup> *See id.* (“The first [opportunity for how to use its excess FCF] being always investment into the business to make sure that we continue to grow . . .”).

<sup>65</sup> *See, e.g.*, Linda Hardesty, “T-Mobile now offers fiber broadband in 13 markets,” *Fierce Telecom* (Feb. 7, 2024) (“T-Mobile is making steady progress with its initiative to offer fiber internet service. It’s now selling fiber service in 13 markets, according to the “availability” tab on its T-Fiber website. The wireless carrier seems to prefer working with providers who build open-access networks. These networks are deployed by one company and then leased to multiple internet service providers, which can then offer broadband service to end customers.”); Mike Dano, “T-Mobile’s fiber plans may have matured with rumored \$1B Lumos deal,” *Light Reading* (Mar. 18, 2024) (“T-Mobile is in talks to invest up to \$1 billion into a joint venture with regional US fiber network operator Lumos Networks, according to German publication Handelsblatt.”).

<sup>66</sup> *See, e.g.*, Vesterberg, Verizon CEO, Q4 2024 Investor Call, *supra* note 21 (“As a result of our financial strength, we raised our dividend for the 17th year in a row with a healthy free cash flow dividend payout ratio of approximately 59 percent. We also reduced our year-over-year leverage while continuing to bring CapEx back towards business-as-usual levels. This aligns with the capital allocation priorities we have shared in recent years. . . . Our capital allocation priorities remain consistent. And as we lower our capital intensity from the C-Band build-out and our new business structure, we expect to see continued strong free cash flow generation going forward. That will enable our Board to continue to raise our dividend and also enable us to bring down leverage.”).

<sup>67</sup> *See* Press Release, “Comcast Delivers Multi-Gig Symmetrical Speeds in The World’s First DOCSIS 4.0 Deployment,” *Comcast* (Dec. 15, 2023); *see also* Comments of Jason Armstrong, Comcast CFO, Q4 2023 Investor Call (Jan. 25, 2024) (“At Connectivity & Platforms, CapEx increased 1.5 percent for the full year with CapEx intensity coming in at 10.1 percent primarily driven by investments to further strengthen and extend our network. In 2024, we expect CapEx intensity to be in the same range as we continue to transition our U.S. network to DOCSIS 4.0 and accelerate our growth in homes passed.”) (emphasis added).

<sup>68</sup> *See, e.g.*, Comments of Brian Roberts, Comcast Corporation CEO, Q4 2023 Investor Call

Comcast fully expects these trends of high cash flow generation to continue as it completes its DOCSIS 4 rollout, and it has given absolutely no indication that the pending Title II reclassification or any other FCC policy puts that expectation at risk.<sup>69</sup>

It is important to understand, however, that different companies can be highly profitable, but choose different methods to return cash to shareholders. Some companies, like AT&T and Verizon, have not been viewed by investors as high-equity growth companies, but rather high dividend paying companies—while a company like Charter pays no dividends but pursues consistent mergers and acquisitions, and repurchases significant amounts of its stock. High-equity growth companies have stock prices that consistently increase over time. High-dividend companies typically have dividend yields above 5 percent, but do not see their stock prices grow as much as high-equity growth firms.). Figures 22 and 23 illustrate these diverging strategies.

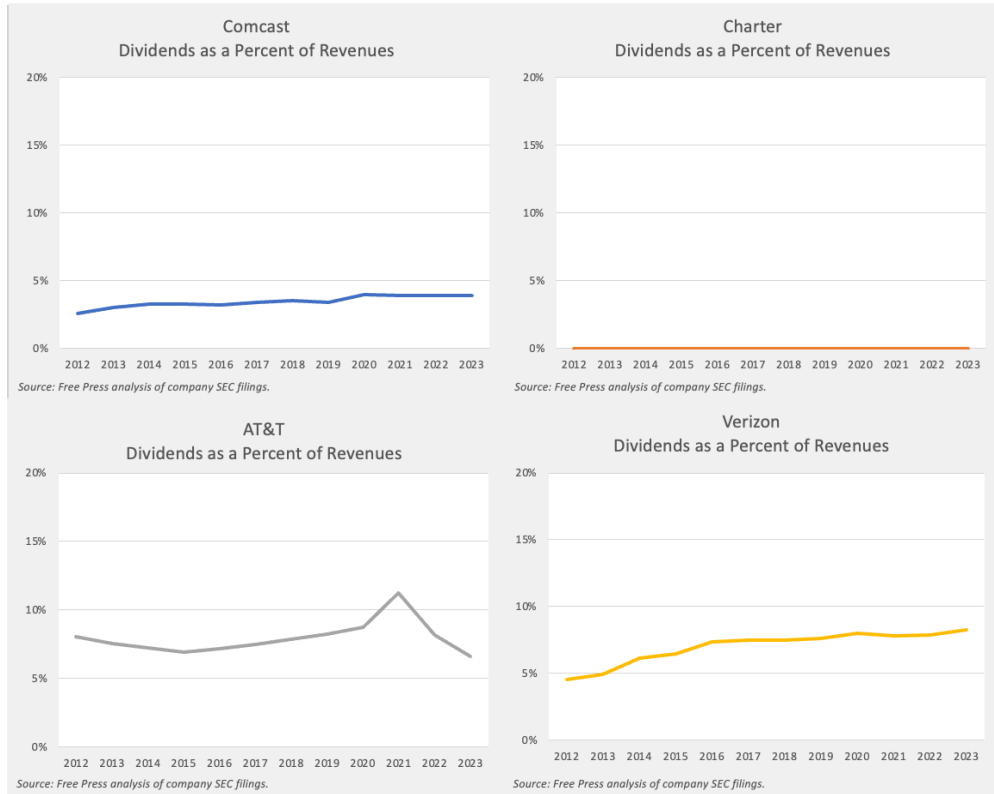
In sum, the U.S. ISPs as a whole are remarkably consistent in terms of both capital investments and returning cash to shareholders (see Figure 24). Providers are becoming more efficient with their deployments, as shown by a stable and slowly declining aggregate capital intensity value, with slightly elevated levels from 2021 to 2023 reflecting 5G and increased FTTH investments. ISPs are consistently paying dividends between 4 and 6 percent of revenues. And the recent growth in their share repurchases while they are also increasing investments is a strong indicator of a financially healthy industry that anticipates continued growth. There’s simply nothing in the historic performance of these companies or in their statements about their future expectations that indicates the Commission’s broadband authority policy changes had, or will have, an impact on this highly stable and profitable industry.

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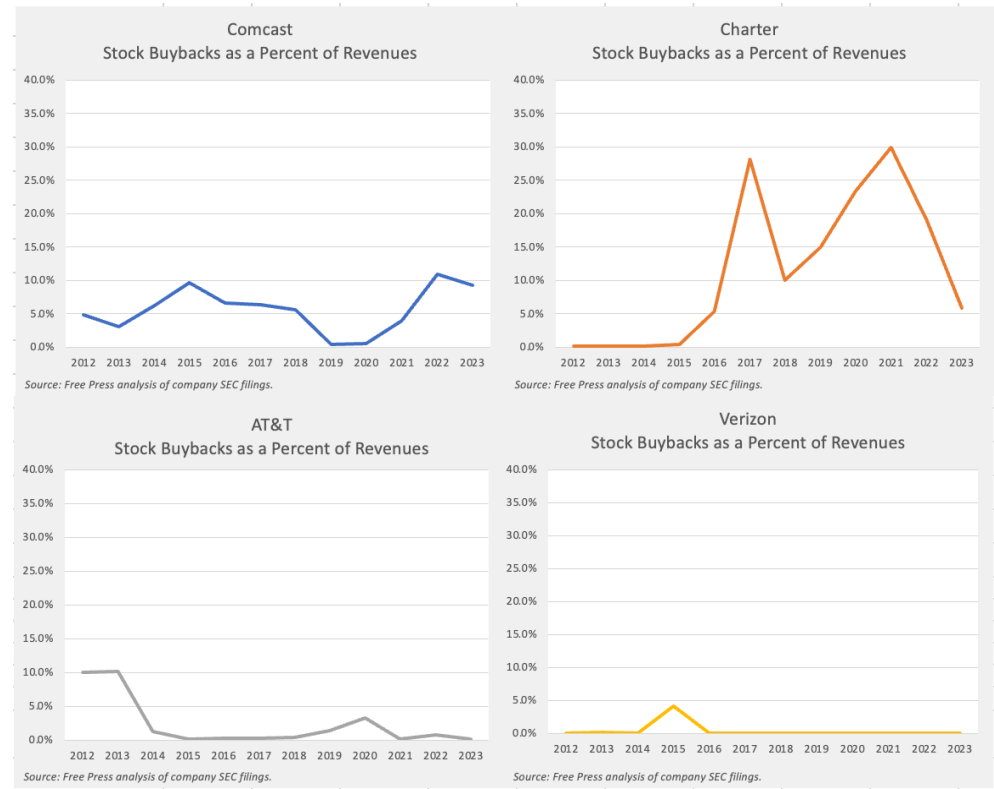
(Jan. 25, 2024) (“What’s also important is that in 2023 alone, we returned \$16 billion in capital to our shareholders. And as you just heard, it’s the 16th straight year that we just raised our dividend. That’s consistency.”); *id.* (“So buybacks, you’re right, we reauthorized or re-upped this morning for \$15 billion . . . . I think the formula that’s been in place for very strong capital returns, yes, continues to be in place . . . . And if you look at the recent history since mid-’21 since we started buying back or we started the buyback program, we’ve bought back 15 percent of our stock in that time frame, so a very good metric there. So more capital returns to continue.”).

<sup>69</sup> See, e.g., Armstrong, Comcast CFO, 2024 Morgan Stanley Technology, Media & Telecom Conference, *supra* note 24 (“And the type of cash flow that’s coming out of the business just to sort of round out the picture and get to the bottom line. We generated a lot of free cash flow. We’ll grow that free cash flow and a really good balance across the company, the investment. I think we’re investing aggressively in the 6 growth businesses, but there’s a lot of cash left over, and we’ve been deploying that back to shareholders at an aggressive rate.”) (emphasis added).

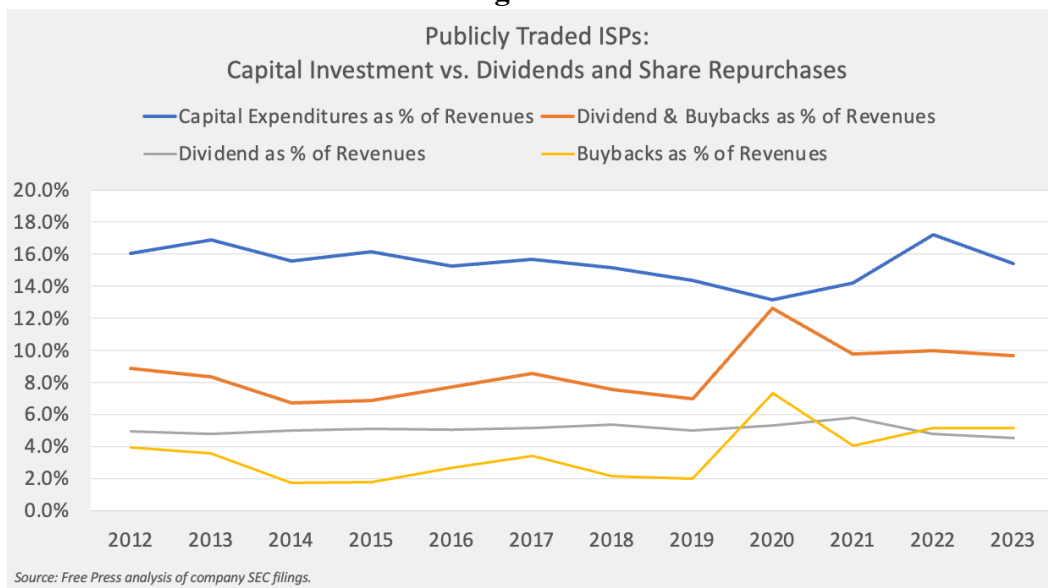
**Figure 22:**



**Figure 23:**



**Figure 24:**



### **Technology Cycles, Competition, and User Demand for Open Telecom Services Drive ISPs’ Broadband Deployment Decisions**

We now examine the factors that ISPs have consistently identified as driving their investment decisions, and those that could in theory impact ISPs’ investments but have not done so in the recent period of elevated broadband upgrades and deployments.

Despite the Senate finally seating a fifth FCC Commissioner in 2023, which finally allowed the Commission to move ahead with this proceeding, not a single ISP representative raised the issue of Title II on their full-year 2023 results calls to our knowledge, and not one analyst asked a question about the issue on any of these calls.

This absence of any discussion of the Commission’s plans to restore Title II should come as no surprise to anyone who takes the time to understand this industry. ISPs do face certain deployment barriers that regulation can exacerbate or ameliorate, but these issues involve matters like permitting, pole attachments, and multiple tenant environment access.<sup>70</sup> ISP deployments are also impacted by subsidy policies. But the lessons and the ISPs’ own data from the past decade make it very clear that FCC regulation generally, and its Title II-based Net Neutrality rules specifically, have little to no impact on ISP network deployment decisions.

ISPs’ decisions to invest are almost exclusively driven by expectations about user demand and the cadence of technology cycles. Competition (or concerns about increased future competition) also drives ISP investment decisions. While the U.S. home internet market remains

<sup>70</sup> See, e.g., Masha Abarinova, “‘Paint, poles and permitting’: What’s bugging broadband providers,” *Fierce Telecom* (Mar. 8, 2024).

a duopoly, it is in most locations not a monopoly, and this limited competition has over time resulted in supply-side driven quality increases.<sup>71</sup>

For example, when the Commission first started collecting data on broadband subscribership in 1999, cable ISPs accounted for about half of all subscriptions.<sup>72</sup> Internet users looking for a faster experience than dial-up chose DSL as often as cable modem service, even though the latter offered faster theoretical transmission speeds. Unlike DSL, cable modem users shared a very limited pool of bandwidth across entire neighborhoods, meaning that the performance of these connections often suffered during evening hours. LECs offering DSL (or ISDN) took advantage of this, running commercials making light of the problem of cable internet “bandwidth hogs.”<sup>73</sup>

This cycle of one side of the industry’s action followed by the other side reacting continued. Cable company ISPs responded by allocating more QAM channels to downstream bandwidth, splitting nodes, deploying so-called “powerboost” technology, and deploying DOCSIS 3.0 upgrades. Comcast ran a series of tongue-in-cheek ads featuring a family of turtles called the “Slowskys,” who professed their preference for slow DSL over faster cable modem service.<sup>74</sup> ILECs subsequently increased their capacities through VDSL, ADSL2+, and FTTH upgrades, which was met by cable’s rollout of DOCSIS 3.1. And now, ILECs and CMRS providers lean heavily into FTTH upgrades and fixed wireless deployment. Today, fiber providers run advertisements noting cable’s upstream speed limitations, and cable providers run ads noting the limitations of fixed wireless services.

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<sup>71</sup> One of DOCSIS “pioneer” John Chapman’s “three laws of broadband” is that in a competitive market, access speeds are supply-side driven, not demand-side driven. This makes intuitive sense, as ISP upgrade deployments are very large projects that require significant resources. If a carrier faces no competition, it would profit maximize by delaying upgrades. In contrast, in a competitive market, upgrades are a part of the regular business cycle, and an opportunity for individual ISPs to differentiate their service from their competitors. This supply-driven observation certainly applies to the past decade (*i.e.*, in the DOCSIS 3.1, VDSL/ADSL2+, and LTE eras), where carriers deploy services that have transmission capacities in excess of what the average user requires. This allows ISPs to price differentiate and earn higher surpluses from early adopters and others with a high willingness to pay for faster transmission speeds.

<sup>72</sup> Wireline Competition Bureau, Federal Communications Commission, “High-Speed Services for Internet Access: Status as of June 30, 2004” (Dec. 22, 2004).

