United States Court of Appeals
For the Eighth Circuit

No. 17-2296

Citizens Telecommunications Company of Minnesota, LLC

Petitioner

v.

Federal Communications Commission; United States of America

Respondents

Ad Hoc Telecommunications Users Committee; BT Americas, Inc.; Granite Telecommunications, LLC; INCOMPAS; Sprint Corporation; Windstream Services, LLC

Intervenors

No. 17-2342

Ad Hoc Telecommunications Users Committee; BT Americas, Inc.; Granite Telecommunications, LLC; INCOMPAS; Sprint Corporation; Windstream Services, LLC

*Petitioner*s

v.

Federal Communications Commission; United States of America

Respondents

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NCTA-The Internet & Television Association; Comcast Corporation; AT&T Services, Inc.; USTelecom; CenturyLink, Inc.

Intervenors

Consumer Federation of America; New Networks Institute; Public Knowledge

Amici on Behalf of Petitioners

No. 17-2344

CenturyLink, Incorporated

Petitioner

v.

Federal Communications Commission; United States of America

Respondents

Ad Hoc Telecommunications Users Committee; BT Americas, Inc.; Granite Telecommunications, LLC; INCOMPAS; Sprint Corporation; Windstream Services, LLC

Intervenors

No. 17-2685

Access Point, Inc.; Alpheus Communications, LLC; New Horizons Communications Corp.; XChange Telecom, LLC

Petitioners

v.

Federal Communications Commission; United States of America

Respondents

NCTA-The Internet & Television Association; Comcast Corporation; AT&T Services, Inc.; USTelecom; CenturyLink, Inc.

Intervenors

Consumer Federation of America; New Networks Institute; Public Knowledge

Amici on Behalf of Petitioners

Petitions for Review of an Order of the Federal Communications Commission

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Submitted: May 15, 2018
Filed: August 28, 2018

Before SHEPHERD, MELLOY, and GRASZ, Circuit Judges.

GRASZ, Circuit Judge.

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Two groups of petitioners ask this Court to review a 2017 order of the Federal Communications Commission ("FCC") that alters the FCC's regulations for business data services ("BDS"). One group, the "ILEC Petitioners,"[1] challenges new price cap rates in the order. The second group, the "CLEC Petitioners,"[2] challenges most of the other changes in the order, both on the adequacy of notice and on the merits. For the reasons discussed below, we grant the CLEC Petitioners' petition in part, regarding notice. We deny the petitions in all other respects.

I. Background

A. Business Data Services

The term BDS generally refers to communications lines for businesses, which offer dedicated service with guaranteed performance and speed. BDS is currently

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[1]The ILEC Petitioners are Citizens Telecommunications Company of Minnesota, LLC and CenturyLink, Inc. The term "ILEC" refers to "Incumbent Local Exchange Carriers." Local exchange carriers are companies that provide local telephone service or access. 47 U.S.C. § 153(32). The "incumbent" local exchange carriers are the carriers that held virtual monopolies in the provision of telephone service in their areas for many years before changes in law encouraged competition.

[2]The CLEC Petitioners are: Ad Hoc Telecommunications Users Committee; BT Americas, Inc.; Granite Telecommunications, LLC; COMPTEL d/b/a INCOMPAS ("INCOMPAS"); Sprint Corp.; Windstream Services, LLC; Access Point, Inc.; Alpheus Communications, LLC; New Horizons Communications Corp.; and XChange Telecom, LLC. Several of these petitioners are "CLECs" or "Competitive Local Exchange Carriers," while a few are BDS customers rather than any type of local exchange carrier. INCOMPAS is a national trade association representing competitive communications service providers and their supplier partners. We refer to the entire group as the CLEC Petitioners for ease of reference.

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transitioning from being provided through phone line-based "TDM" services,[3] which are heavily regulated, to being provided through packet-based "Ethernet" services, which are lightly regulated. Regulations limit prices on BDS in several ways, including imposing caps on aggregate prices ("price caps"). *See WorldCom, Inc. v. F.C.C.*, 238 F.3d 449, 454 (D.C. Cir. 2001). Regulations also require certain providers to tariff these services, which essentially means to publish any changes in the prices they charge before the changes take effect. *See id.*

The services at issue in this case are two different subsets of BDS: (1) end user channel terminations (or "channel termination services"), which connect the main provider's office to a customer's building; and (2) dedicated "transport services," which connect a provider's offices to other network locations. Currently, some of the CLEC Petitioners compete for customers by purchasing BDS from the main providers in order to reach specific customers. A competitor uses one or both services depending on whether it has equipment in a particular office or connects its network to the main provider's network at a different point.

Prior to issuance of the order under review in this case (*Business Data Services in an Internet Protocol Environment*, 32 FCC Rcd. 3459 (2017) (the "2017 Order")), the FCC had relied on a "temporary" formula for calculating the price caps on BDS. These price caps are generally subject to two adjustments: an annual increase to account for inflation; and an annual decrease to account for productivity in telecommunications that exceeds productivity in the general economy. The FCC refers to the annual decrease as the "X-factor." In 2000, the FCC adopted a proposal that set temporary X-rates of 3.0% for 2000, 6.5% for 2001 through 2003, and a rate equivalent to the inflation rate pending the FCC revisiting the issue by 2005. *Access*

[3]"TDM" refers to "time division multiplex," which is how providers transmit information over phone lines.

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Charge Reform, 15 FCC Rcd. 12962, 13025 ¶ 149 (2000). However, the FCC never revisited the issue until the 2017 Order.

The FCC also avoided permanent rules for applying BDS price caps before the 2017 Order. 2017 Order at ¶ 1. In 1999, the FCC sought to remove price caps on channel termination services and transport services in areas of the country with more competitive markets through what is known as the "Pricing Flexibility Order." *See generally Access Charge Reform*, 14 FCC Rcd. 14221 (1999) ("Pricing Flexibility Order"). The Pricing Flexibility Order provided some immediate changes and also established two forms of broader relief available in metropolitan statistical areas ("MSAs") for service providers that could prove a particular MSA met certain designated competitive thresholds. *See WorldCom, Inc.*, 238 F.3d at 454–55. In 2002, AT&T[4] petitioned the FCC to reconsider its Pricing Flexibility Order, alleging that the order was not fostering competitive entry and seeking a moratorium on further grants of pricing flexibility. *See Special Access Rates for Price Cap Local Exchange Carriers*, 20 FCC Rcd. 1994, ¶¶ 1–6 (2005). In 2005, the FCC rejected AT&T's requests but sought comment on the BDS price cap regulations and on any appropriate interim relief. *See id.* That 2005 Notice of Proposed Rulemaking started a proceeding that continued from January 2005 until the 2017 Order at issue in this case. 2017 Order at ¶ 1.