<sup>73</sup> *See, e.g.*, Walter Ciciora, “The Cable Modem Traffic Jam,” *IEEE Spectrum* (June 1, 2001) (“But, these days, earlier converts to broadband are noticing something different. They are seeing their Internet access rates slow down, instead of speed up. They are sitting in a cable modem traffic jam. In fact, today, a 56K dial-up modem can at times be faster than a cable modem and access can be more reliable.”).

<sup>74</sup> *See, e.g.*, Tim Nudd, “Comcast tortoises deal with sudden fame,” *Adweek* (Mar. 20, 2006).

Now that the home internet market is reaching saturation levels, carriers who want top-and bottom-line revenue and profit growth need to do more to remain competitive, as they can no longer count on sustained subscriber growth. As noted above, cable company ISPs lost customers in 2022 and 2023. This initially spooked some investors, but cable ISPs have managed to continue to grow revenues ahead of the pace of inflation by marketing higher-priced and higher-speed services.<sup>75</sup> Making sure their networks stay well ahead of user demand and enabling users to access the content of their choosing is critical to future ISP financial success, and that means ISPs will continue to have strong incentives to deploy high-quality broadband.<sup>76</sup>

### **Most Carriers Reduced Capital Spending in Wake of the 2017 Trump Tax Cuts**

The claim that Title II authority and Net Neutrality rules reduce network investment is mostly just a scare tactic; but to the extent it could be genuine, it would need a plausible mechanism that explains its supposed causality. That mechanism would presumably be that these regulations or even simple regulatory classifications would somehow deprive ISPs of a net marginal income stream, and thus they would not make the additional network investments needed to capture that marginal income.<sup>77</sup> This of course makes little sense—there is no edge

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<sup>75</sup> See, e.g., Armstrong, Comcast CFO, 2024 Morgan Stanley Technology, Media & Telecom Conference, *supra* note 24 (“Broadband, we’ve got 32 million subscribers, relatively flat year-over-year in 2023, but we grew ARPU 3 percent to 4 percent, right? Historically, we’ve gone 3 percent to 4 percent. We were at the high end of that range in 2023, which in a competitive environment, I think, was a question coming into the year . . . . By the way, 4 percent ARPU growth is \$1.2 billion in incremental revenue, high-margin revenue across the company. So incredibly important, incredibly important to be navigating it that way, but still a lot of room to run.”).

<sup>76</sup> See, e.g., AT&T Inc., 2023 Annual Report (Form 10-K) (Feb. 23, 2024) (“We must continually invest in our networks in order to improve our wireless and broadband services to meet this increasing demand and changes in customer expectations while remaining competitive. Improvements in these services depend on many factors, including continued access to and deployment of adequate spectrum and the capital needed to expand our wireline network to support transport of these services. In order to stem broadband subscriber losses to cable competitors in our non-fiber wireline areas, we have been expanding our all-fiber wireline network.”).

<sup>77</sup> We emphasize a net marginal income stream because in order for this claim to be valid, the ISP’s behavior violating some tenet of Title II or the Open Internet rules would need to earn marginal income in a manner that did not lose an ISP more profit than it generates. But that is a very dubious proposition given the realities of consumer demand, and is certainly in part why the global industry chatter around most possible non-net neutral business practices has largely died out (though there are notable exceptions, e.g. the recent push by incumbents in some countries to force edge companies to pay terminating access fees). ISPs (particularly in the United States, where there is cable/ILEC competition) have two decades of market experience showing strong consumer demand for open broadband, and there is a large segment of customers with a very high willingness to pay for faster transmission speed services. In order to generate material levels of demand for non-net neutral services, ISPs would have to reduce the quality of their

company demand for prioritized last-mile delivery, unless congestion levels are so consistently high that the average user’s experience suffers. Setting that aside, this claim of Title II harm essentially boils down to the two implausible notions that ISPs are constantly underinvesting in their networks, and that any marginal cash would immediately be used for network upgrades.

In 2017, Congress enacted the Tax Cuts and Jobs Act (“TCJA” or “Trump tax cut”), which among other things slashed the corporate tax rate from 35 percent to 21 percent, and reauthorized “bonus depreciation,” a tax break for capital expenditures that Congress has authorized and extended eleven times since 2002.<sup>78</sup> This resulted in a massive accounting and cash flow windfall for U.S. corporations, particularly those making significant capital investments. The Communications Workers of America estimated that AT&T alone would save \$42 billion in taxes in the first decade after TCJA’s enactment.<sup>79</sup> AT&T’s effective federal tax rate was 34 percent in the three years prior to TCJA. In 2017, AT&T’s effective tax rate was negative 97 percent. The company’s effective tax rate in 2018 and 2019 was 19 percent. Goodwill impairments in 2020 and 2022 once again reduced AT&T’s tax rate, but during “normal” periods, it is close to 20 percent.<sup>80</sup>

AT&T claimed it increased its capital investments by \$1 billion in 2018 because of the TCJA,<sup>81</sup> but there is no evidence to support this. AT&T’s nominal capital expenditures declined from 2017 to 2018 (with or without inclusion of vendor financing). As discussed above, AT&T did not deploy FTTH to any additional homes in 2018, beyond what it had already committed to build in its DTV merger condition agreement. And it completed its commitment right on time in 2019 with no marginal FTTH deployment beyond greenfield builds for the remainder of 2019 and all of 2020.<sup>82</sup> There’s no indication that AT&T increased its wireless investment in 2018 (and

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best-efforts broadband service, which would lower users’ willingness to pay, and likely result in a net profit loss.

<sup>78</sup> Bonus depreciation allows a firm to accelerate the depreciation schedule for capital assets (by varying percentage amounts) in the tax year those capital investments were made. This accounting change lowers a firm’s taxable income. The TCJA authorized firms to deduct 100 percent of the cost of assets with useful lives of 20 years or less, for tax years 2017 through 2022, phasing down that percentage by 20 percentage points each year after. *See* York *et al.*, “The Economic, Revenue, and Distributional Effects of Permanent 100 Percent Bonus Depreciation,” *Tax Foundation* (Aug. 30, 2022).

<sup>79</sup> *See* Stephen Gandel, “AT&T got a giant tax cut but has laid off thousands, union says,” *CBS News* (Aug. 28, 2019).

<sup>80</sup> AT&T’s restated effective tax rate for 2020 was negative 329 percent. *See* AT&T Inc., 2022 Annual Report (Form 10-K) (Feb. 13, 2023). The company’s effective tax rates from 2021 to 2023 were 18.5 percent, negative 122 percent, and 21.3 percent respectively. *See* AT&T Inc., 2023 Annual Report, *supra* note 76.

<sup>81</sup> *See* Gandel, *supra* note 79.

<sup>82</sup> *See* Stephens, AT&T CFO, Q2 2019 Investor Call, *supra* note 42 (“We passed an important milestone with our fiber deployment reaching 14 million customer locations and satisfying our

in any case, the supposed tax-cut driven investments were promised in wired not wireless networks),<sup>83</sup> as AT&T ultimately hit the twelve-market target it announced for 5G deployment at the start of the year.<sup>84</sup>

Even if we accept AT&T's claim that it increased its capex by \$1 billion above what it would have spent in 2018, its net (nominal) cash savings for taxes actually paid that year was \$2.36 billion. This illustrates what should be an obvious point: carriers deploy infrastructure not based on the amount of cash they have available at any time, but based on the needs of their business. Otherwise we would have seen extraordinarily large amounts of capital spending in 2018 following the Trump tax cuts.

Below, in Figure 25, we present the Big 4 carriers' combined inflation-adjusted income taxes paid and their provision for income taxes for the 2012–2023 period.<sup>85</sup> Figure 26 presents each of these ISP's inflation-adjusted income taxes paid during this period, and Figure 27 does the same for their provision for income taxes.

This data indicates several things: first, the TCJA clearly lowered these carriers' tax burdens (actual and accounting); second, no two carriers are alike in terms of tax burden—while one carrier's tax payments might go down in a given year, another's might go up; and finally, between 2021 and 2022, three of the Big 4 carriers saw their taxes paid increase (Comcast, Charter, and AT&T), but despite this all three significantly increased their capital investments in 2022.

This data strongly suggests that ISPs' investment actions from 2018 to 2023 were not notably impacted by the additional cash flow freed up by the TCJA. Though carriers applauded the TCJA, a review of their investor calls turns up no commentary on any marginal deployment

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fiber build commitments.”).

<sup>83</sup> See Press Release, “AT&T to Invest an Additional \$1 Billion in the United States if Competitive Tax Rate Enacted,” *AT&T* (Nov. 8, 2017) (“AT&T's year-one incremental investment will support the company's fiber build to U.S. homes and businesses. Beyond 2018, a lower tax rate would incent AT&T to continue to deploy incremental capital to its fiber and future 5G builds.”).

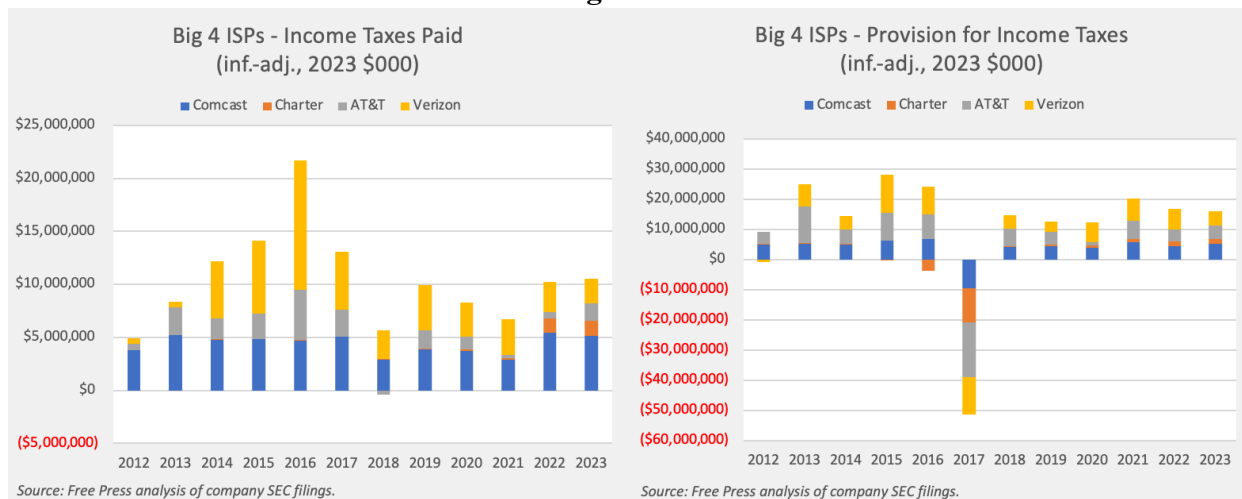
<sup>84</sup> See, e.g., Stephenson, AT&T CEO, Q4 2017 Investor Call, *supra* note 42 (“But as you begin to think about [5G] mobile solutions, we will be deploying mobile solutions in 2018. And it's going to be in 12 markets is what we'll be doing.”); Stephenson, AT&T CEO, Q4 2018 Investor Call, *supra* note 42 (“We introduced the first standards-based mobile 5G network in parts of 12 cities last month . . .”).

<sup>85</sup> Because companies can defer taxes, there are two types of tax figures: income taxes paid and provision for income taxes. The former impacts the balance sheet, while the latter impacts the income statement. Both are important factors that could potentially impact investment. Reducing taxes actually paid increases a firm's immediate income, and thus cash that could be used for capital expenditures. Reductions in the taxes provisioned could increase a firm's future available cash.



increases because of these tax cuts. Congress is now poised to extend bonus depreciation at 100 percent through 2026.<sup>86</sup> But there are no ISPs telling their investors or investment analysts that their broadband deployment plans will be reduced if Congress fails to do so—or that deployment levels will be maintained or increased if Congress does restore this tax cut.<sup>87</sup> For ISPs, they only see this extended tax cut as impacting their cash flow.<sup>88</sup>

**Figure 25:**

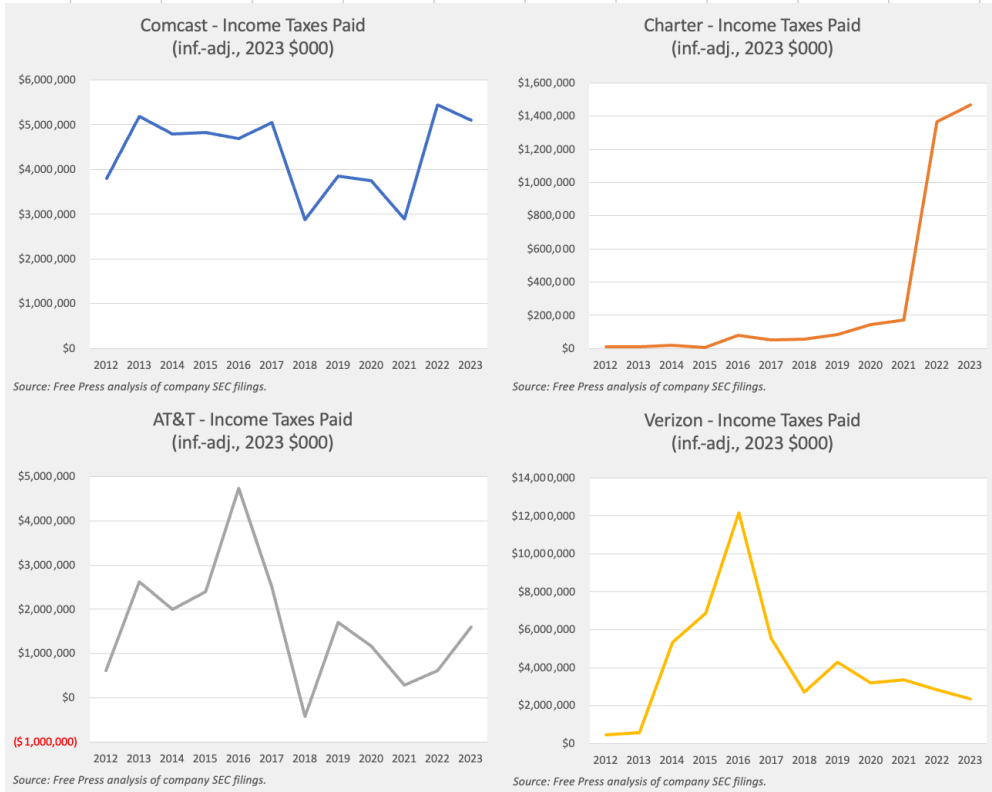


<sup>86</sup> On January 31, 2024, the U.S. House of Representatives passed H.R. 7024, the “Tax Relief for American Families and Workers Act of 2024.” The Senate placed the bill on its legislative calendar on March 21, 2024. This would extend 100 percent bonus depreciation through 2026 generally, and through 2027 for properties with longer production periods. *See* Tax Relief for American Families and Workers Act of 2024, H.R. 7024, 118th Cong. (2024).