B. The 2016 Notice and the 2017 Order

In 2016, the FCC issued the most recent Further Notice of Proposed Rulemaking regarding BDS price caps. *See Business Data Services in an Internet Protocol Environment*, 31 FCC Rcd. 4723 (2016) (the "2016 Notice"). The 2016

[4]The 2002 version of AT&T was acquired by Southwestern Bell Company, which then rebranded as AT&T. Thus, the AT&T intervenor in this case does not necessarily share the views of the 2002 version of AT&T on BDS.

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Notice "propos[ed] to end the traditional use of tariffs for BDS services and discard[] the traditional classification of 'dominant' and 'nondominant' carriers," pairing this deregulation "with the use of tailored rules where competition does not exist." *Id.* at ¶ 4. The 2016 Notice articulated "four fundamental principles" for the new proposed regulations. *Id.* "First, competition is best." *Id.* at ¶ 5. "Second, the new regulatory framework should be technology-neutral." *Id.* at ¶ 6. "Third, Commission actions should remove barriers that may be inhibiting the technology transitions." *Id.* at ¶ 7. "Fourth, the Commission should construct regulation to meet not only today's marketplace, but tomorrow's as well." *Id.* at ¶ 8.

In the 2017 Order, the FCC began by analyzing competition in the market. It stated that its competition analysis was "informed by, but not limited to, traditional antitrust principles" and addressed "technological and market changes as well as trends within the communications industry, including the nature and rate of change." 2017 Order at ¶ 12. Based on data collected in the proceeding, it concluded there was reasonable competition, now or at least over the medium term, in TDM services with bandwidth above 45 Mbps,[5] all transport services, and all Ethernet services. *See id.* at ¶¶ 16, 73–76. It also concluded that a competitor with nearby BDS facilities restrained prices for lower bandwidth TDM services in the short term and provided reasonable competition in three to five years. *See id.* at ¶¶ 13–15. The FCC further stated that "ex ante pricing regulation is of limited use—and often harmful—in a dynamic and increasingly competitive marketplace" and that "[w]e intend to apply ex ante regulation only where competition is expected to materially fail to ensure just and reasonable rates." *Id.* at ¶¶ 4, 86.

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[5]Throughout the 2017 Order, the FCC referred to two types of lower bandwidth phone lines: "Digital Signal 1" or "DS1," referring to a line with a data rate of approximately 1.5 Mbps; and "Digital Signal 3" or "DS3," referring to a line with a data rate of approximately 45 Mbps. *See* 2016 Notice at ¶ 25 (defining those terms).

The FCC took three actions in light of these conclusions regarding competition. First, it continued forbearance from *ex ante* regulation[6] of higher bandwidth TDM services and of all Ethernet services, emphasizing that packet-based *telecommunications* services remain subject to Title II regulations. *Id.* at ¶¶ 87–89. Second, it extended its forbearance from *ex ante* regulation to include TDM transport services. *Id.* at ¶¶ 90–93. Third, it established a Competitive Market Test for lower bandwidth TDM channel termination services. *Id.* at ¶¶ 94–171.

When creating the Competitive Market Test, the FCC assessed what it believed would be the (1) relevant geographic area, (2) the relevant data, and (3) the appropriate level of competition. *See id.* On the first issue, it narrowed the relevant geographic area from MSAs to counties. *See id.* at ¶¶ 108–16. On the second issue, it used its "Form 477" broadband service availability data[7] along with data collected in the rulemaking proceeding for the initial assessment of competitiveness, and it required reliance on the Form 477 data for later reassessments. *See id.* at ¶¶ 103–07. On the third issue, it concluded that a single competitor, even if merely within a half mile of a set of customers rather than directly servicing those customers, significantly affected prices such that the costs of price caps would exceed the benefits in that market. *See id.* at ¶¶ 117–29. Relatedly, the FCC also concluded in its competition analysis that a residential cable network could substitute for low-bandwidth BDS for some customers. *See id.* at ¶¶ 27–31.

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[6]"*Ex ante* regulation" refers to any regulation of prices in advance, including price caps.

[7]The FCC requires all facilities-based broadband providers to report every census block where they offer broadband exceeding 200 kbps in either upload or download bandwidth speed. 2017 Order at ¶ 105. The FCC collects this data semi-annually and makes the data available to the public. *Id.*

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Based on these conclusions, the FCC established two criteria for competitiveness. First, a business location is competitive if a competitive provider's facilities are within half a mile. *Id.* at ¶ 132. Second, a business location is competitive if a cable provider's facilities are within the same census block.[8] *Id.* at ¶ 133.

After deciding on its Competitive Market Test, the FCC engaged in data analysis to determine the thresholds for each of the criteria. *Id.* at ¶¶ 135–44. It examined what thresholds for the two criteria have the least risk of both overregulation on one hand and underregulation on the other. *See id.* The FCC then selected thresholds that were higher than any of its analytics demanded "out of an abundance of caution" and so "that counties [it] deregulate[s] will be predominantly competitive." *Id.* at ¶¶ 141–42. Thus, it determined that a county is competitive if 50% of the BDS customer locations within that county have a facilities-based competitor within half a mile (as opposed to a competitor who relies on ILECs in the area and lacks its own facilities nearby) or if 75% of the census blocks within that county have cable broadband service. *See id.* The FCC also directed the FCC's Wireline Competition Bureau to retest non-competitive counties every three years to determine competitiveness. *See id.* at ¶¶ 145–52.