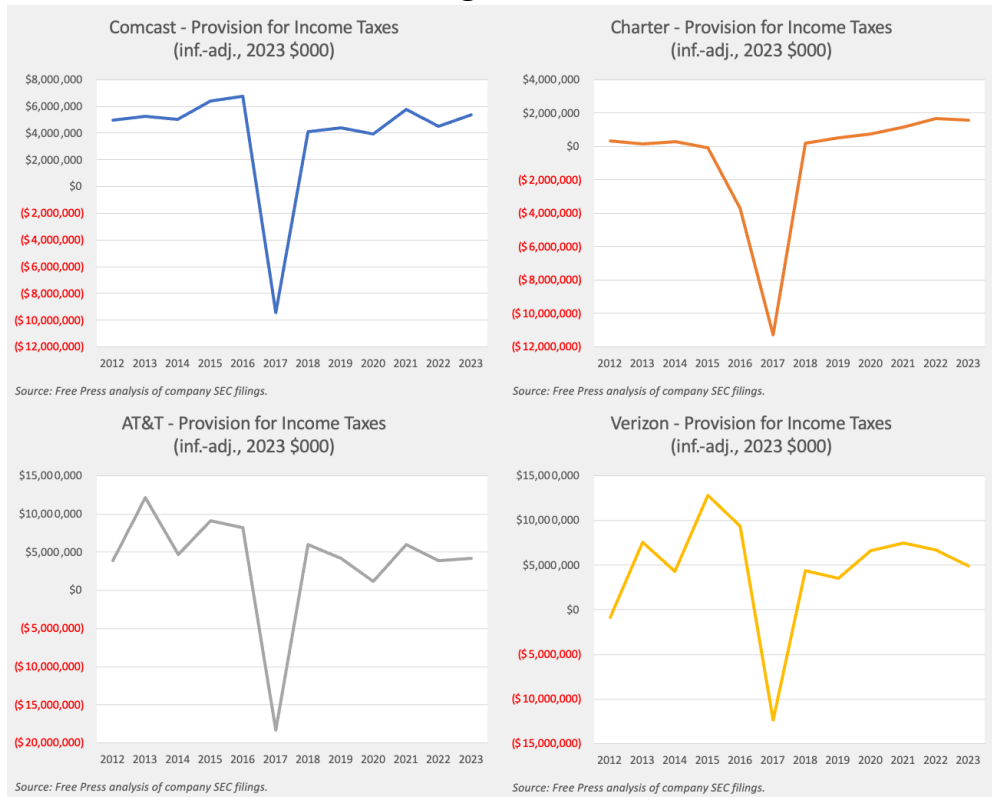
<sup>87</sup> Lumen’s CFO recently stated that the pending tax bill, if enacted this year, would amount to “about \$350 million a year of incremental benefit. So we’re obviously big supporters of that, and we’ll see where that lands. That’s not in our guidance.” Comments of Christopher Stansbury, Lumen CFO, 2024 Morgan Stanley Technology, Media & Telecom Conference (Mar. 5, 2024). Lumen spent \$3.1 billion in capex during 2023 and guided for \$2.7 to \$2.9 billion for 2024. Therefore a \$350 million incremental cash benefit would represent a 13 percent rebate of Lumen’s planned capital investment in 2024. However, Lumen gave no indication that it would increase its pace of FTTH deployment this year if Congress acts. It has made clear that its 2024 target is 500,000 new passings.

<sup>88</sup> *See* Comments of Jessica Fischer, Charter Communications CFO, Q4 2023 Investor Call (Feb. 2, 2024) (“On the cash tax side . . . it’s not just bonus [depreciation]. It’s also R&D and interest expense deductions that will impact us. But I would say the reforms that are being considered support the economics of our investments in connecting rural America and upgrading the network. And so we are fully in support of them. I think it’s a little premature to adjust our guidance. But given the investments that we’re making, we do expect there to be a material benefit to cash taxes if the legislation were to go through.”) (emphasis added).

**Figure 26:**



**Figure 27:**



## **Elevated Interest Rates May Have Caused Certain ISPs to Lengthen the Time of Their Deployment Plans, but Have Not Altered ISPs' Overall Deployment Plans or Their Long-Term Positive View of the Broadband Market**

Businesses with significant and stable recurring cash flows operate most efficiently when they carry some level of debt, particularly if their return on invested capital is above their average weighted interest rate on their debt. When interest rates are low, firms generally will be comfortable with higher leverage ratios, particularly if they are using debt to grow their businesses. When interest rates rise, firms will put more of their cash flow into deleveraging, to not only reduce cash used for interest payments, but also to improve their credit worthiness in the eyes of corporate bondholders.

Interest rates were historically low between 2009 and 2016, then started to slowly rise until the first summer of the COVID-19 pandemic. Rates have been up sharply since the start of 2022, to pre-Great Recession levels. This rather sudden increase of interest rates for what is still an uncertain duration should impact ISPs' capital allocation decisions. And though there is some evidence that high rates are indeed impacting ISPs, the impact is not uniform across carriers, and no ISP has changed its overall broadband deployment goals because of higher interest rates.

For example, Charter's CEO recently confirmed that its DOCSIS 4.0 upgrade and rural FTTH deployment remain unchanged in the face of higher interest rates.<sup>89</sup> Charter's CEO attributed that steadiness to the company's long-term bullish view of the broadband market and its belief that these network deployments are the best way to generate profits over the long-term.<sup>90</sup>

Similarly, when asked about its future outlook and the impact of rising interest rates, AT&T recently responded that "nothing's changed" in its deployment plans, in part because of unwavering consumer demand for advanced broadband services.<sup>91</sup> In fact, for AT&T, it seems

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<sup>89</sup> As we discuss below, Charter's deployment goals did slip by a few months extending into 2026. The company attributed this entirely to a technology certification issue.

<sup>90</sup> See, e.g., Winfrey, Charter Communications CEO, 2024 Morgan Stanley Technology, Media & Telecom Conference, *supra* note 59 ("I mean I'd start by saying, we clearly recognize the uncertainty and a bit of volatility in the capital markets. We pay attention to it. It matters to us. But at the same time, when we think about the long-term potential of what we have, we have the best networks, we have the best products. I think we've got the best service. We save customers money. And we're investing in all that to make sure that we actually create even further distance for all of that. And so all of that ties to our philosophy of driving long-term free cash flow generation. That's how we're incentivized, it's how we're motivated, create value for shareholders and we're really committed to . . . doing that even in unique investment and competitive cycles, which we're clearly in today.") (emphasis added).

<sup>91</sup> See McElfresh, AT&T COO, 2024 Morgan Stanley Technology, Media & Telecom Conference, *supra* note 58 ("I think with what John and Pascal provided in the fourth quarter in terms of guidance and their commentary of how we see the market and how we see not only the market, but the competitive nature of the market, backdropped against the interest rates in the

that its leverage ratio impacts its investment decisions more than interest rates do. The company expects to hit its leverage ratio target of 2.5 (debt to recurring EBITDA) next year, which it describes as a level that provides “an opportunity to continue to invest, perhaps even more than currently or to build and also look for other ways to deliver value to shareholders, whether that be buybacks, incremental dividends in addition to investment to fiber.”<sup>92</sup>

Some carriers have indicated that rising rates are impacting their deployment plans, but only in terms of the pace of deployment, and not in terms of coverage goals. For example, in the summer of 2023, Lumen announced a 2024 target of 750,000 new FTTH passings.<sup>93</sup> But in February of this year, it revised that goal back down to 500,000 new passings,<sup>94</sup> which it later implied was due to the high cost of capital, while also stating that other fiber providers are slowing down too.<sup>95</sup> This is a reasonable explanation for Lumen’s own slowdown, as the

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economy, nothing’s changed from that. We see—that’s why I’m pleased with the way the business is performing right now. We see it [to] be very healthy, very rational. And still, our products and services remain in high demand. And that’s a good place to be.”).

<sup>92</sup> Desroches, AT&T CFO, Deutsche Bank 32nd Annual Media, Internet & Telecom Conference, *supra* note 48. Desroches was asked, “You mentioned that once you reach the fiber goal at the end of 2025 to 30 million locations, you plan to continue to build. I mean is there any way you can help us to think about what the pace of that build out might look like? Is it—is there any reason to think it would change from what you’re doing currently?” AT&T’s CFO stated, “It’s really the important thing. You get to [the] middle of next year, we would have hit our leverage target, right? And assuming we remain at 2.5x and given where interest rates are today, we’re probably comfortable [living] within the 2.5x [umbrella]. So the capacity that gets freed up by just remaining at 2.5x gives us an opportunity to continue to invest, perhaps even more than currently or to build and also look for other ways to deliver value to shareholders, whether that be buybacks, incremental dividends in addition to investment to fiber. So all those things would be on the table and the Board will have options in terms of deciding what it wants to do in terms of overall capital allocation.”

<sup>93</sup> See Comments of Maxine Moreau, Lumen Technologies President of Mass Markets, 2023 Lumen Technologies Investor Day (June 5, 2023) (“We expect to build over 500,000 locations this year. We expect to ramp that to approximately 750,000 locations next year and start to ramp to 1 million starting in 2025.”).

<sup>94</sup> See Comments of Kathleen Johnson, Lumen Technologies CEO, Q4 2023 Investor Call (Feb. 6, 2024) (“[I]n Mass Markets, we delivered our commitment to grow our fiber network by more than 500,000 locations and intend to maintain that similar robust rate in 2024.”).

<sup>95</sup> See Stansbury, Lumen CFO, 2024 Morgan Stanley Technology, Media & Telecom Conference, *supra* note 87. Stansbury was asked: “I think there’s a concern among the investors that you could cut too deep—pull back capex too far or opex, and I think the TSA increased the interest expense and now again and that—how do we get comfortable that this is—you’re able to achieve what you want to achieve without damaging the long-term?” Lumen’s CFO answered, “if you recall, back to Investor Day, we’d say we’d go from 0.5 million [new FTTH passings] in ‘23 to 750,000 in ‘24 and then 1 million in ‘25. We said going forward, we’re holding 0.5 million. What’s helpful is that the market has already done that. So if you look at all of our major

company refinanced its debts in March of this year to increase liquidity and dramatically reduce the amount of loans due in the next several years.<sup>96</sup> This refinancing came with higher interest payments in the short-term.<sup>97</sup>

But it's unclear what Lumen is referring to when it says it sees other carriers slowing down the pace of deployment because of higher interest rates. AT&T's fiber deployment goals and pace are unchanged (as we noted above), as are Charter's and Frontier's (as discussed below). In fact, when Charter was asked what it was seeing and expecting in terms of other fiber companies deploying in Charter's cable service territory, Charter's CFO said "in terms of total velocity, I don't think that we've seen a big change."<sup>98</sup> The CFO went on to say that Charter hoped that higher interest rates would slow down its competitors' pace of FTTH deployment, but that had not happened yet.<sup>99</sup>

In sum, it is remarkable how confident ISPs are in the future of the broadband market. Carriers of all types and sizes are making deployment decisions based almost entirely on the need to stay competitive in the face of strong consumer demand. Even factors that directly impact their earnings and cash flow, like taxes and interest rates, have not impacted their deployment goals. But at least tax cuts and interest rates merited discussion on investor calls and

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competitors in that space. They have all pulled back on spending as the cost of capital has skyrocketed. So that doesn't put us in a weaker position vis-a-vis the competition. I think it puts us in line—and that compensates for the higher cost."

<sup>96</sup> See Press Release, "Lumen Technologies Completes TSA Transactions, Enabling Transformation Strategy," *Lumen Technologies, Inc.* (Mar. 22, 2024).

<sup>97</sup> See Comments of Christopher Stansbury, Lumen CFO, Q4 2023 Investor Call (Feb. 6, 2024) ("We expect free cash flow to be impacted by higher interest expense related to our new TSA agreement. And based on our initial analysis, we've included an incremental \$125 million to \$225 million of cash interest in 2024 versus 2023.").

<sup>98</sup> Comments of Jessica Fischer, Charter Communications CFO, Deutsche Bank 32nd Annual Media, Internet & Telecom Conference (Mar. 12, 2024).

<sup>99</sup> See *id.* ("In terms of total velocity, I don't think that we've seen a big change. There are quarters where there's volatility so where we might see it come up and down. There's volatility across carriers as to the building in a particular corner. But we haven't yet seen a change in sort of the velocity of total fiber overbuild. And it's interesting. I think that many of the passings will perhaps—I think that they're reaching the point where the passings that were the least expensive to build and that were in the best demographic footprints have already been built. I think as you get into those next rounds of passings, the passings become more expensive or sort of—or it's harder to reach penetration. Certainly, I think we've seen some activity in the market that leads me to believe that people are struggling to reach the penetration that they had intended for those passings. And the cost of capital now is higher than the cost of capital was when a lot of those overbuilds were announced. And so my hope is that the combination of those things, it should come together to say that there's overbuild that probably shouldn't be done. And so we should see a decrease in the velocity, but we haven't yet.").

at investment conferences—unlike the Commission’s pending Title II reclassification and Net Neutrality rules restoration, which were completely absent in these communications.

### **ISPs Are Bullish on the Future of the Broadband Market and Understand that the Key to Their Financial Prosperity Lies in Offering Robust, Open Telecommunications Services**

The U.S. broadband market is in a very unique time period. The states are preparing to hand out \$42.5 billion in broadband deployment subsidies starting next year. This cash influx is on top of billions of dollars currently flowing from other deployment subsidy programs including RDOF, CRF, and USDA’s ReConnect program. Though subsidy programs will of course foster more broadband deployment eventually, they can actually reduce the level of deployment in the short term. This effect is due to the so-called “capital on strike” phenomenon, where the potential for a firm to obtain future subsidy support will actually cause it to delay deployment plans it would have otherwise implemented because potential earnings will be higher if it receives a subsidy.<sup>100</sup>

Analysts also expect that the future pace of FTTH deployment will be impacted by “workforce availability, permitting delays and other causes.”<sup>101</sup> However, despite these factors,

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<sup>100</sup> See, e.g., Mike Dano, “Broadband operator spending to pick back up in 2024... or later,” *Light Reading* (Jan. 31, 2024) (“But allocation of those funds is taking longer than expected, forcing network operators to stall their deployment plans until they have a better sense of how much funding they might get. ‘While they do this, they slow their new [network] builds as BEAD money could be used instead of consuming their own capital, and thus, we’ll slow our appliance shipments until decisions are made and funds are awarded,’ [CEO of broadband equipment vendor Calix’s Michael] Weening said. ‘At that point, the winners will move ahead and those who decided to skip the BEAD program or did not receive BEAD funding, [will] begin investing to ensure that the winner does not impinge on their market. This represents a delay but also represents a unique opportunity for Calix.’”); Linda Hardesty, “Fiber vendors feel pain before BEAD,” *Fierce Telecom* (Mar. 7, 2024) (“All the major providers of fiber and access components had a painful 2023, including Corning, CommScope, Adtran and Nokia. ‘Last year was a very challenging year because we had an inventory work-down year,’ said Gary Bolton, president and CEO of the Fiber Broadband Association. He said that during the Covid years, service providers were ‘buying up anything they could’ and ‘stockpiling’ because of concerns about the supply chain. Last year was also a challenging year for broadband vendors because ‘they know they have all this demand coming, but their factories were quiet last year,’ he added. Also, they’re wary about conducting mass layoffs because they anticipate humming factories in the latter half of this year.”).

<sup>101</sup> Carl Weinschenk, “Report: 42% of Rural/Small Town Homes Passed by Fiber,” *Telecompetitor* (Mar. 21, 2024) (“The ‘2024-2028 North American Fiber Broadband Report: FTTH and 5G Review And Forecast,’ said that \$150 billion will be spent on FTTH networks during the next five years. That spending, which the research firm claimed is more than has been spent on fiber to date, will come from network operator capex reinvestment, private equity investment, government subsidies and other sources. The complementary spending, which also will be unprecedented, will be limited by workforce availability, permitting delays and other

the leading FTTH analyst firm RVA LLC estimates that more than \$150 billion will be spent on FTTH networks from 2024 to 2028, a remarkable amount that it estimates is “more than has been spent on fiber to date.”<sup>102</sup>

This estimate of historic levels of fiber investment comes after the Commission released the *Notice* in this proceeding. It reflects a high level of bullish sentiment among U.S. ISPs of all types and sizes. For example, Verizon’s CFO recently stated that it “remain[s] bullish . . . We’ll continue to grow our footprint, both on the FiOS side as well as the FWA side.”<sup>103</sup> Frontier recently raised \$2.1 billion in capital from a securitization of 600,000 of its Dallas-area fiber passings, a novel fundraising method that reflects the broader investment community’s confidence in the future of the U.S. broadband market, and the expectation of strong future cash flow generation.<sup>104</sup>

Cable companies also remain very bullish, even in the face of all of this FTTH overbuilding and fixed wireless deployment, which has already contributed to a decline in the number of residential cable ISP subscribers. Cable companies expect fiber competition to go from about half of their footprint today to 60 percent in a few short years, and continue beyond that.<sup>105</sup>

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causes, the report stated—adding that the limiting factors will be particularly strong in the 2026 to 2028 timeframe.”).