For counties deemed non-competitive under the Competitive Market Test, the FCC left price cap regulation in place with some modifications. First, it declined to re-impose price caps in any counties where it had previously granted related relief under the Pricing Flexibility Order. *Id.* at ¶¶ 178–82. Second, it extended some

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[8]The FCC reasoned that a cable provider has incentive to invest in serving locations within a census block where it is already present. 2017 Order at ¶ 133. A census block is the smallest geographic measurement used by the United States Census Bureau for data collection, generally referring to "statistical areas bounded by visible features." U.S. Census Bureau, Geographic Terms and Concepts - Block, https://www.census.gov/geo/reference/gtc/gtc_block.html.

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limited pricing flexibility to all non-competitive counties. *Id.* at ¶¶ 183–86. Third, the FCC prohibited non-disclosure agreements ("NDAs") in specified BDS contracts in non-competitive counties, to the extent the NDAs forbade or prevented disclosure of information to the FCC. *Id.* at ¶¶ 187–96. Finally, it set the X-factor for annual price cap adjustments to DS1 and DS3 end user channel terminations at 2%. *Id.* at ¶¶ 197–99.

In addition to creating a Competitive Market Test, the FCC also removed the tariff (filing) requirement from a few services. It expanded its removal of the tariff requirement for BDS with higher bandwidth, extending that relief to all companies rather than just those companies that had successfully petitioned for such relief about a decade ago. *Id.* at ¶¶ 155–59. It also newly removed the tariff requirement for transport services and for any BDS within counties previously granted certain relief under the Pricing Flexibility Order. *Id.* at ¶¶ 160–65.

After the FCC published the 2017 Order in the Federal Register, the respective petitioners sought review in different circuits. The FCC notified the Judicial Panel on Multidistrict Litigation of the multiple petitions for review, and the panel consolidated proceedings in this Court for review. The nature of the ILEC Petitioners' and CLEC Petitioners' challenges to the 2017 order were very different, leading several petitioners in each group to intervene in opposition to the relief sought by the other group.[9]

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[9]The following entities intervened to oppose the ILEC Petitioners: Ad Hoc Telecommunications Users Committee; BT Americas, Inc.; Granite Telecommunications, LLC; INCOMPAS; Sprint Corporation; and Windstream Services, LLC. CenturyLink, Inc., intervened along with non-petitioners AT&T Services, Inc., and USTelecom to oppose the CLEC Petitioners. Some stakeholders in the cable industry (NCTA-The Internet & Television Association and Comcast Corporation) also intervened to oppose the CLEC Petitioners.

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II. Standard of Review

On review of an agency order, we must "hold unlawful and set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2). An agency rule is arbitrary and capricious "if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

"A court is not to ask whether a regulatory decision is the best one possible or even whether it is better than the alternatives." *FERC v. Elec. Power Supply Ass'n*, 136 S. Ct. 760, 782 (2016). Instead, we ask whether the agency "examine[d] the relevant data and articulate[d] a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'" *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43 (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)). We cannot "supply a reasoned basis for the agency's action that the agency itself has not given" but may "uphold a decision of less than ideal clarity if the agency's path may reasonably be discerned." *Id.* (citations omitted).

"[W]hen the resolution of the dispute involves primarily issues of fact and analysis of the relevant information requires a high level of technical expertise, we must defer to the informed discretion of the responsible federal agencies." *Minnesota Pub. Utils. Comm'n. v. F.C.C.*, 483 F.3d 570, 577 (8th Cir. 2007) (alteration in original) (quoting *Cent. S. Dakota Co-op. Grazing Dist. v. Sec'y of U.S. Dep't of Agric.*, 266 F.3d 889, 894–95 (8th Cir. 2001)). Our review is narrow in scope and we will not "substitute our judgment for that of the agency." *Id.* (quoting same).

If a petitioner challenges the agency's compliance with the Administrative Procedure Act's ("APA's") procedural requirements, then *de novo* review is required "because compliance 'is not a matter that Congress has committed to the agency's discretion.'" *United States v. Brewer*, 766 F.3d 884, 887–88 (8th Cir. 2014) (quoting *Iowa League of Cities v. E.P.A.*, 711 F.3d 844, 872 (8th Cir. 2013)).

III. Analysis

The CLEC Petitioners' arguments fit into five categories: (1) the adequacy of notice, (2) the ending of *ex ante* regulations for transport services, (3) the Competitive Market test, (4) the rules regarding Ethernet services, and (5) the Interim Wholesale Access Rule. The ILEC Petitioners' arguments solely concern the X-factor. We address each of these issue categories in turn.

A. Notice

The CLEC Petitioners advance three specific arguments as to lack of sufficient notice: (1) the 2017 Order was broadly deregulatory while the 2016 Notice requested comment on a heightened regulatory scheme; (2) they had no meaningful opportunity to analyze the specific criteria adopted in the 2017 Order; and (3) at minimum, they had no notice of the complete deregulation of transport services.

The APA provides the following requirements for notice:

> (b) General notice of proposed rule making shall be published in the Federal Register, unless persons subject thereto are named and either personally served or otherwise have actual notice thereof in accordance with law. The notice shall include—
>
> > (1) a statement of the time, place, and nature of public rule making proceedings;

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> (2) reference to the legal authority under which the rule is proposed; and
> (3) either the terms or substance of the proposed rule or a description of the subjects and issues involved.

5 U.S.C. § 553. "[A]n agency's notice is sufficient if it allows interested parties to offer 'informed criticism and comments.'" *Missouri Limestone Producers Ass'n, Inc. v. Browner*, 165 F.3d 619, 622 (8th Cir. 1999) (quoting *Northwest Airlines, Inc. v. Goldschmidt*, 645 F.2d 1309, 1319 (8th Cir. 1981)).

1. Notice of a broadly deregulatory order

The CLEC Petitioners complain that the 2016 Notice requested comment on a *heightened* regulatory scheme while the 2017 Order was broadly *deregulatory*. A somewhat Orwellian approach to proposing rules in the 2016 Notice creates much of the dispute here. One of the FCC's stated goals was "large scale de-regulation," but it requested comment on several suggestions that would have *increased* regulation. 2016 Notice at ¶ 4; *e.g.*, *id.* at ¶ 354. The FCC, whose composition changed in 2017, emphasized the stated goal in the 2017 Order and followed only the proposals in the 2016 Notice that adhered to that stated goal. The CLEC Petitioners argue that we should vacate the 2017 Order because the 2016 Notice requested comment on a heightened regulatory scheme and that it was impossible for them to anticipate deregulation. We find it significant that the CLEC Petitioners base their argument here on their expectation that the FCC in 2017 would not follow through on its 2016 stated goal.