<sup>102</sup> *Id.*

<sup>103</sup> Comments of Sowmyanarayan Sampath, CEO Verizon Consumer Group, Deutsche Bank 32nd Annual Media, Internet & Telecom Conference (Mar. 12, 2024) (“So we remain bullish. At the same time, we have owner’s economics. We’ll continue to grow our footprint, both on the FiOS side as well as the FWA side. So we feel we are really well placed in the converged world that we have today.”).

<sup>104</sup> *See* Comments of Scott Beasley, Frontier Communications CFO, 45th Annual Raymond James Institutional Investors Conference (Mar. 4, 2024) (“Last August, we raised \$2.1 billion of debt from securitizing roughly 600,000 passings in our Dallas market. That’s only 11 percent of our total fiber footprint. And that deal went extremely well. It was a landmark deal is a first of a kind for a public fiber player in the U.S. And it was really exciting to us for 3 reasons. First, it provided a clear path to fully fund our fiber build. It was only a small portion of our mature fiber assets, and we raised \$2.1 billion. So the implication is that with the rest of the mature fiber footprint, that provides a clear path to fully fund any needs that we still have. Secondly, it attracted a new pool of investment-grade long-term investors. ABS investors once they dug into fiber-to-the-home and our specific mature fiber assets, got very comfortable with the stability and the resilience of cash flows generated by mature fiber. And then third, it highlighted the value of our fiber network. We were able to raise debt at roughly \$3,400 per passing which is well below what public markets are valuing mature fiber right now. And so it did highlight the value that mature fiber has because of its stable and resilient cash flows.”) (emphasis added).

<sup>105</sup> *See, e.g.*, Armstrong, Comcast CFO, 2024 Morgan Stanley Technology, Media & Telecom Conference, *supra* note 24 (“We’ve always viewed fiber as it’s going to be a very viable competitor. That is our competitor for the long term. And we’ve gone from 0 percent of our base

But cable companies aren't sweating this growing competition, because they are building out networks with multi-gigabit per second symmetrical capacities across their entire footprint, and are doing so at a fraction of the cost ILECs incur to deploy FTTH.<sup>106</sup> And cable companies are confident that demand will be high for these upgraded services. Consider that cable companies already offer gigabit-capable DOCSIS 3.1 services, and though there's little reason for even the heaviest bandwidth-consuming households to need that level of transmission speed, uptake of these gigabit cable services has been robust. In 2023 alone, Comcast went from having 15 percent of its customer base on gigabit plans to 33 percent.<sup>107</sup> As Comcast Cable President Michael Cavanagh recently stated, "broadband is still a very large, healthy and profitable market."<sup>108</sup> This is the case because "the consumption trends . . . are encouraging for the future."<sup>109</sup> In other words, the future is bright for ISPs because of the strong demand for open

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to almost 50 percent of our base being exposed to a fiber competitor, and that's not stopping, right? We see that as 60 percent in the next couple of years and it will go beyond 60 percent, but we know how to compete against fiber really well.").

<sup>106</sup> *See id.* ("But if you step back and say, how do you win in a multiyear time frame, I'm optimistic it comes down to who's got the lowest cost to serve and lowest marginal cost to serve, which path we've laid out between mid Splits and DOCSIS 4.0 to get to multi-gig symmetrical. We've got an extremely cost-efficient way to go handle through the next wave of traffic. I'd put our economics up against fiber any day. In particular, when you think about wireless, when the conversation around fixed wireless changes, and it's not some cost and excess capacity and instead, it's okay, we've exhausted that, and we have to come back to this room and say, we need more spectrum. We got to split cell sites. Here's the cost of that, and we got to go try to serve the home broadband market with a true wireless cost structure. That's going to be a different conversation, right? And that's one where you've got to stack that up versus our marginal cost, and I think we've got a huge advantage there.") (emphasis added).

<sup>107</sup> *See id.* ("I think we're confident in the ability to grow ARPU, confident in the ability to sort of grow it along the lines of how we have historically. And it starts with segmentation, as I mentioned, but then it continues into the average customer doing more and getting more utility out of your network. And whether it's the 2 terabytes, and that's where the world is headed or the percentage of customers that are taking 400 meg speeds and above. That's 70 percent of our base right now, substantially higher than it was. We've got 1/3 of our customers taking at a 1 gig speeds and higher. That was 15 percent a year ago. So the world is moving higher. That's exactly what we want to see because we think we can accommodate that speed and that type of traffic at the lowest marginal cost. So I would tell you the underlying health and what people are doing on the network is very strong.") (emphases added).

<sup>108</sup> Comments of Michael Cavanagh, Comcast Cable Communications President, Q4 2023 Investor Call (Jan. 25, 2024).

<sup>109</sup> *Id.* ("Our domestic broadband business remains strong. We kept our very large and healthy base of subscribers flat while growing residential ARPU 3.9 percent, the high end of our historical range, driving solid EBITDA growth in Connectivity & Platforms and expanding margins to around 40 percent on an underlying basis. We achieved all of this despite an intensely competitive environment. And as I look back on 2023, I am confident that our strategy combined with excellent execution sets us up extremely well to navigate the road ahead. While the



internet access. And as higher-capacity networks become more ubiquitous, the virtuous cycle will continue, as developers gain a larger addressable market.<sup>110</sup> ISPs expect that greater use of virtual reality and artificial intelligence services in particular will fuel their own profit growth.<sup>111</sup> We've come a long way from the days when ISPs lamented "bandwidth hogs"<sup>112</sup> and embraced onerous data caps, and when carriers paid policy mercenaries to spread fears of a coming

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competitive environment is likely to remain at these levels for a period of time, broadband is still a very large, healthy and profitable market. And the consumption trends that we're seeing are encouraging for the future.") (emphasis added).

<sup>110</sup> See, e.g., Winfrey, Charter Communications CEO, 2024 Morgan Stanley Technology, Media & Telecom Conference, *supra* note 59 ("Charter, Comcast, Cox are all going on a DOCSIS 4.0 path means that you're going to have a ubiquitous, symmetrical, multi-gig capability across the entire country, which, for the first time, provides a scaled platform for product and software developers to develop new products that only—that not only use that bandwidth and that data and that seamless connectivity, but actually require it. And I think that's good for all of our businesses. In fact, if you think about DOCSIS 1, DOCSIS 2, DOCSIS 3, DOCSIS 3.1, now DOCSIS 4, that's always been the case. But when you have a fully deployed network in front of consumers and in front of product developers, they'll develop the product that really needs [the bandwidth] and insist on having that type of capacity and seamless connectivity, which is new.") (emphasis added).

<sup>111</sup> See, e.g., Sampath, CEO Verizon Consumer Group, Deutsche Bank 32nd Annual Media, Internet & Telecom Conference, *supra* note 103 ("Almost all our customers take unlimited. They like the nature of unlimited. They can do what they want, because you want customers to use the best network which is there. But it goes back to a better value equation that we have for the customer. They use more data. They know they're using more data, whether it's high def or more gaming or doing social media. They know they use more data. It's a better network, and hence, they're more comfortable paying more. So it goes back to the price value equation that we drive every piece. So I think more data consumption is definitely good for us. And we see new trends. Last 10 years has been largely driven by video. I think going forward, we are likely to see AR, VR, spatial computing take up a lot more capacity. There's going to be a point where it becomes a big thing. And then AI, you generate all this insight. You got to move it somewhere, and that's where networks get play. So we have 2 very interesting tailwinds for network growth over the next decade in the form of AR, VR and spatial computing, and AI and how that changes network dynamics.") (emphases added).

<sup>112</sup> In 2008, when Comcast first imposed a data cap and overage fees, we noted that "today's 'bandwidth hog' is tomorrow's average user." Brian Stelter, "Comcast to Place a Cap on Internet Downloads," *New York Times* (Aug. 29, 2008). It is therefore very fitting to hear Comcast now say "usually the median user equals the super users sort of 5 years forward." Armstrong, Comcast CFO, 2024 Morgan Stanley Technology, Media & Telecom Conference, *supra* note 24 ("We're seeing . . . our average customer using 700 gigs . . . which are kind of the—this is where the world is going, right? And as for the 5-year time frame, usually the median user equals the super users sort of 5 years forward. That's certainly been the case in the last 5 years. And our super users are up at 2 terabytes per month. So if that's the way the world is going, that's terrific.").

“exaflood” that would “put the internet at risk” if Network Neutrality was protected.<sup>113</sup> ISPs now acknowledge that they thrive when they give their “customers what they want and continu[e] to invest in [the] network to make sure that [they’re] never at a competitive disadvantage on the network side.”<sup>114</sup>

Indeed, as we noted in our initial comments, the “Commission’s Open Internet rules reset carriers’ incentives towards growth and away from artificial scarcity. The settling of the Net Neutrality issue was followed by an explosion in over-the-top video competition, which in turn has continued to fuel a dramatic increase in next-generation broadband network deployment.”<sup>115</sup> While carriers are attracted to the idea of offering quality-of-service add-on services that might improve some users’ experiences, the reality is that carriers are better off financially if they ensure all users have a quality experience.<sup>116</sup>

In short, the industry has clearly moved on from the monopoly mindset of reducing supply to maximize profit, because ISPs learned after the 2015 *Open Internet Order* that greater and more sustainable profits lie in offering robust telecom services.<sup>117</sup> Restoration of Title II

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<sup>113</sup> See Bret Swanson, “The Coming Exaflood,” *Wall Street Journal* (Jan. 20, 2007) (“Today there is much praise for YouTube, MySpace, blogs and all the other democratic digital technologies that are allowing you and me to transform media and commerce. But these infant Internet applications are at risk, thanks to the regulatory implications of ‘network neutrality.’ Proponents of this concept—including Democratic Reps. John Dingell and John Conyers, and Sen. Daniel Inouye, who have ascended to key committee chairs—are obsessed with divvying up the existing network, but oblivious to the need to build more capacity.”). As we’ve repeatedly noted in this and prior proceedings, the U.S. online video markets didn’t crumble following the 2015 *Open Internet Order*, they saw unprecedented levels of growth, as did ISPs. We don’t hear much about the “exaflood” anymore, because the position is indefensible, but also likely because no one is paying anyone to write op-eds about it anymore.

<sup>114</sup> Desroches, AT&T CFO, Deutsche Bank 32nd Annual Media, Internet & Telecom Conference, *supra* note 48 (“And we compete for the gross adds that do come to market, coupled with making sure that we are driving churn as low as possible by giving our customers what they want and continuing to invest in network to make sure that we’re never at a competitive disadvantage on the network side.”) (emphases added).

<sup>115</sup> Free Press Comments at 145.

<sup>116</sup> See, e.g., Mike Dano, “Cox killed its ‘Elite Gamer’ service – here’s why that’s important,” *Light Reading* (Mar. 14, 2024) (“Cable giant Cox Communications quietly discontinued its low latency ‘Elite Gamer’ service last year. The service, which cost up to \$7 per month, allowed users to improve their connection with video game servers by up to 32%. The company said it canceled the service due to lower than expected demand.”).

<sup>117</sup> See, e.g., Vesterberg, Verizon CEO, Q4 2023 Investor Call, *supra* note 21 (“When it comes to the growth in the network, yes, everybody is using the network more. It’s no different between fixed wireless access and FiOS . . . So I feel really good [ ] that people and customers are using our network more. That’s what this was intended for, and we have designed it like

won't do anything to dim ISPs' bright financial prospects. Rather, restoring Title II classification of BIAS will continue to point ISPs towards the light, and also ensure that users are protected in the event that an ISP does act in an unreasonably discriminatory manner.

### **ISPs' Capital Investments Will Continue to Be “Lumpy” as Providers Move Through Technology Cycles and Network Efficiencies Continue to Improve**

We are about to enter a five-year period where U.S. FTTH ISPs invest “more than has been spent on fiber to date.”<sup>118</sup> During that time, U.S. cable ISPs will dramatically expand their gigabit offerings, but many will do so while their capital expenditures decline.<sup>119</sup> This seeming contradiction is in part due to the nature of capital spending overall, which ISPs have described as cyclical,<sup>120</sup> “chunky,”<sup>121</sup> and “lumpy.”<sup>122</sup> For example, Cable One does not currently offer DOCSIS 4 services, but has already taken the steps needed to be ready to offer this new technology once mass market DOCSIS 4 modems are available. Because of that prior work, it was able to reduce capital expenditures in 2023 and likely will do so again in 2024.<sup>123</sup> Similarly, that.”) (emphasis added).

<sup>118</sup> See Weinschenk, *supra* note 101.

<sup>119</sup> See, e.g., John Fletcher, “Cable capex poised for slowest growth in years,” *S&P Global* (Mar. 27, 2024) (“Most of the big five cable operators are decreasing capital expenditures this year as they look to unlock network infrastructure investments already made since the COVID-19 pandemic. . . . Charter Communications Inc. is the sole operator looking to ramp up its 2024 capex spending by about 11% to \$12.30 billion.”).

<sup>120</sup> Winfrey, Charter Communications CEO, 2024 Morgan Stanley Technology, Media & Telecom Conference, *supra* note 59 (“Well, if you step back, all the way back, and think about the cable industry, it’s really been around since the 1950s. And no, it’s not new. We’ve been through different cycles of temporary competitive cycles as well as investment cycles. . . . we’re in one of those cycles right now where it’s a temporary amount of competition, slightly higher investment cycle that we’re going through right now. But we’re confident that we’ve got the best networks, best products, best service, the ability to save customers money. And that’s our strategy. And it’s also that strategy that we’ve deployed is also what creates some financial headroom so that when you’re in one of these cycles, then you have the ability to continue to grow EBITDA even through a temporary cycle.”).

<sup>121</sup> Armstrong, Comcast CFO, 2024 Morgan Stanley Technology, Media & Telecom Conference, *supra* note 28.

<sup>122</sup> Comments of AT&T, *supra* note 53.

<sup>123</sup> See Comments of Todd M. Koetje, Cable One CFO, Q4 2024 Investor Call (Feb. 22, 2024) (“Our capital expenditures have trended downward over the past 2 years thanks to the meaningful investments we’ve already made in our network, specifically with the DOCSIS 4.0 network architecture. The significant excess capacity generated by these investments provides us with the confidence to manage our total capital expenditures towards the low 300s for 2024.”) (emphasis added).

Comcast has already completed so much advanced work that it expects to maintain its current low level of capital intensity at 10 percent while it accelerates its growth in homes passed.<sup>124</sup>

But the cadence for specific network upgrades is also nonlinear. In other words, when an ISP deploys an upgrade, there are often significant upfront capital costs, which decrease as the project progresses to completion. As the CEO of cable overbuilder WideOpenWest recently noted, “last year, we spent a lot as we did a lot of the upfront work in many of these markets, and those kinds of upfront costs really will support hundreds of thousands of homes, not just the ones we’ve done so far.”<sup>125</sup> Its CFO later added that “a lot of the upfront work, all the setup, building of the hub, building a warehouse, is getting the materials out there. This year is more purely focused on adding homes passed. And that actually requires less money to set up stuff.”<sup>126</sup>

ISPs deploy new technologies as they become available and in accordance with their longer-term business plans. Some carriers don’t see an immediate business reason to make a specific investment, and have to prioritize other projects due to limited executive attention.<sup>127</sup> Other carriers intentionally go “faster” with their deployments, “pulling forward” future capex in

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<sup>124</sup> See, e.g., Comments of Jason Armstrong, Comcast Corporation CFO, Q4 2023 Investor Call (Jan. 25, 2024) (“At Connectivity & Platforms, capex increased 1.5% for the full year with CapEx intensity coming in at 10.1% primarily driven by investments to further strengthen and extend our network. In 2024, we expect capex intensity to be in the same range as we continue to transition our U.S. network to DOCSIS 4.0 and accelerate our growth in homes passed.”) (emphasis added).