More specifically, the 2016 Notice proposed "large scale de-regulation" that "goes hand in hand with the use of tailored rules where competition does not exist." 2016 Notice at ¶ 4. It observed that "the data and our analysis suggests that competition is lacking in BDS at or below 50 Mbps in many circumstances" and requested comment on the issue. *Id.* at ¶ 271 & n.690. It stated that the Pricing

Flexibility Order's "collocation test," which assessed competitive equipment collocated with an ILEC's equipment, (1) failed because it was "a poor proxy for predicting the entry of facilities-based competition," (2) "retained unnecessary regulation in areas that were very likely to be competitive," and (3) "deregulated over large areas where competition was unlikely to occur." *Id.* at ¶ 275. The 2016 Notice requested comment on whether census blocks were an appropriate geographic area for a Competitive Market Test or whether a larger or more granular area was appropriate, strongly implying that MSAs were too broad by stating that "[o]ur goal is to learn from past experiences and to not repeat the errors of the 1999 pricing flexibility regime by granting relief too broadly to cover areas where competition is not present or unlikely to occur." *Id.* at ¶¶ 289–90.

The CLEC Petitioners necessarily argue at a high level of abstraction because their arguments are based on their own interpretation of the 2016 Notice. The CLEC Petitioners read these provisions in light of their understanding that the FCC, as composed in 2016, believed that the 1999 Pricing Flexibility Order was wrong and did not really mean to pursue large-scale deregulation.

We reject their arguments because their reading of the 2016 Notice entails an interpretation whose basis is not present in the text. The 2016 Notice discussed how the prior test was both over-inclusive and under-inclusive, which implies shifting the rules in favor of a better-tailored deregulatory approach. The 2016 Notice's only limits on new criteria for a Competitive Market Test were its disavowal of both the collocation test from the Pricing Flexibility Order and the MSA geographic area. 2016 Notice at ¶¶ 275, 290. The CLEC Petitioners may be correct that the FCC, as composed in 2016, would have expanded the use of price caps and applied a stricter competitive market test favoring their use, but nothing in the 2016 Notice compelled the FCC to abandon "large scale de-regulation" in favor of that approach. From the 2016 Notice's plain text, the CLEC Petitioners had adequate notice of large scale deregulation.

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2. Notice of specific criteria

The CLEC Petitioners argue that the criteria the FCC adopted in the Competitive Market Test were not proposed in the 2016 Notice. The FCC applied two criteria for the Competitive Market Test: (1) competitive providers within half a mile, or (2) competitive cable providers within the relevant census block. *See* 2017 Order at ¶¶ 132–33. If the 2016 Notice "described in significant detail the factors that would animate a new standard," and the 2017 Order used those factors, then the commenters had adequate notice of the final rule despite not knowing its final application of those factors. *See United States Telecom Ass'n v. F.C.C.*, 825 F.3d 674, 735 (D.C. Cir. 2016).

Broadly speaking, the 2017 Order followed the 2016 Notice's framework for the new standard it adopted. As the 2016 Notice proposed, the 2017 Order set "objective criteria," "subject[ing] markets determined competitive to minimal regulation," and "subject[ing] relevant markets, determined non-competitive, to specific rules." 2016 Notice at ¶ 270.

The 2016 Notice's request for comment described the type of criteria it was considering:

> On the criteria for the Competitive Market Test, we invite comment. Initially, we are proposing a test, which focuses on multiple factors, including bandwidth, different customer classes, business density, and the number of providers in areas consisting of census blocks where each block in the relevant market meets the specified criteria. As described above, the data and our analysis suggests that competition is lacking in BDS at or below 50 Mbps in many circumstances, and that competition is present in BDS above 50 Mbps in many circumstances. Such evidence will guide how the Commission uses product market characteristics in applying the Competitive Market Test to a relevant market. We seek comment on the appropriate factors to include in the test and, in

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particular, the appropriate weight to attribute to the various factors in application of the test.

2016 Notice at ¶ 271 (footnote omitted). The 2016 Notice then sought comment on many particular facets of these criteria categories, including (1) whether a 50 Mbps bandwidth demarcation was the correct demarcation, *id.* at ¶ 285, (2) the number of competitors necessary for the area to be deemed competitive, *id.* at ¶ 294, (3) whether a nearby cable company with DOCSIS 3.0 (a particular standard for sending high speed internet over cable wires) on its network counted as a competitor, *id.*, and (4) whether a census block was the appropriate geographic area for the Competitive Market Test or whether the test should use a larger or more granular area, *id.* at ¶¶ 287–91.

At a broad level, the Competitive Market Test adopted in the 2017 Order addressed the multiple factors suggested in the 2016 Notice: "bandwidth, different customer classes, business density, and the number of providers in areas consisting of census blocks where each block in the relevant market meets the specified criteria." 2016 Notice at ¶ 271. The Competitive Market Test assessed the number of providers in the area. *See* 2017 Order at ¶¶ 132–33. It also assessed bandwidth indirectly, rejecting the suggestion of a 50 Mbps demarcation but applying regulation to BDS at or below 45 Mbps.[10] *See id.* at ¶¶ 130–33. It narrowed the geographic area, but it rejected the suggestion of a census block area, finding that a county was a sufficiently granular area without creating administrative complications that arose with smaller units. *Id.* at ¶¶ 108–16. The FCC completely rejected criteria based on customer classes or business density, reasoning "they are largely unnecessary to achieve our policy goals and, importantly, [] including them in a competitive market test would make it administratively unwieldy." *Id.* at ¶ 99 & n.305.

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[10]The 2017 Order demarcated higher and lower bandwidth at 45 Mbps rather than 50 Mbps because existing regulation ended there and because it found evidence in the record that services above a DS3 were competitive. *See* 2017 Order at ¶ 87.

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At a more narrow level, both criteria in the Competitive Market Test adhered to the particularized requests for comment in the 2016 Notice. While not all of those particularized requests fell under the "Competitive Market Test" subheading of the 2016 Notice, all of them were within the 2016 Notice.

It is true that the first criterion in the 2017 Order (regarding nearby competitors) is not in the Competitive Market Test subsection of the 2016 Notice. Despite that omission, other subsections of the 2016 Notice found "that fiber-based competitive supply within at least half a mile generally has a material effect on prices of BDS with bandwidths of 50 Mbps or less, even in the presence of nearby UNE-based [relying on "unbundled network elements" from a major competitor] and HFC-based ["hybrid fiber-coaxial" or cable] competition." 2016 Notice at ¶¶ 161, 211. The 2016 Notice then requested comment on "how close competition must be to place material competitive pressure on supply at a given location." *Id.* at ¶ 215. That request for comment is precisely on point to the adopted criterion. The 2016 Notice would have been better organized if it had placed that request for comment under the "Competitive Market Test" subsection. Nevertheless, because the FCC requested comment on the proximity of competitors, the failure to include that concept in all relevant subsections is not fatal to the notice afforded the final rule. We agree with our sister circuit that a significant difference exists between instances "where the [notice] expressly asked for comments on a particular issue" and where the notice mentioned an issue but "gave no indication that the agency was considering a different approach." *CSX Transp., Inc. v. Surface Transp. Bd.*, 584 F.3d 1076, 1081 (D.C. Cir. 2009) (collecting cases). Because the 2016 Notice expressly asked for comments on this particular issue, the CLEC Petitioners had adequate notice of this criterion.

The second criterion in the 2017 Order, regarding nearby cable companies, is in the 2016 Notice's Competitive Market Test subsection. The 2016 Notice requested comment on whether "two facilities-based competitors" are sufficient for competition,

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whether to weigh "competition from a cable company" differently than other competition, and whether it is "enough for a cable company to just have DOCSIS 3.0 coverage over their HFC network in the area." 2016 Notice at ¶ 294. After reviewing the comments, the FCC essentially answered those three questions with yes, no, and yes, respectively. 2017 Order at ¶¶ 29, 120–21, 133. The possibility that the FCC might have selected different answers in 2016 does not alter the conclusion that the CLEC Petitioners had notice of the range of alternatives being considered.

For the foregoing reasons, the CLEC Petitioners had adequate notice of the adopted Competitive Market Test.

3. Notice of ending *ex ante* regulation of transport services

The CLEC Petitioners' third argument challenging the sufficiency of notice is that they had no notice of the complete deregulation of transport services. The CLEC Petitioners are correct that there is no notice of completely ending *ex ante* regulation of transport services in the 2016 Notice. The 2016 Notice proposed a Competitive Market Test for both channel termination services and transport services. 2016 Notice at ¶ 278. The FCC argues that it gave adequate notice of the different treatment for transport services because the 2016 Notice stated that transport services are more competitive than channel termination services. *Id.* at ¶ 281. We reject this argument because the 2016 Notice also proposed addressing the two services under the same regulations notwithstanding the difference *in the very next paragraph*. *Id.* at ¶ 282. Nothing in the 2016 Notice requests comment on treating the two services differently. Yet, the 2017 Order treated transport services differently when it ended *ex ante* regulation of TDM transport services. *See* 2017 Order at ¶¶ 90–93. Thus, the FCC failed to provide adequate notice of its ending of *ex ante* regulation of transport services.

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We reject the FCC's suggestion that any notice of the subjects and issues involved is sufficient notice. The APA states that an agency must include "either the terms or substance of the proposed rule or a description of the subjects and issues involved." 5 U.S.C. § 553(b)(3). We have stated that "[t]he notice should be sufficiently descriptive of the 'subjects and issues involved' so that interested parties may offer informed criticism and comments." *Northwest Airlines*, 645 F.2d at 1319 (quoting *Ethyl Corp. v. E.P.A.*, 541 F.2d 1, 48 (D.C. Cir. 1976) (en banc)). As the Tenth Circuit has explained, § 553(c) constrains what level of notice satisfies § 553(b)(3) because the notice must be sufficient to "give[] interested persons an opportunity to participate in the rule making." *See Mkt. Synergy Grp., Inc. v. United States Dep't of Labor*, 885 F.3d 676, 681 (10th Cir. 2018) (quoting 5 U.S.C. § 553(c)).[11] Because the FCC did not propose completely ending *ex ante* regulation of transport services, it did not allow for informed participation by interested parties in that portion of the rulemaking, and its notice was insufficient.

4. Prejudice

The FCC alternatively argues that, even if the 2016 Notice did not satisfy its obligations under the APA, the FCC's release of a draft of the 2017 Order three weeks before adoption made any procedural error harmless since the FCC was able to review and address comments on the draft 2017 Order. *See* 5 U.S.C. § 706 ("due account shall be taken of the rule of prejudicial error"). We reject this argument

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[11]Other courts have focused this fair notice inquiry on the rule rather than the notice, asking whether the rule is a "logical outgrowth" of the proposal rather than whether the parties had fair notice of the final rule. *See, e.g.*, *CSX Transp.*, 584 F.3d at 1079. There is no meaningful difference between the two approaches. *See Long Island Care at Home, Ltd. v. Coke*, 551 U.S. 158, 174 (2007). Thus, we do not separately address the CLEC Petitioners' arguments about whether the remainder of the final rule was a logical outgrowth because our discussion of notice addresses the substance of those arguments.

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because we do not believe that the FCC providing a few weeks to review the 2017 Order cured the deficient notice regarding transport services.

The only authority the FCC cites in support of its harmless error argument discussed the adequacy of notice and did not address the timing issue here. *See Nat'l Ass'n of Broadcasters v. F.C.C.*, 789 F.3d 165, 176–77 (D.C. Cir. 2015) (holding there was no prejudice where an FCC bureau released a staff-level notice of a proposed rule, and the FCC later adopted the rule without issuing its own notice). Nothing in that opinion suggests that a three-week notice of a complex issue is sufficient. *See id.* We have not found any other authority supporting such a contention, and we are also not persuaded that a few weeks of review cured the deficient notice regarding transport services here. The APA's procedural rules are designed to allow parties the opportunity for informed criticism and comments, *see CSX Transp.*, 584 F.3d at 1083, and creating any exceptions to the procedural requirements would allow agencies to significantly alter the course of a proceeding without authorization. We hold that the early release of a draft order does not cure the harm from inadequate notice under these facts.