<sup>125</sup> Comments of Teresa Elder, WideOpenWest CEO, Q4 2023 Investor Call (Mar. 13, 2024) (“John put out a guide for what we anticipate in terms of CapEx for greenfield this year of \$60 million. Last year, we spent a lot as we did a lot of the upfront work in many of these markets, and those kinds of upfront costs really will support hundreds of thousands of homes, not just the ones we’ve done so far.”).

<sup>126</sup> Comments of John Rego, WideOpenWest CFO, Q4 2023 Investor Call (Mar. 13, 2024) (“It’s clearly less capex dollars for greenfield than last year. However, a lot of the upfront work, all the setup building of the hub building a warehouse is getting the materials out there. This year is more purely focused on adding homes passed. And that actually requires less money to set up stuff. So we feel pretty comfortable we’re going to stay on pace. And we still feel pretty comfortable we’ll be on pace that we set actually on the Analyst Day, which was back in 2021. So it’s just a matter of where the dollars are spent.”).

<sup>127</sup> See Fischer, Charter Communications CFO, Deutsche Bank 32nd Annual Media, Internet & Telecom Conference, *supra* note 98 (“We’ve built out the Charlotte market, so that market is active with CBRS service. We have a second market planned for this year. The capital expenditures that you need to deploy CBRS aren’t huge. But in the context of knowing that there are limits around sort of our total CapEx as well as limits around the amount of executive attention that you can apply across multiple projects, we haven’t done as much of our investment in CBRS yet. I think that doesn’t mean that we won’t. CBRS continues to be a project that will have good ROI. As we grow more and more mobile customers, the ROI actually gets better. And I think it actually gives us a structural cost advantage in the long term.”) (emphases added).

order to free up cash to use at a later date for marketing, consumer equipment deals, and other actions that facilitate their “harvesting” of revenues.<sup>128</sup> Carriers themselves often speak of “business as usual” levels of capital expenditures, reflecting the reality that it is nonsensical to expect capital investments to continually rise, or to believe that if they do not constantly rise there must be something amiss.<sup>129</sup>

Indeed, this position that capex must always go up, lest the (Democratic party-led) Commission is to blame, is an argument against efficiency and productivity. Capital expenditures are not a good proxy for deployment. As technology improves and becomes more efficient, and as carriers themselves become more efficient, the average per-location cost of deployment can decline. For example, Verizon recently noted that its prior “edge to core” network modernization effort now means it can “continue to build out [the] ultra wideband network at the same pace as ‘23 with roughly \$1.5 billion less capital intensity.”<sup>130</sup> Or, consider Frontier, whose CFO noted that its “fiber build spend will actually be lower with the same number of passings because we will consume inventory and pre-work. So we’ll do 1.3 million passings, but we’ll spend less money and then our direct spend per passing will still be in the \$1,000 to \$1,100 range.”<sup>131</sup> This

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<sup>128</sup> See, e.g., Comments of Peter Osvaldik, T-Mobile US CFO, Q4 2023 Investor Call (Jan. 25, 2024) (“Our pull forward of CapEx into 2022 and 2023 has provided us with a broad multilayer 5G network on which we can now deploy additional spectrum for capacity across those existing radios without material incremental CapEx required.”).

<sup>129</sup> See, e.g., Comments of Anthony T. Skiadas, Verizon Communications CFO, Q4 2023 Investor Call (Jan. 23, 2024) (“CapEx for the quarter came in at \$4.6 billion compared to \$7.3 billion in the prior year. The full year CapEx totaled \$18.8 billion, which represents a more than \$4 billion reduction in capital spending from 2022 as we come down from our peak C-Band spending level . . . . We expect deleveraging of the balance sheet to accelerate in 2024 as capex comes down to BAU [business as usual] levels, and we continue to generate strong cash flow . . . . As discussed in prior quarters, capital spending for the full year is expected to be between \$17 billion and \$17.5 billion, down from \$18.8 billion in 2023.”).

<sup>130</sup> See Russo, Verizon CFO, Verizon Investor Day, *supra* note 21 (“Our ‘23 capital spend was \$18.8 billion. We’ve guided that this year, it will come down to \$17 billion to \$17.5 billion. And that’s largely based on . . . 3 programs that we kind of finished up in 2023. I talked about the One Fiber build-out that largely ended. Our 5G core is now fully built out and operational. And then the third, Kyle and Hans started this many years ago, but we have what we call our intelligent edge network. And it’s really a modernization of the network from the edge all the way back to the core, and that now is fully complete as well. So that allowed me to continue to build out my ultra wideband network at the same pace as ‘23 with roughly \$1.5 billion less capital intensity. So we’re not slowing down at all in our ultra wideband build-out of C-band and millimeter wave, but we are now back to BAU capital in ‘24 at that \$17 billion to \$17.5 billion.” (emphasis added)).

<sup>131</sup> Comments of Scott Beasley, Frontier Communications CFO, Q4 2023 Investor Call (Feb. 22, 2024) (noting that Frontier passed 1.3 million new FTTH locations in 2023 and aims to repeat that in 2024); see also Investor Presentation, “Frontier Fourth Quarter Results,” *Frontier Communications*, Slide 9 (Feb. 22, 2024).

per-passing cost decline should be applauded, because in a competitive market, lower costs should *in theory* lead to lower prices (or at least smaller price increases).

### **Recent ISP Financial Results and Commentary Continue to Reflect the Virtuous Cycle of Investment: Demand for Third-Party Internet Content Drives Demand for Advanced Telecommunications Services, to the Benefit of ISPs and Their Customers**

We conclude this *ex parte* with additional details provided by each publicly-traded ISP explaining its 2023 capital investments and plans for 2024 and beyond. It is important to have these statements in the record because we fully expect politically motivated actors to blame this Commission for any decline in telecom industry capital expenditures. Our exhaustive review demonstrates that the Commission’s pending move to restore its Title II authority and Net Neutrality is a total non-factor in the minds of the ISPs and the investment analysts that cover them. This should come as no surprise to anyone who closely follows this industry.

#### *AT&T and Verizon*

AT&T’s capital investments (including vendor financing) declined in 2023, and will decline again in 2024. But this does not mean that AT&T is reducing its deployment targets or slowing down its pace of deployment. AT&T ramped up its FTTH deployments in 2021, setting a goal of 30 million total passings by 2025. It’s on pace to hit that goal, and is already contemplating extending its goal to between 40 and 45 million total passings. In addition, it entered into a joint venture with a private equity firm to deploy 1.5 million additional passings outside of its ILEC footprint.

AT&T’s 2023 capital expenditures declined from 2022 for several reasons. First, Warner Media was on its books until April 2022. Second, AT&T’s use of vendor financing for capital equipment deployment created additional “lumpiness” for AT&T’s capital spend, where part of the total for one year is actually payment for capital deployed in prior years.<sup>132</sup> Third, AT&T completed a significant amount of “upfront” 5G deployment work in 2022. This last point is also why AT&T’s guidance for total capital expenditures including vendor payments will be lower in 2024, but its actual capital expenditures will be higher in 2024.<sup>133</sup>

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<sup>132</sup> See Comments of Pascal Desroches, AT&T CFO, Q4 2022 Investor Call (Jan. 25, 2023) (“Capex, the thing to keep in mind is we plan to be at peak levels in ‘22 and ‘23 because of the significant contributions that we are getting from DIRECTV. In ‘22 and ‘23 CapEx—is fairly meaningful amounts for spectrum deployment and transformation that will begin to moderate as we exit this year. We haven’t updated the guide we provided at Investor Day. But clearly, we expect to trend down towards more normalized capital intensity as we exit this year.”) (emphasis added).

<sup>133</sup> See Desroches, AT&T CFO, Q4 2023 Investor Call, *supra* note 24 (“It’s also important to note that the mix shift of our capital investment continues to move in a favorable direction as vendor financing obligations decline and project capital spend increases. Accordingly, we plan to continue to pay down short-term vendor and direct supplier financings this year as we shape an even more sustainable and ratable quarterly free cash flow cadence. Remember, our capital investments consist of payments from prior year capital spend plus current year spend. This year,

Verizon's peak year for inflation-adjusted capital expenditures was 2022. Capex declined in 2023 because the company frontloaded a portion of its 5G deployment into 2022. Verizon is ahead on all of its build targets, and just updated its guidance indicating it will exceed its 2024 5G population coverage target at least six months ahead of schedule.<sup>134</sup> Verizon's capex may decline again in 2024, but its build targets are accelerating, due to both frontloading capital spend and increased efficiencies.<sup>135</sup>

### *Comcast and Charter*

Comcast's capital expenditures in its new "Connectivity and Platforms" reporting segment declined sequentially on a year-to-year basis between 2021 and 2023 (inflation-adjusted, see Figure 28), though its capital intensity for this segment increased slightly during that time (see Figure 29). However, Comcast's broadband network investments increased in 2021, 2022, and 2023 after declining in 2018, 2019, and 2020 (inflation-adjusted, see Figure 30). Comcast launched its first DOCSIS 4.0 markets in December of 2023 and was the world's first cable ISP to do so.<sup>136</sup>

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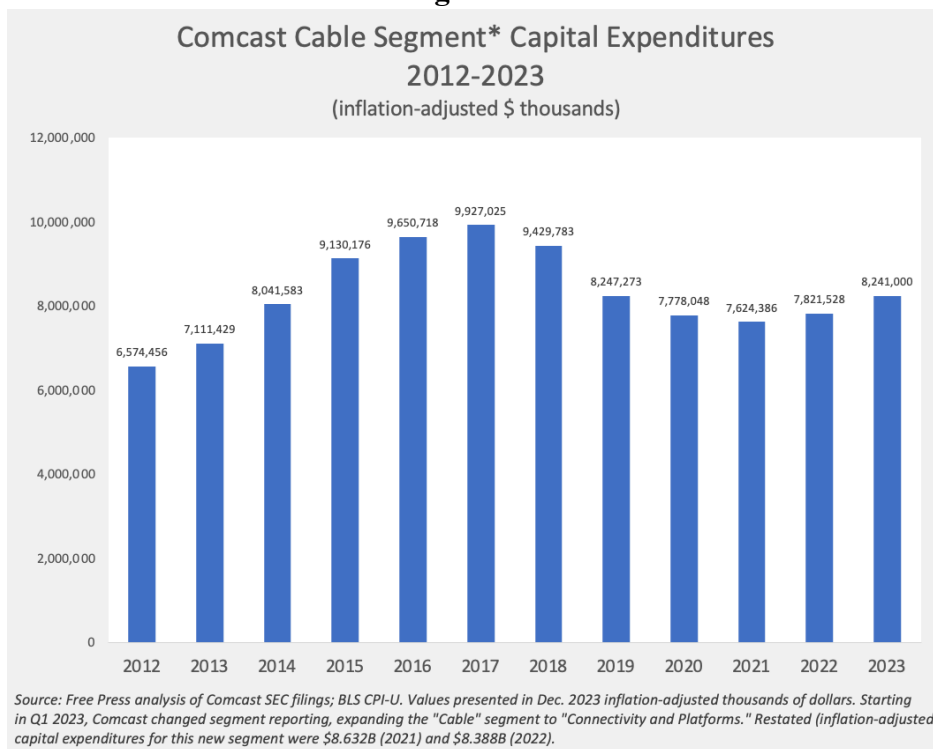
there would be less payments of prior year obligations than we saw in 2023 due to significant reductions in vendor financing. However, in the year, we do expect higher spend on capital projects.") (emphasis added).

<sup>134</sup> See Russo, Verizon CFO, Verizon Investor Day, *supra* note 21 ("I want to be clear on the investment decisions I'm making to put into the network are driven by two main things. That's number one, to improve the experience for our customers, and number two is to drive increases in service revenue. And I'll talk a little bit more about why I'm being specific on those 2 things here in a second. The third is that although our capital intensity that we announced for 2024 is coming down, you should know I am not slowing down in our Ultra Wideband build with C-Band and millimeter wave. And then the fourth thing I'd like you to take away is that you'll hear I'm ahead on all of our build targets. . . . We are continuing our aggressive build of Ultra Wideband, both with C-Band and millimeter wave. And although I'm not building to cover POPs, I expect that in the next few months, we will blow past the 250 million POP target that we set for the end of this year.") (emphases added).

<sup>135</sup> See *id.* ("Tony and I talked about bringing down CapEx to \$17 billion to \$17.5 billion in 2024. And I mentioned that we're not slowing down with that lower capital envelope. The way we achieve that is in 2023, three big capital programs are really now wrapping up. Our core One Fiber build is now largely done with over 50 percent of our sites now on our own fiber. The second is our 5G standalone core is now fully operational in an FOA. And the third is, we mentioned iEN, and that's a journey we've been on for several years. We now have the iEN network fully operational, connecting our access network types to the core of our network. And this enables me to keep the same pace we saw in 2023 with our Ultra Wideband build in that lower capital envelope.") (emphasis added).

<sup>136</sup> Comcast Press Release, *supra* note 67 ("Comcast has introduced a new portfolio of symmetrical products for residential customers. Comcast has begun rolling out DOCSIS 4.0 to select neighborhoods in Colorado Springs, CO, and select areas of Atlanta, GA, and

**Figure 28:**



Comcast exceeded its 2023 new passings goal, and believes it will exceed that level in 2024.<sup>137</sup> Comcast did not see customer growth in 2023, due to increased fiber and fixed wireless competition. But it believes its “aggressive” network investments will help it return to consistent customer growth in the future.<sup>138</sup>

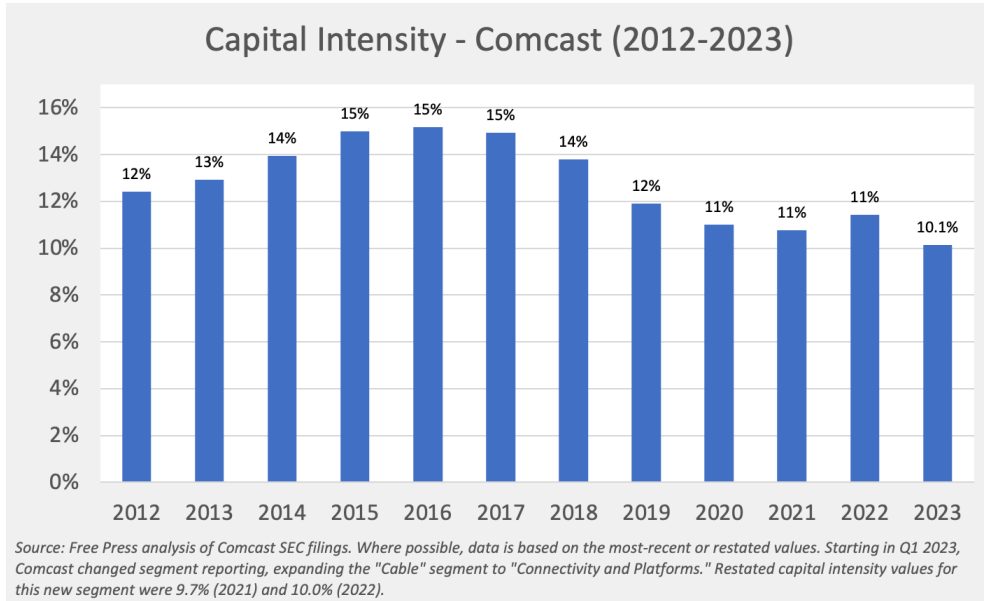
Philadelphia, PA, and will launch new markets throughout the country over the next few years. Select areas of Atlanta, GA and Philadelphia, PA are expected to begin rolling out before the end of this year.”).