Some intervenors raised a separate prejudice argument, insisting that the CLEC Petitioners failed to demonstrate prejudice because they only vaguely referenced additional "economic analysis" regarding transport services without explaining how such analysis would differ from their numerous submissions in the proceeding. While the intervenors may be correct that everything that needed to be said regarding transport services was said during the twelve years preceding the 2017 Order, the law regarding prejudice under the APA ensures procedural integrity. Losing the opportunity to dissuade an agency from adopting a particular rule is prejudicial. *See CSX Transp.*, 584 F.3d at 1083 ("[T]hey were prejudiced by their inability to persuade the Board not to adopt the four-year rule in the first place, thus requiring them to litigate the issue in individual proceedings."). In a slightly different context, this Court has applied similar reasoning, finding injury for purposes of standing when an

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APA procedural right is violated. *See Iowa League of Cities*, 711 F.3d at 870–871 (violation of a procedural right constitutes injury in fact where the procedure is designed to protect some threatened concrete interest, including the ability to meet one's regulatory obligations). Requiring more than a procedural violation of the notice requirement in order to find prejudice would risk virtually repealing the APA's procedural requirements. *See Sprint Corp. v. F.C.C.*, 315 F.3d 369, 376–77 (D.C. Cir. 2003).

It may be true that the numerous comments received in the proceeding already discussed all relevant aspects of transport services. Other parties' comments may have raised the prospect of treating transport services differently, including the decision adopted in the 2017 Order, and the CLEC Petitioners may have responded to those comments. These comments, however, would not cure inadequate notice. Agencies "cannot bootstrap notice from a comment." *Shell Oil Co. v. E.P.A.*, 950 F.2d 741, 760 (D.C. Cir. 1991) (quoting *Small Ref. Lead Phase-Down Task Force v. U.S. E.P.A.*, 705 F.2d 506, 549 (D.C. Cir. 1983)). The APA requires interested parties wishing to play a role in the rulemaking process to comment on the *agency's* proposals, not on other interested parties' proposals. We cannot divine whether the CLEC Petitioners have any additional arguments against ending *ex ante* regulation of transport services, but we believe they were prejudiced because any chance to make their case did not come from the FCC's notice.

5. Conclusion regarding the adequacy of notice

We grant the petitions of the CLEC Petitioners on the notice issue, in part, vacating solely the portions of the final rule affecting TDM transport services and remanding them to the FCC for further proceedings. We otherwise deny the petitions of the CLEC Petitioners on the remainder of the notice issue.

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B. *Ex Ante* Regulations for Transport Services

The CLEC Petitioners also challenged the merits of the 2017 Order's rules regarding *ex ante* regulations for transport services. Because we hold that the FCC provided inadequate notice of this issue, and we are remanding it on that basis, we do not need to reach this argument.

C. The Competitive Market Test

The CLEC Petitioners challenge the economic theory behind the Competitive Market Test, the respective merits of the criteria in the test, the reasonableness of finding duopolies competitive under the test, and the adequacy of the cost-benefit analysis in the test. We address each of those challenges in turn.

1. Economic theory

The FCC did not assess the ILECs' market power before granting regulatory relief, and the CLEC Petitioners insist that this was an error. The argument presumes the FCC is bound to apply the traditional market power framework from the guidelines for horizontal mergers issued by the Federal Trade Commission and the U.S. Department of Justice (the "Horizontal Merger Guidelines"). The CLEC Petitioners are correct that the FCC has applied that framework in other orders in other contexts, such as *Petition of Qwest Corp. for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Phoenix, Arizona Metro. Statistical Area*, 25 FCC Rcd. 8622 (2010) (the "Qwest/Phoenix unbundling adjudication"), but nothing indicates the FCC was bound to extend that framework to the BDS context. The Pricing Flexibility Order specifically rejected the traditional market power framework in the BDS context, finding that the benefits of regulatory relief outweighed any costs of granting relief while an incumbent still had some market power, *see* Pricing Flexibility Order

at ¶¶ 90–91, and there is no evidence in the record that the FCC adopted another economic rule in the BDS context until the 2017 Order.

Perhaps recognizing this problem, the CLEC Petitioners also advocate a finding that the FCC adopted the traditional market power framework since it cited to the Horizontal Merger Guidelines in the 2017 Order. The FCC relies on its overall disavowal of traditional antitrust principles in the 2017 Order, observing that it was only informed by those principles on a limited basis and did not adopt them completely. The CLEC Petitioners question whether that disavowal was effective based on citations in the 2017 Order to the Horizontal Merger Guidelines.

The CLEC Petitioners' attempts to impose the Horizontal Merger Guidelines on the 2017 Order ignore the portions of the 2017 Order that rejected the traditional market power framework. The FCC criticized the industry concentration measures of a traditional market power framework because, viewed in isolation, they are "largely poor indicators of whether market conditions exist that will constrain business data services prices, and overstate the competitive effects of concentration." 2017 Order at ¶ 66. The FCC offered three reasons for this conclusion: (1) nearby facilities can "expand [their] presence to timely reach a customer," (2) a competitor does not need to be physically serving a location to act as a competitive constraint on the market, and (3) concentration metrics largely reflect power in declining "legacy" TDM services. *Id.* at ¶ 67.

The CLEC Petitioners advance three arguments against the FCC's approach, but none of them are persuasive.

First, the CLEC Petitioners accuse the FCC of wholly disregarding market power after the FCC dismissed the relevance of market concentration and the traditional market power framework. This accusation is incorrect because the FCC addressed two aspects of market power: deciding that no market power existed in

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Ethernet services, *see id.* at ¶ 67, and concluding that ILEC market power in TDM services had been largely eliminated and was declining where it remained, *see id.* at ¶ 84.

Second, the CLEC Petitioners argue that the FCC's own expert report undermined its conclusions. The report stated that ILECs charge higher prices for lower bandwidth TDM BDS in areas without a competitor, reflecting use of market power. Importantly, this conclusion from the report did not survive peer review. *See id.* at ¶ 74. The problem with the CLEC Petitioners' argument, as well as with drawing definitive conclusions from the expert report, is that the FCC recognized different fixed costs in serving different customers may be causing the increased prices in certain areas. *See id.* at ¶ 75 & n.243. The FCC's expert report was unable to completely account for this potential alternate cause for high prices and thus a causal connection could not be established. *See id.*

Finally, the CLEC Petitioners accuse the FCC of "not even attempt[ing] to show that its 'nearby potential competitors' currently drive prices to 'reasonably competitive' levels, or will ever do so in the near term." This accusation wrongly presumes that the FCC needed to find competition in the *short* term. If the FCC chose to follow a traditional market power framework, then it would need to look to short term results. Under the public interest balancing that the FCC applied, however, it could weigh competition in the *medium* term, meaning that the omission of short term assessments is not fatal to its analysis.

In sum, the CLEC Petitioners offer no persuasive reason to convert mere citations to the Horizontal Merger Guidelines into wholesale adoption of an economic theory that the FCC explicitly rejected, especially in light of the multiple reasoned

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rejections of both the CLEC Petitioners' economic theory and their evidence.[12] Thus, the FCC was not bound to apply the traditional market power framework, either by past orders or by partial use of the Horizontal Merger Guidelines. We hold that the FCC applied a permissible economic theory for its Competitive Market Test.

2. Reasonableness of the first criterion of the Competitive Market Test

The first criterion of the Competitive Market Test stated that a business location is competitive if a competitive provider's facilities are within half a mile. 2017 Order at ¶ 132. The dispute here is whether the evidence shows that the CLEC Petitioners cannot economically build out to low bandwidth customers in areas deemed competitive by the Competitive Market Test. The FCC did not believe the CLEC Petitioners' evidence, and the CLEC Petitioners protest that the evidence compels a finding in their favor.

We note that the FCC made several findings in support of its conclusions. The FCC observed in the 2017 Order that most of the buildings at issue are far closer to competitive fiber than half a mile, as the average distance between buildings served by ILEC BDS and a competitive fiber line is 364 feet. *Id.* at ¶ 42. In addition, half of these buildings are within 88 feet of competitive fiber, and the next quarter are within 456 feet, leaving only the last quarter of buildings at issue in the Competitive Market Test approaching a half mile distance. *See id.* The FCC also cited evidence

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[12]The Third Circuit case cited by the CLEC Petitioners is not on point. It involved an order where the FCC applied the Horizontal Merger Guidelines for local television ownership and a completely different economic theory for local radio ownership that contradicted the Horizontal Merger Guidelines without explaining why it adopted two different economic theories to assess ownership limits in the same Order. *See Prometheus v. F.C.C.*, 373 F.3d 372, 433 (3d Cir. 2007). The 2017 Order did not rely on two contrary economic theories and thus did not suffer from the same defect found in *Prometheus*.

that some competitors will build as far as a mile out, although it noted that these competitors are an exception to the general trend. *See id.* at ¶ 41 & n.136. The FCC believed that these nearby networks exist because competitive providers build their fiber rings so that they can market to multiple customers near a lateral line, aggregating demand for a build out. *Id.* at ¶ 42, 54, 119 n.363. The FCC also predicted that cable's aggressive build outs since the collection of data in 2013 had likely brought most of the locations that were within half a mile of competition in 2013 within a quarter mile of competition in 2017. *See id.* at ¶ 43. The FCC argues that the CLEC Petitioners' studies inflate costs by selecting the most expensive build (entirely underground lines), presuming a separate lateral line for each individual low bandwidth customer, and treating the main fiber ring as part of the cost of reaching new customers rather than as an existing "sunk" cost near a potential new customer.[13]

The CLEC Petitioners focus on evidence about what conditions justify build-outs while dismissing the concept of building circuitous routes as the exception rather than the rule. They argue that their networks are near low-bandwidth customers because they built lines near high-bandwidth customers in the same area, while the FCC argues that the CLEC Petitioners' networks are near low-bandwidth customers because they build networks to facilitate lower cost expansion to low-bandwidth customers. It is difficult to parse the evidence because the costs of building to a low bandwidth customer rely heavily on what costs count as sunk costs and on how expensive of a build-out each company performs. The evidence in support of both arguments is credible. As a result, there is no reason the FCC was obligated to favor the CLEC Petitioners' interpretation of the evidence over the interpretation it adopted, and the FCC was not arbitrary and capricious in adoption of its first criterion.

[13]The FCC refers to fixed costs already incurred before serving a new customer as "sunk" costs in wireline telecommunications. 2017 Order at ¶ 120 & nn.370–71.

3. Reasonableness of the second criterion of the Competitive Market Test

The second criterion of the Competitive Market Test stated that a business location is competitive if a cable provider's facilities are within the same census block. 2017 Order at ¶ 133. The CLEC Petitioners argue that this criterion is wrong because cable is not in the BDS market and is generally not building fiber BDS connections to low bandwidth areas.

The FCC freely conceded in the 2017 Order that Ethernet over Hybrid Fiber-Coaxial ("EoHFC") (cable's symmetrical connection that sometimes has performance guarantees) and cable's best efforts network (cable's asymmetrical residential connection without performance guarantees) are not in the same market as BDS because they are not perfect substitutes. *Id.* at ¶¶ 27–31. The FCC also observed, however, that businesses substitute EoHFC and best efforts service for BDS anyway at lower bandwidths, where they are willing to sacrifice some of the service guarantees of BDS for a lower price. *See id.* Thus, it concluded that cable companies are building fiber connections to target high-bandwidth locations while using their lower cost options to target low-bandwidth locations. *See id.* at ¶¶ 27–31, 55–62.

The CLEC Petitioners correctly characterize cable's relationship to BDS, but nothing in their arguments impugns the FCC's analysis. As the intervening cable stakeholders observed, the fact that their services are not the same as BDS does not undermine the other fact that cable services are increasingly functioning as substitutes for BDS anyway. *See id.* Thus, in view of the FCC's entire analysis rather than the portions selectively quoted by the CLEC Petitioners, the FCC was not arbitrary and capricious in adoption of its second criterion.