<sup>137</sup> See Armstrong, Comcast CFO, Q4 2023 Investor Call, *supra* note 67 (“Speaking of network expansion, we exceeded our goal of passing 1 million new homes and businesses in 2023, landing at nearly 1.1 million. And we plan to replicate this in 2024 with this level or potentially even greater footprint expansion. . . . I feel very good about the trajectory into 2024. I think on the footprint side, we’ve been very clear that to the extent, first and foremost, as we talk about capital intensity in Dave’s world, right around 10 percent. It’s been there for the last couple of years. The expectation is that it will be there again in 2024, but we’ve also been very clear that that’s not necessarily a constraint on the business. To the extent we can move faster, we’ll do that, and we’d like to. I think as you look at the past couple of years on homes passed, we did 850,000 homes passed in 2022. We were able to accelerate that in 2023 up to 1.1 million, and we gave guidance this morning for 1.1 million or slightly higher for next year. So we think we can further accelerate that.”) (emphases added).

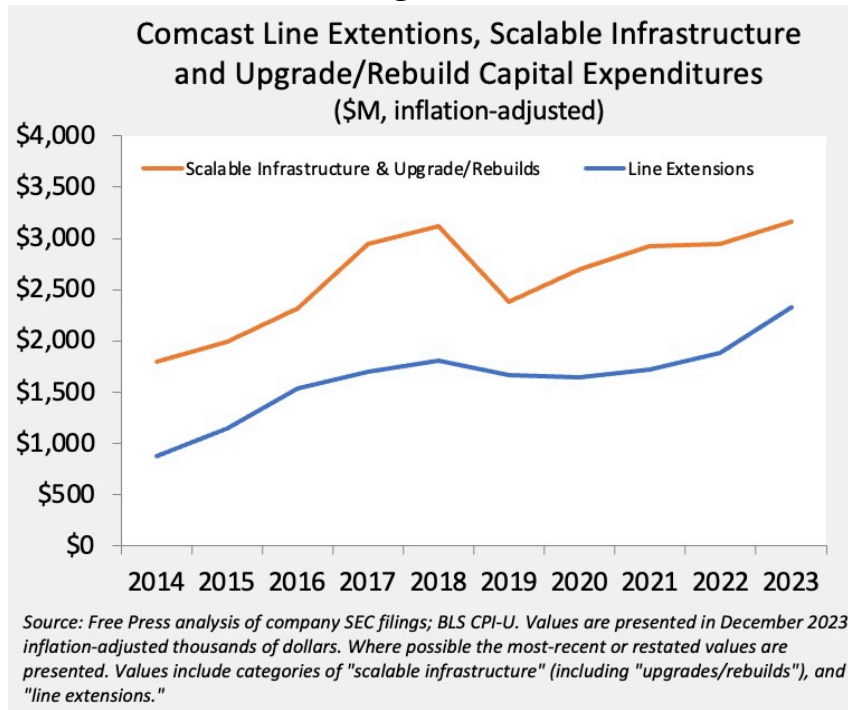
<sup>138</sup> See *id.* (“We are focused on what we can control. That means segmenting our customer base by offering our customers the right price, including value options at different speed tiers and driving ARPU ahead in an environment where broadband subscriber growth remains challenged.



**Figure 29:**



**Figure 30:**



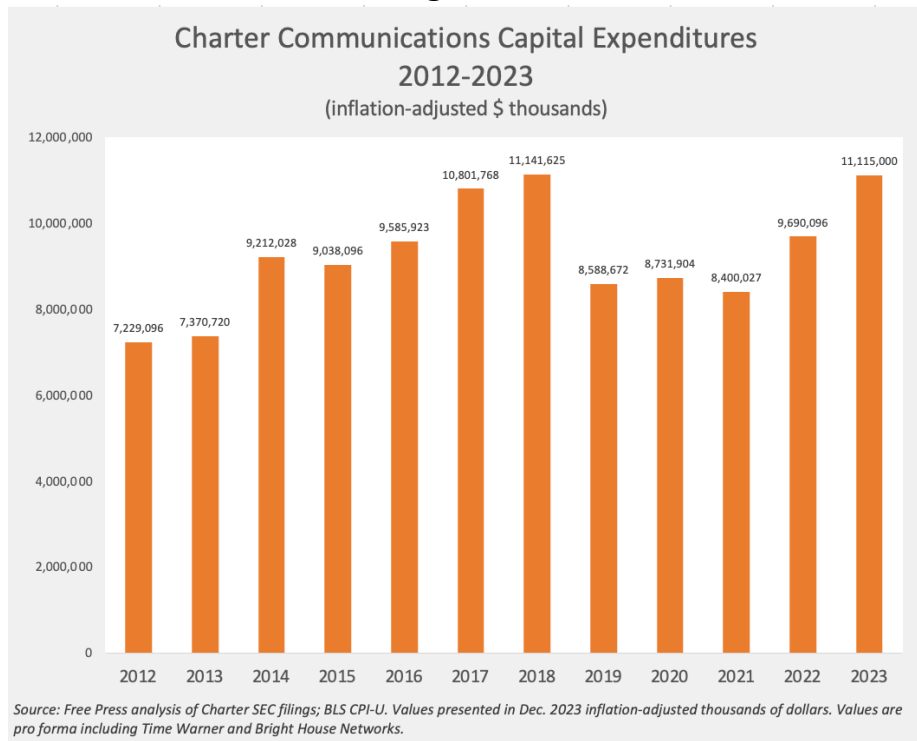
Charter’s capital expenditures increased significantly from 2022 to 2023, after a three-year relative lull from 2018 to 2021 (see Figure 31). The recent increase is attributable to its ongoing DOCSIS 4.0 prep work and its rural FTTH initiative. Charter’s fiber deployment

And we’re doing this in the context of aggressive network upgrades and expansion, putting us in a great position to eventually return to subscriber growth.” (emphasis added).

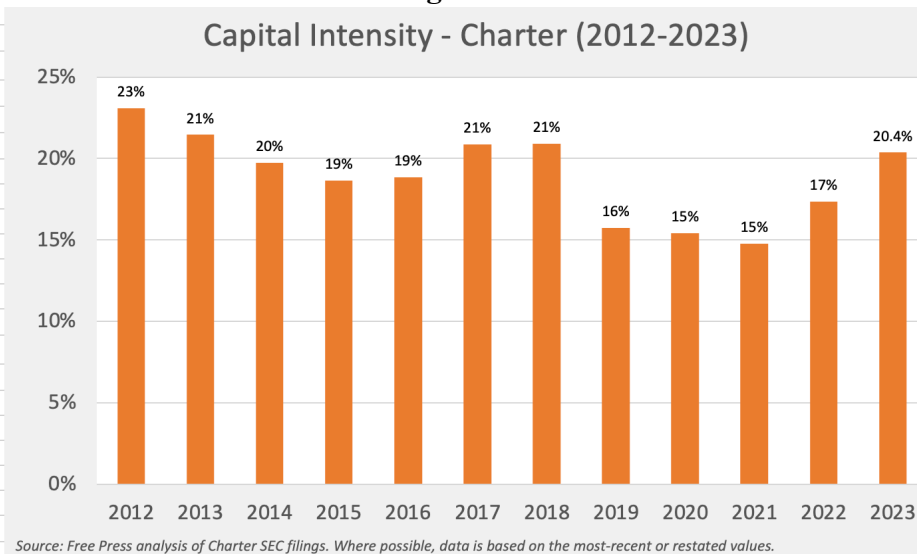
pushes its capital intensity above 20 percent, a level not seen since Charter was integrating the Time Warner Cable and Bright House Network systems it purchased in 2016 (see Figure 32).

Charter’s detailed network investment data shown in Figure 33 also reflects the company’s various upgrade and deployment efforts. Its investment in line extensions and upgrade/rebuilds doubled between 2021 and 2023, reflecting its FTTH deployments and DOCSIS 4 upgrade preparations.

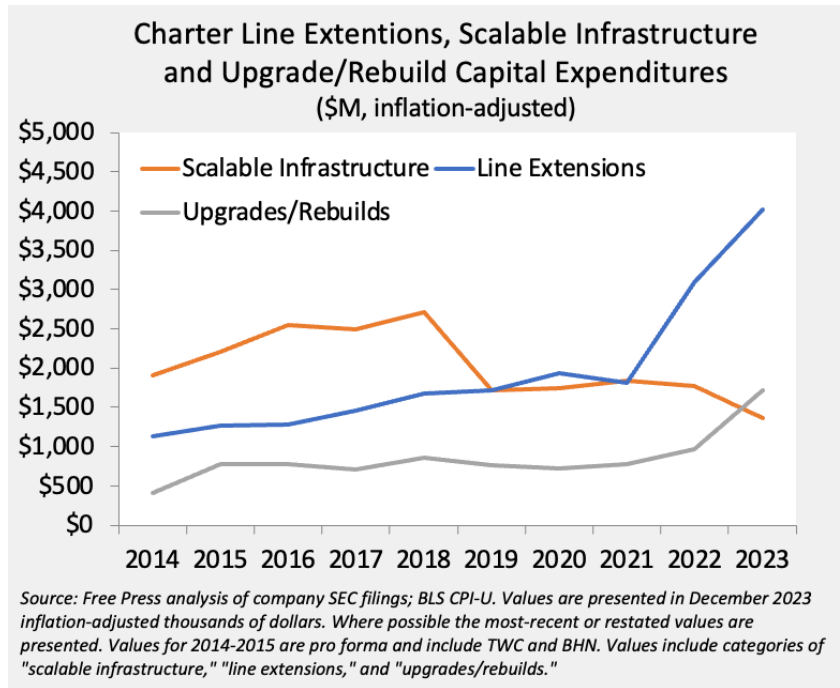
**Figure 31:**



**Figure 32:**



**Figure 33:**

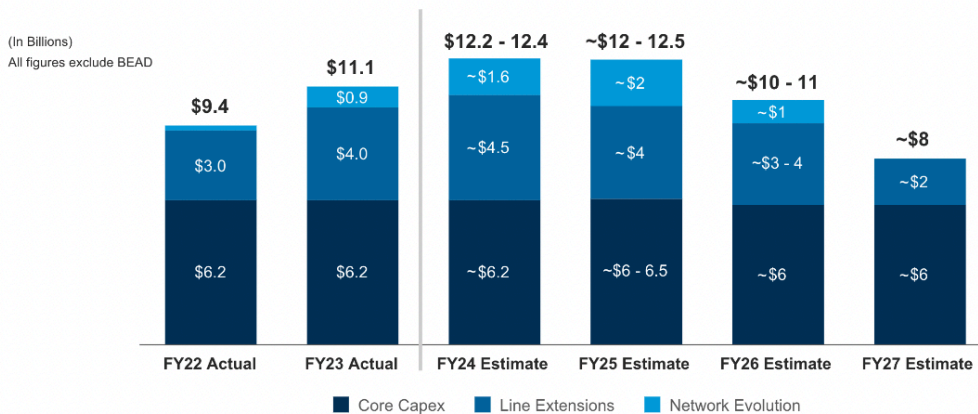


**Figure 34:**

## Total Capital Expenditures Outlook

### Multi-Year Capex Outlook (ex-BEAD)

- Charter currently expects full year 2024 capital expenditures to total between \$12.2B - \$12.4B, including line extensions spend of ~\$4.5B and network evolution spend of ~\$1.6B
- Cumulative line extensions spend from FY24 - FY27 includes,
  - An estimated ~\$4.5B<sup>1)</sup> of subsidized rural construction initiative spend (ex-BEAD), and
  - ~\$9.5B of other line extensions spend at approximately \$2,000 - \$2,500 cost per passing<sup>2)</sup>
- Charter continues to expect to spend ~\$100 per passing to evolve its network to offer multi-gigabit speeds
- Core capex should remain relatively stable over time on an absolute basis, while declining as a percentage of revenue



1) Includes capital expenditures associated with ~0.3M passings identified in areas adjacent to the census blocks awarded in the RDOF auction that Charter will add to its network as it completes the RDOF build.  
2) Includes existing footprint expansion across residential and commercial greenfield and market fill-in opportunities and serviceability additions, with a higher mix of SMB doors and Enterprise sites.

Charter’s original DOCSIS 4.0 deployment plan did slip from 2025 into 2026. But this is only due to a delay in the certification of certain equipment needed for project completion.<sup>139</sup> In a somewhat rare move, Charter offered capex guidance for the next four years. This guidance, reproduced above in Figure 34, indicates that Charter’s (nominal) capital investments will peak in 2025 as it completes its DOCSIS 4.0 upgrades in 2026 and reaches the end of its FTTH deployment plan (excluding any spending that might come due to BEAD awards). In giving this extended guidance, Charter made it clear that it could pull capital spending forward, but wanted to make sure investors understood that its capital spending will only be temporarily elevated as it goes through a normal technology upgrade cycle and an unprecedented rural build-out.<sup>140</sup> We estimate that Charter’s capital intensity could drop to near 10 percent in 2027. Charter certainly did not indicate, even vaguely, that the Commission’s Title II and Network Neutrality policies were a factor in its future planning. Indeed, after explaining this guidance in detail, Charter’s CEO stated, “there’s certainly nothing that we see on the horizon that I would say can meaningfully put us off track from what we laid out.”<sup>141</sup>

### *Altice, Cable One, & Shentel*

The remaining publicly-traded MSOs are all full-speed-ahead for the gigabit era, though each has a different approach and different pace of deployment.

In our initial comments, we explained that “shortly after closing on its acquisitions of Cablevision and Suddenlink during mid-2016, Altice embarked on a 5-year plan to replace large portions of its coaxial cable system with FTTH.”<sup>142</sup> This was an incredibly ambitious plan, especially given DOCSIS 3.1’s capabilities and the pending arrival of DOCSIS 4. But Altice felt that it had to overbuild itself with fiber, particularly in the New York City area, where it faced

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<sup>139</sup> See Comments of Christopher Winfrey, Charter Communications CEO, Q4 2023 Investor Call (Feb. 2, 2024) (“In terms of the prioritization of line extensions over the DAA or DOCSIS 4.0 upgrade, it wasn’t so much about prioritization. It was really about the certification of the DAA equipment taking a little bit longer, which is pushing out the timeline for the rollout. And so the trade-off we had is, could you do [ ] the 1.2 gigahertz high split upgrade under what we call an integrated CMTS environment and do more of that footprint to keep the original pace? Or should we slow it down just a tad to make sure that we allowed for a catch-up of the DAA certification process so that you can move to high split with distributed access architecture as well as the 1.8 gigahertz in the rollout of DOCSIS 4.0, which was the latter to make sure that we were having as much of the footprint with the full capabilities of DOCSIS 4 over time.”).

<sup>140</sup> See *id.* (“If—the caveat is if we get into—a couple of years from now, we see opportunities to pull capital forward, we’ll, of course, do that. But this is our best view of where we’re going to spend capital. And we thought it was worthwhile to show that to make sure people understand that it doesn’t—that higher level of capital expenditure doesn’t go on into perpetuity.”).

<sup>141</sup> Fischer, Charter Communications CFO, Deutsche Bank 32nd Annual Media, Internet & Telecom Conference, *supra* note 98.

<sup>142</sup> Free Press Comments at 107–108.

competition from Verizon FiOS.<sup>143</sup> However, this effort took longer than Altice expected, and the pandemic further slowed its progress. The company lost customers for the first time in 2021, leading to a drop in its stock price. After seeing its cash flow margin drop rapidly in 2021 and early 2022, Altice changed CEOs and now prioritizes earnings growth by focusing on attracting customers to its FTTH network.<sup>144</sup>

Altice also indicated its 2024 total capex would be slightly below its 2023 levels, which were down from its 2022 levels. It's unclear how this will translate to network capital investments, which were approximately 55 percent of the company's total capex in 2023 (see Figure 35). Nevertheless, Altice expects to increase the number of new FTTH passings in 2024 from its 2023 numbers.<sup>145</sup> Depending on Altice's 2024 revenues, this guidance would translate into a capital intensity level of 17 to 18 percent, which is on par with its 2023 levels and still higher than any year since it purchased Cablevision, except for 2022 (see Figure 36).

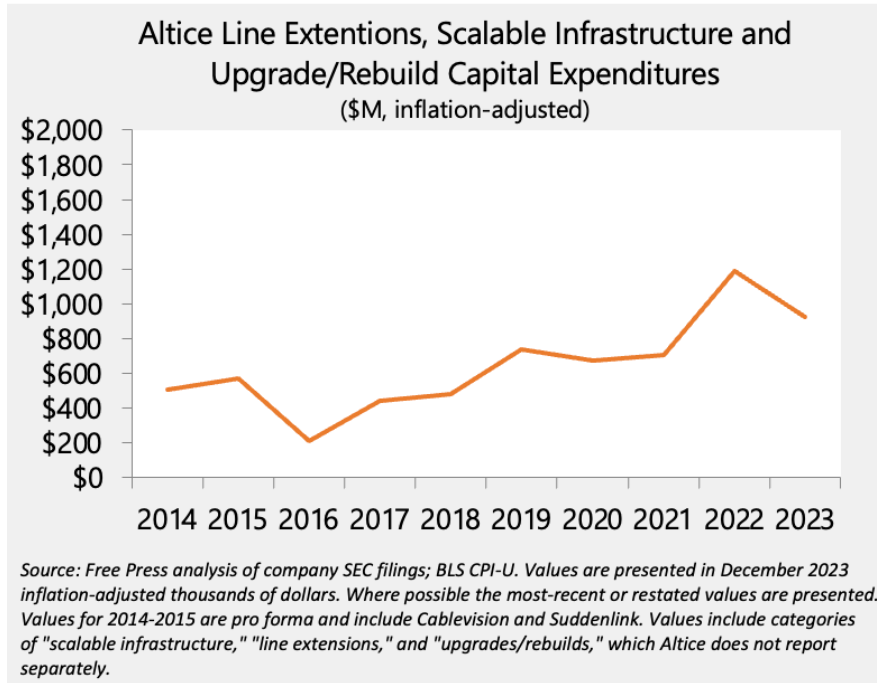
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<sup>143</sup> See Comments of Dennis Mathew, Altice USA CEO, 2024 Morgan Stanley Technology, Media & Telecom Conference (Mar. 4, 2024) (“When you’re competing against a mature fiber provider like Verizon, I do find that it’s helpful to have the best product, when you’re competing and you’re delivering on all cylinders, on quality and value and all—when you’re firing on all cylinders, then you’ve got the product piece, and it matters a lot. And there is a much more proliferation of understanding symmetrical speeds and multi-gig speeds. And so it was exciting to me to hear that investment that was being made here in the Northeast as we are 70 percent overbuilt by Verizon who has fiber. We have much better fiber with our XGS-PON and [are] able to deliver 8-gig symmetrical speeds. So we have modern technology fiber.”).

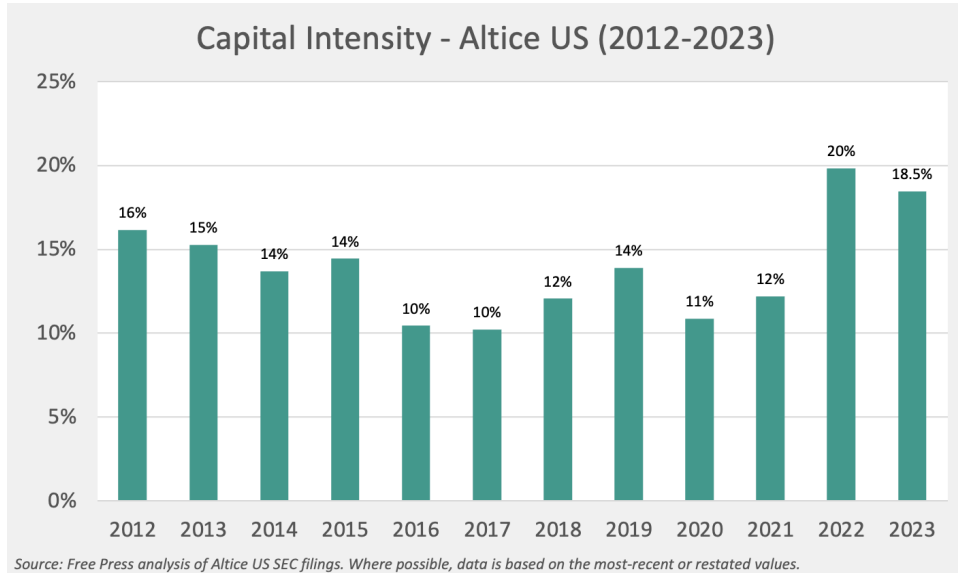
<sup>144</sup> See *id.* (“When you look at the customers on fiber, it’s undeniable, the satisfaction, the churn benefit, the incremental ARPU. And so this is the year to monetize that investment. This is the year to really start to drive customers onto fiber in the East and then use fiber strategically in the footprint. But to your point, when I looked at being from cable and DOCSIS, I said, hey, we need to invest in DOCSIS, too. And so we invested and upgraded 300,000 homes in the West to 3.1, and we’re going to keep going. We’ll do another 200,000.”).

<sup>145</sup> See Comments of Marc Sirota, Altice USA CFO, Q4 2023 Investor Call (Feb. 14, 2024) (“Full year capital intensity was 18.5 percent, which we believe is the right level to efficiently run the business today while also continuing to invest in upgrading the network to support future growth. Our outlook for the full year 2024 capital is to moderate versus 2023 in the range of \$1.6 billion to \$1.7 billion. . . . To that end, we will expand fiber passings to about 3 million homes by year-end and focus more on driving migrations of customers to this incredible network. Additionally, we will add a total of 175,000 new passings compared to 165 [thousand] new passings in 2023. And we will continue to invest in network quality improvements . . .”).

**Figure 35:**



**Figure 36:**

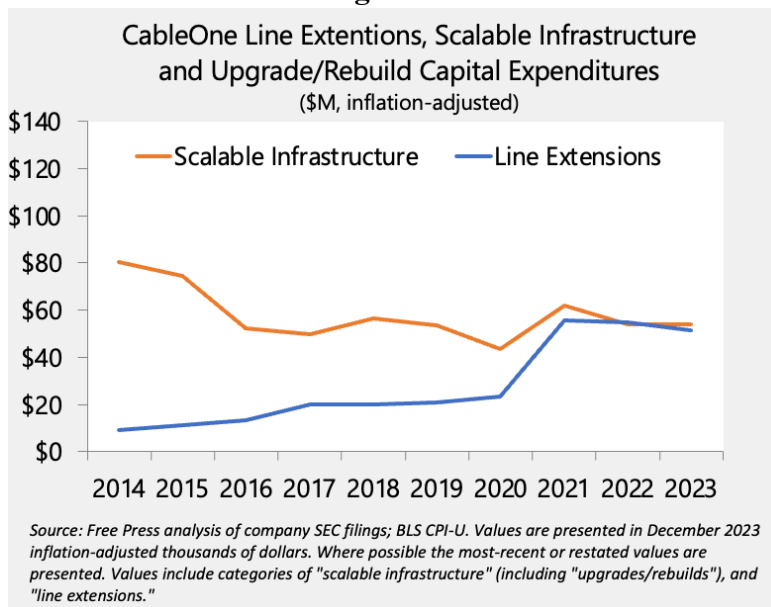


Cable One and Shenandoah Telecommunications Company (“Shentel”) are both ISPs that primarily serve secondary suburban, exurban, and rural markets. But their recent capital investment trends are very different, illustrating the fact that individual companies can be at different phases of their upgrade cycles at different times.

Cable One’s network investment peaked in 2021 (see Figure 37). But the 2022 and 2023 declines from that peak are simply due to the company frontloading its DOCSIS 4 prep work. As

its CFO recently explained, this decline is “really . . . a result of how proactive we’ve been in investing in these markets. [DOCSIS] 4.0 architecture is basically complete until the actives are generally available . . . .”<sup>146</sup>

**Figure 37:**



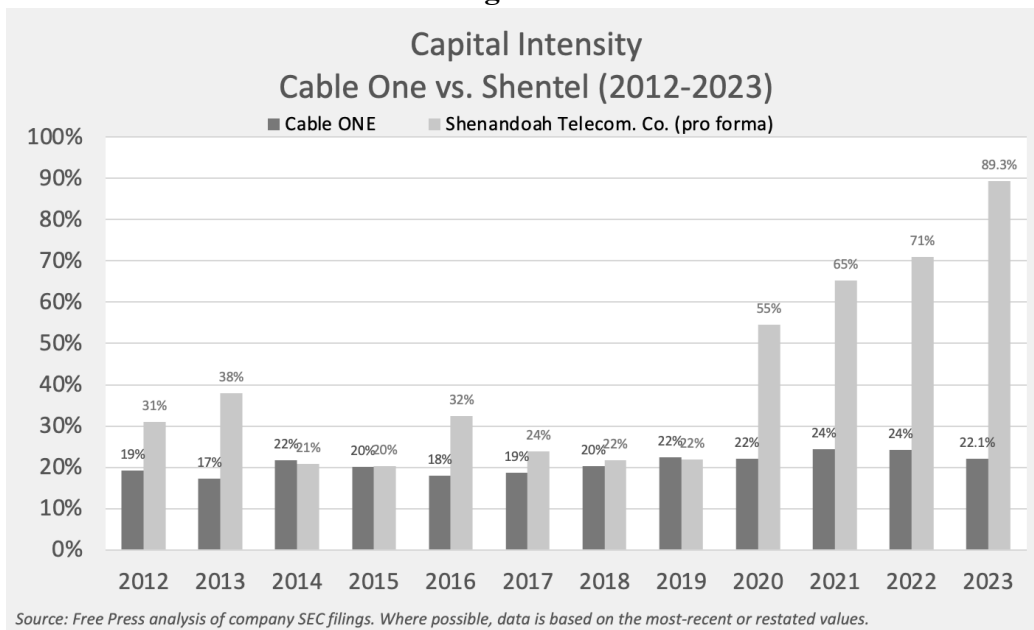
Shentel, on the other hand, is building FTTH, and plans to accelerate its pace of deployment in 2024.<sup>147</sup> Shentel’s capital expenditures increased in 2021, 2022, and 2023, and it expects this to continue in 2024 and beyond, until its FTTH expansion and DOCSIS 4 upgrades

<sup>146</sup> Koetje, Cable One CFO, Q4 2024 Investor Call, *supra* note 123 (“It’s really as a result of how proactive we’ve been in investing in these markets. 4.0 architecture is basically complete until the actives are generally available, but we’ve been spending considerably in that. We did bring forward some discounted equipment. We did accelerate some projects related to the government programs that we’re going to be funding those for the next fifteen years. So that was in, for the most part, some of the incremental investment. And throughout 2023, even 2022, when you think about the proactive network investments, but then some of the, I’ll call it, pull forward into Q4, but the go forward is because of how proactive we’ve been in investing in the network.”).

<sup>147</sup> See Comments of Christopher E. French, Shenandoah Telecommunications Company CEO, Q4 2023 Investor Call (Feb. 21, 2024) (“We added over 86,000 new Glo Fiber passings in 2023, almost a 20 percent increase from 2022 and over a threefold increase from 2020 levels. Our sales team has more than kept pace with our construction team. We added over 17,000 Glo Fiber net customers, representing a more than 32 percent increase over 2022 and a 62 percent annual growth rate since 2020. We expect to accelerate the pace of Glo Fiber construction and sales again in the next year, continuing the annual improvements we’ve made in each of the past 3 years.”) (emphasis added).

are complete.<sup>148</sup> As Figure 38 below indicates, Shentel’s aggressive FTTH deployments have increased its capital intensity to nearly 90 percent, a sharp contrast to Cable One’s recently elevated capital intensity levels that nonetheless remained just above 20 percent.

**Figure 38:**



### *Lumen and Frontier*

We covered Lumen’s 2023 results and 2024 guidance above in our discussion of the potential impact of taxes and interest rates. To reiterate, Lumen plans to slightly reduce its capital spending in 2024, but still expects to deploy FTTH to the same number of locations as it did in 2023.<sup>149</sup> Lumen’s CFO told analysts that its reduction in capex is “driven by our continued focus on efficiency” and stressed that this decline should not be “view[ed] as a signal of us pulling back anywhere. We are investing aggressively and we’ll continue to invest aggressively in both Enterprise and Mass Markets as well as just the broader simplification of Lumen as we go forward.”<sup>150</sup> When Lumen’s CFO was asked if it was getting “more of a capex bang for your buck this year than last year,” he answered, “that’s right.”<sup>151</sup> As discussed above, Lumen suggested that increased interest rates had factored into its plans to slightly pull back its capex in

<sup>148</sup> See Investor Presentation, “Shentel Q4 2023 Earnings Conference Call,” *Shenandoah Telecommunications Inc.*, Slide 21 (Feb. 21, 2024).

<sup>149</sup> Johnson, Lumen Technologies CEO, Q4 2023 Investor Call, *supra* note 94.

<sup>150</sup> Stansbury, Lumen CFO, Q4 2023 Investor Call, *supra* note 97.

<sup>151</sup> *Id.*



2024, though the company sold off a large portion of its residential business and is possibly slowing down to shore up its balance sheet in anticipation of another deal.<sup>152</sup>

As we noted above, Frontier is also planning to pass as many locations with fiber in 2024 as it did in 2023, but expects to do so while spending slightly less capex, like Lumen.<sup>153</sup> The decrease in expenditure is due in part to the company finishing “build” capex and spending more on “connection” capex (the capital costs incurred when a customer orders fiber service at a newly-passed location). Although Frontier is slowing its spending, it is not altering its pace or its goal of reaching 10 million FTTH locations—up from the 6.5 million passed at the end of 2023.<sup>154</sup> The company’s leadership team is already working with its board to plan another phase of fiber construction beyond the 10-million-location goal, though it may be waiting to see if the company secures BEAD funding.<sup>155</sup>

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<sup>152</sup> When asked if further divestitures would be “something that you would actively evaluate,” Lumen’s CFO said, “What I would say specifically about the Mass Markets business is really a few things. One, that’s an enormously valuable asset. And we know that, and that’s why we’re continuing to invest at the pace that we’re at right now and getting more fiber in the ground and pushing really hard to drive subscriber growth. That said, we’ve been very public about saying that’s a space where consolidation is necessary, and we will not be the consolidator. So—and I think you’ve seen in the last few days, some noise in the industry as people are, I think, taking more active positions around what happens next with that sector. So we’re going to keep our heads down, continue to focus on execution and building out the value of that asset, and we’ll evaluate as we go.” *Id.*

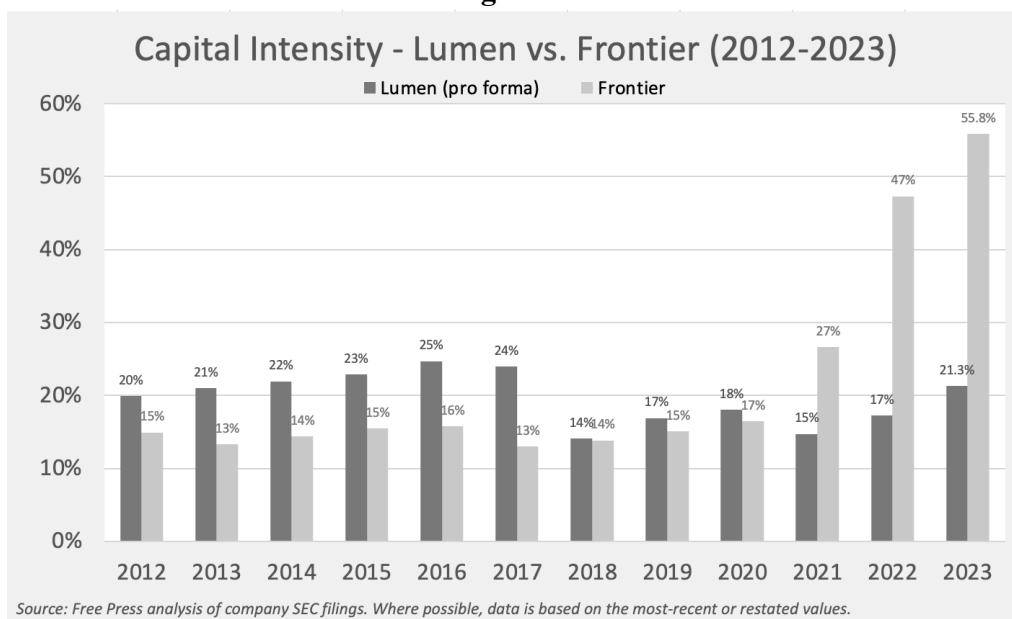
<sup>153</sup> See Beasley, Frontier Communications CFO, 45th Annual Raymond James Institutional Investors Conference, *supra* note 104 (“Capex has peaked. In 2023, we said that was peak capex year . . . . [In] 2024, total capex will be lower overall in a range of \$3.0 billion to \$3.2 billion. But then importantly, the nature of our CapEx will shift. Fiber-build capex is actually coming down even more. And then our success-based customer connection capex is increasing as a portion of our total capex. . . . But then also, we’re in a different phase of the build now. We’re in a much more of a steady state. For the last 3 years, we’ve been in a ramp-up phase. Ramp-up phase can be lumpy because you’re building prework in central offices in middle-mile before you build out to the full location in an area. You’re building up inventory. You rightly know that 2021 through [ ] early ‘23 was a very difficult inventory position where it was hard to get your hands on inventory. That shifted in 2023 and we’re much more comfortable with our inventory position now, and we actually expect to work down our inventory in 2024 and use what we built up in the last 24 months. I’d say, a similar trend is happening in labor and that we’re well positioned in labor. We’ve got good long-term relationships with both large vendors and then smaller regional vendors. We have contract visibility for the next several years in terms of labor rates. So that gives us confidence again that 2023 was a peak CapEx year. We’ll spend less in our fiber build in 2024 while passing the same 1.3 million locations.”) (emphases added).

<sup>154</sup> See *id.* (“We’ve said that our initial goal is 10 million passings. We’re at 6.5 million today, we’re building roughly 3,500 passing [per] day. So every day, we’re creeping closer to our 10 million goal.”).

<sup>155</sup> See *id.* (“But we have said our aspiration is to go beyond [ ] 10 million. And to go beyond

Figure 39 below compares Lumen and Frontier’s capital intensity values. The data indicate that Frontier is investing in FTTH much more aggressively than Lumen is. During 2023, Frontier deployed FTTH to about 2.6 times the number of new locations as Lumen did, yet Lumen’s revenues were 2.5 times larger than Frontier’s. This apparent mismatch reflects the fact that Lumen is now primarily an enterprise-focused company, while Frontier is primarily focused on residential customers.

**Figure 39**



### *T-Mobile and US Cellular*

Above we noted that T-Mobile’s 2023 capex decline and its expected further decline in 2024 are entirely due to the carrier completing much of its 5G deployment work.<sup>156</sup> We also noted that the completion of its 5G deployment frees up more cash for T-Mobile to do other things that return benefits to shareholders, such as increasing its dividend and repurchasing more of its stock. But T-Mobile is also investing in FTTH and partnerships with infrastructure firms that build open access fiber.<sup>157</sup> And it was recently reported to be on the verge of striking a deal

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10 million, we might look to partner with people who would provide capital, whether that’s for additional edge-outs or builds outside of our territory, whether that’s BEAD funding, whether that’s incremental copper conversions beyond the 10 million. So that is part of the strategic review that the Board is undertaking now to see if there’s a way to create shareholder value by partnering with somebody to go beyond 10 million.”).

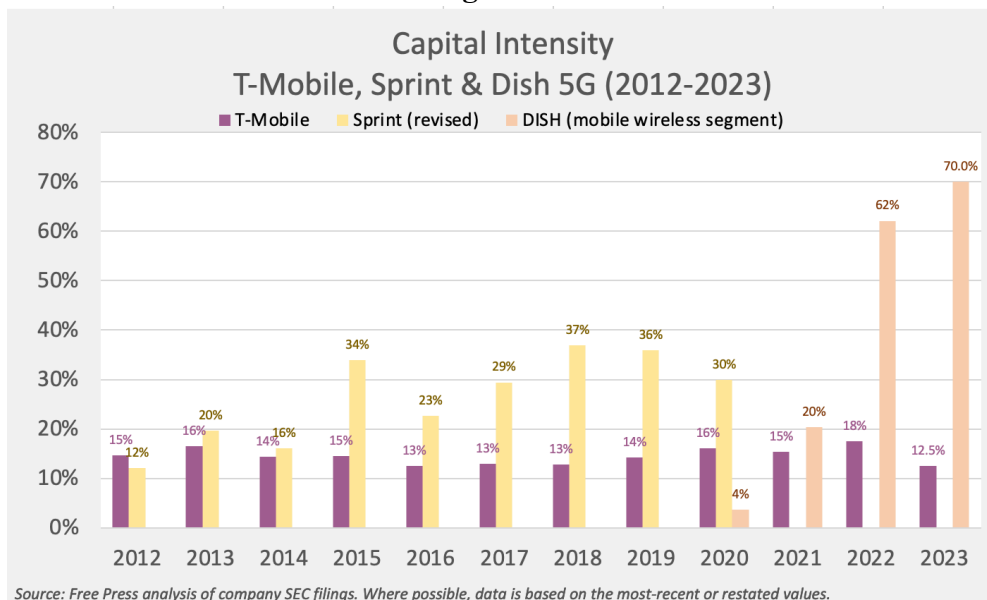
<sup>156</sup> Osvaldik, T-Mobile US CFO, Q4 2023 Investor Call, *supra* note 128.

<sup>157</sup> See Mike Dano, “T-Mobile’s fiber biz expands to three more markets,” *Light Reading* (Mar. 26, 2024) (“T-Mobile Fiber is now offering services in three new markets: two in Colorado

worth more than \$1 billion with Lumos Networks to build FTTH networks in Virginia.<sup>158</sup> These are clearly not the moves you’d expect a wireless company to make if it was at all concerned about the specter of Title II’s supposed impact on its future profitability.

Even during its peak 5G-deployment-spend year, T-Mobile’s capital intensity only hit a high of 18 percent. While that was the largest value for the company since 2004, it still pales in comparison to the capital intensity of DISH’s mobile wireless segment, which stood at 70 percent in 2023 (see Figure 40).

**Figure 40:**



Like AT&T, Verizon, and T-Mobile, regional wireless carrier US Cellular has also seen several years of declining capex. When asked why US Cellular and other wireless carriers are reducing capex, the company’s CEO stated “from a slowdown perspective, this is industry-wide, not surprising. As we’ve heard, . . . all the other wireless carriers [are pulling] back in capex, they’re primarily complete with their mid-band rollout. And so everybody is pulling back a bit

and one in Florida. The company is expanding its fiber reach through ‘open access’ fiber providers like Intrepid Networks and Tillman FiberCo.”).

<sup>158</sup> See “Telekom’s T-Mobile Wants Its Own Fiber-Optic Network, Handelsblatt Reports,” *Dow Jones Newswires* (Mar. 15, 2024) (“Deutsche Telekom’s U.S. subsidiary T-Mobile is set for a strategic shift from its focus on mobile communications as it plans to build its own fiber-optic network, German newspaper Handelsblatt reports, citing people at Deutsche Telekom directly or indirectly involved in the decision. The German mobile-communications firm is planning a joint venture with partner Lumos Networks, in which T-Mobile intends to invest at least \$1 billion, according to the newspaper. Initially, the joint venture aims to build fiber-optic connections in Virginia, Handelsblatt says.”).

from a spend perspective.”<sup>159</sup> US Cellular is largely finished with its low-band 5G deployment, and is shifting to mid-band deployments even as its overall capex continues to decline.<sup>160</sup>

### *TDS and Consolidated Communications*

We conclude with smaller local exchange carriers TDS and Consolidated Communications—companies that each brought in about \$1 billion in revenue in 2023.

TDS’s capital spending has increased sequentially every year since 2016, but it plans to reduce capex in 2024. This is not because of concern about FCC regulation. In fact, part of the reason for TDS’s temporary slowdown is to work on plans to spend new subsidy dollars this Commission awarded to TDS as a part of the Enhanced-ACAM program.<sup>161</sup> TDS, which also owns cable systems, is very bullish on the future, and has already done a substantial amount of work over the past decade to build fiber.<sup>162</sup> This means, like other ISPs that have “pulled forward” capex, TDS can now reduce capex even while continuing to reach more homes with FTTH and advanced DOCSIS services.<sup>163</sup>

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<sup>159</sup> Comments of Laurent Therivel, US Cellular CEO, Q4 2023 Investor Call (Feb. 16, 2024).

<sup>160</sup> *See id.* (“About 80 percent of our traffic is carried by sites that are modernized for low-band 5G. During 2023, we shifted our focus from 5G modernization to mid-band deployment. And similar to our previous network deployments, this will be a multiyear build-out. By the end of 2024, we expect to cover 30 percent of our POPs with mid-band, and we’ll have almost half of our data traffic running on sites that are equipped with mid-band spectrum.”).

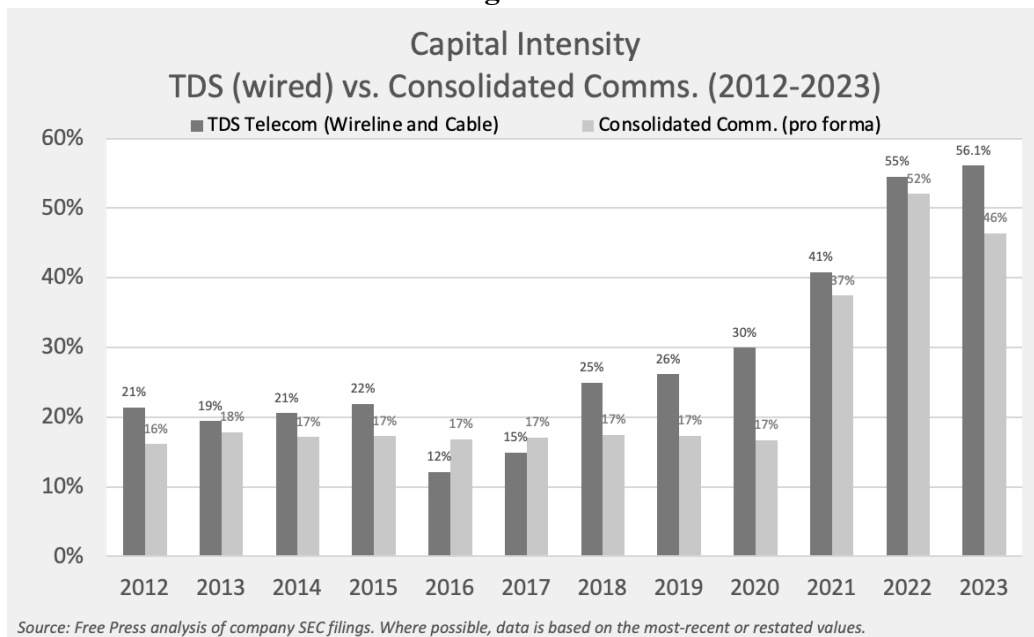
<sup>161</sup> *See* Comments of Michelle Brukwicki, TDS Telecommunications, Q4 2023 Investor Call (Feb. 16, 2024) (“Another reason capex is expected to be lower in 2024 is because we will be doing planning and engineering for our E-ACAM builds during 2024. We do not expect capital spend on these projects to ramp up until after this year. Along with that, we have pulled back on capital in our incumbent markets, knowing that E-ACAM investment will be coming soon.”) (emphasis added).

<sup>162</sup> *See id.* (“In 2024, we’re planning to deliver about 125,000 fiber service addresses. We pulled forward some CapEx spend in addresses into 2023, so we’ll be slowing the pace of our builds and our spending in 2024. . . . And we believe we can deliver a meaningful number of fiber service addresses with lower capital spending in 2024[,] . . . all of our expansion markets have been initially launched. That means our upfront capital spending is behind us, and we can leverage the foundational systems that we put in place over the last several years.”).

<sup>163</sup> *See id.* (“Let me describe the vision we have for TDS Telecom. We are transforming ourselves into a fiber broadband company. We’re doing this through investments in all of our market types, expansion, cable and ILEC markets. First is our fiber expansion program. Today, we have 370,000 service addresses in our expansion markets. They are 100 percent fiber, and we plan to continue growing our footprint in our expansion markets over the next several years. Next are our cable markets. We have approximately 500,000 cable service addresses, which are already enabled with 1-gig speeds using DOCSIS 3.1 and fiber. 16 percent of our cable addresses are fiber today. And going forward, we will add more fiber opportunistically in certain markets

It is notable that TDS’s capital intensity was above 50 percent each of the past two years (see Figure 41). Given these levels, and given TDS’s recent E-ACAM award and potential future BEAD funds, it makes sense that TDS would slightly moderate its capital spending from 2023 levels, especially considering that it is nearly 80 percent done with its original FTTH goal and has deployed gigabit-capable DOCSIS 3.1 to its entire cable footprint.

**Figure 41:**



Finally, we note that in April 2023, Consolidated Communications reached an agreement to be taken private by a private equity firm. That deal is still awaiting approval, so Consolidated no longer holds investor calls. It did note in its 2023 Annual Report that it “passed more than 2.6 million homes, of which approximately 47% were at least 1 Gig capable,” and that “as part of our multi-year fiber build plan, we plan to extend fiber coverage enabling multi-Gig data speeds

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and in new greenfield areas. And finally, in our incumbent wireline markets, which we also refer to this as our ILEC. We have just over 800,000 service addresses today. 43 percent of those addresses are fiber [ ]. We’ve been working to bring higher speeds to our ILEC for over a decade. . . I’ll review our longer-term goals that we’ve set at TDS Telecom. We have been making solid progress on these goals. First, across our entire footprint, we’re targeting approximately 1.2 million marketable fiber service addresses. We added 89,000 fiber addresses in the fourth quarter, which is our highest quarter to date. We ended the year with 799,000 total fiber service addresses. So we’ve accomplished 2/3 of our goal already. We are targeting 60 percent of our total service addresses to be served by fiber. We ended 2023 with fiber to 47 percent, this reflects progress in growing fiber through our expansion markets as well as fiber up our incumbent markets. And finally, we are expecting to offer speeds of 1 gig or higher to at least 80 percent of our footprint. We finished 2023 with 72 percent at gig speeds, and that’s a combination of our fiber and DOCSIS 3.1 technologies.” (emphases added).

to over 70% of our passings.”<sup>164</sup> Consolidated’s capital intensity values certainly reflect this recent deep commitment to investing in fiber. Between 2012 and 2020, the company consistently spent about 16 to 18 percent of its revenues on capex, increasing to 37 percent in 2021, 52 percent in 2022, and 47 percent in 2023. Clearly, this is a company that has not been beset with uncertainty about its fiber future upon election of a President who appointed an FCC Chair committed to restoring Title II and Net Neutrality.

## **Conclusion**

The record is clear: ISPs are strongly committed to deploying and upgrading their networks ahead of consumer demand, because they are confident that doing so is key to future financial prosperity in the face of increasing competition. Light-touch Title II authority and basic Open Internet rules did not harm—and will not harm—broadband deployment. ISPs of all types and sizes are continuing to invest because doing so is how these companies can best generate shareholder returns.

We are currently in the midst of an investment cycle where ISPs are deploying 5G, fiber, and advanced DOCSIS networks at a historic level. This is happening as the Commission prepares to restore Title II authority and its Open Internet rules. Yet the impact of FCC regulation is simply a non-factor in the minds of ISP executives and investment analysts. And that’s because Title II and Network Neutrality are essential to preserving and promoting the internet’s virtuous cycle of investment.

Respectfully Submitted,

S. Derek Turner, Sr. Advisor  
Yanni Chen, Policy Counsel  
Matthew F. Wood, VP of Policy

Free Press  
1025 Connecticut Avenue NW  
Suite 1110  
Washington, DC 20036  
202-265-1490

April 1, 2024

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<sup>164</sup> Consolidated Communications Inc., 2023 Annual Report (Form 10-K) (Mar. 5, 2024).