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4. Reasonableness of finding duopolies competitive

The CLEC Petitioners protest that duopolies (markets with only two competitors) have anticompetitive effects and that a Competitive Market Test cannot reasonably produce duopolies. As a procedural matter, they again cite the Qwest/Phoenix unbundling adjudication, arguing that the FCC was compelled to disfavor duopolies in this context based on its prior statements in another context. This is wrong both because the Qwest/Phoenix unbundling adjudication was focused on a particular market at a particular time and because, by its own terms, it has no binding effect on this BDS proceeding. Even if the Qwest/Phoenix unbundling adjudication were somehow binding, it did not create any bright line rule about when duopolies are competitive. 2017 Order at ¶ 121. Thus, the FCC was not compelled to agree with the CLEC Petitioners that the Competitive Market Test cannot reasonably produce duopolies.

On the merits, the problem with the CLEC Petitioners' duopoly argument is that it presumes their conclusion about high incremental costs. The FCC observed that the sunk costs to reach an area are high while the incremental costs of supplying new customers are low, causing ILECs to restrict prices to those low incremental costs when at least one competitor has spent the sunk costs. *Id.* at ¶ 120. As a result, it concluded that duopolies can sufficiently increase competition to make regulation unnecessary. The CLEC Petitioners may reasonably disagree with the FCC on what the evidence shows regarding incremental costs, but their disagreement is no basis for finding the FCC's interpretation of a conflicting record to be arbitrary and capricious.

Furthermore, even if the FCC misinterpreted the evidence on incremental costs, it receives deference when it predicts what will happen in the market in the future. "[J]udicial deference to agency action is 'especially important' when [an] agency's judgments are 'predictive.'" *Southwestern Bell Tel. Co. v. F.C.C.*, 153 F.3d 523, 547 (8th Cir. 1998) (quoting *City of St. Louis v. Dep't of Transp.*, 936 F.2d 1528, 1534

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(8th Cir. 1991)). The FCC explained in the 2017 Order that it relied on the Competitive Market Test and the related market data to predict what will happen in the market. 2017 Order at ¶ 124. The FCC also cited sufficient evidence to justify removing *ex ante* regulation in a market with two competitors. Regardless of whether its predictions based on uncertain data prove true, the FCC is not acting arbitrarily and capriciously when it makes such predictions in choosing how to regulate the market under its jurisdiction.

5. Cost-benefit analysis

The CLEC Petitioners further argue that the FCC's cost-benefit analysis supporting the 2017 Order failed to quantify the costs or measure them against the benefits. The CLEC Petitioners seemingly shift their argument in their reply brief, focusing on undervaluation of the benefits and alleging overvaluation of costs. Although this Court has not elaborated on the appropriate standard of review for challenges to an agencies' economic calculations, the D.C. Circuit has deferred to agencies, allowing them to "arrive at a cost figure within a broad zone of reasonable estimate." *Nat'l Ass'n of Home Builders v. E.P.A.*, 682 F.3d 1032, 1040 (D.C. Cir. 2012) (quoting *Nat'l Wildlife Fed'n v. E.P.A.*, 286 F.3d 554, 563 (D.C. Cir. 2002)). Under this deferential review, an agency need not quantify all costs "with rigorous exactitude," but it must consider them all. *See GTE Serv. Corp. v. F.C.C.*, 782 F.2d 263, 273 (D.C. Cir. 1986). We agree with this approach.

The problem with the CLEC Petitioners' argument is that it presumes that only price caps produce affordable rates, while the FCC found that competition would drive prices to competitive levels. 2017 Order at ¶ 102. The FCC agreed that the benefits of price caps outweighed the costs in areas with few competitive alternatives, which is why it adopted a Competitive Market Test. *See id.* at ¶ 101. It further explained that BDS has unique characteristics that make price cap regulations highly unlikely to be accurate measures of the correct price in a competitive market.

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Specifically, the FCC explained BDS has "high uncertainty due to frequent and often large unforeseen changes in both customer demand for services and network technologies that are hard to anticipate and hedge against in contracts with customers," 2017 Order at ¶ 127, "a complex set of products and services, which are tailored to individual buyers," *id.*, as well as "costs of provision that vary substantially across different customer-provider combinations," *id.*, and "large irreversible sunk-cost investments that a provider is required to make before offering service," *id.* Reasonable minds could disagree with the FCC's cost-benefit analysis, but there is nothing unreasonable about its conclusions, as it considered all of the relevant factors. Thus, the FCC was not arbitrary and capricious in its cost-benefit analysis.

6. Conclusions regarding challenges to the Competitive Market Test

We recognize that the relevant data presents radically different pictures of the competitiveness of the market depending on the economic theory applied and the weight given to conflicting pieces of evidence. But the FCC may rationally choose which evidence to believe among conflicting evidence in its proceedings, especially when predicting what will happen in the markets under its jurisdiction. Thus, we deny the petitions for review as to the Competitive Market Test because the FCC's resolution of competing evidence was not arbitrary and capricious.[14]

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[14]Because we find that the removal of *ex ante* regulation through a Competitive Market Test was reasonable without reference to *ex post* regulation, we need not further address whether the *ex post* regulation retained in the 2017 Order would save an unreasonable rule.

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D. Ethernet Services

The CLEC Petitioners argue the FCC unreasonably excluded low bandwidth Ethernet BDS from price caps. A brief discussion of the 2016 Notice is necessary before reaching the arguments here.

Although the 2016 Notice stated that it wanted a "technology and provider neutral" framework, implicitly treating both Ethernet and TDM services the same, it emphasized several times that it would still, as necessary, treat TDM services differently than Ethernet services "based on past experience and historical practice." 2016 Notice at ¶¶ 270 & n.689, 507. The 2016 Notice requested comment on how previous grants of forbearance would impact any regulatory approach. *Id.* at ¶ 311. While it requested comment on extending some type of rate regulation to Ethernet BDS in non-competitive areas, it proposed that the rate regulation would *not* be price caps but instead would be an anchor or benchmark pricing system based on the price caps for TDM BDS. *Id.* at ¶¶ 352–54. It noted that price caps incurred disadvantages that anchor or benchmark pricing did not, and it sought commentary on using anchor or benchmark pricing. *Id.* at ¶ 425. Finally, it proposed expanding the tariff forbearance for Ethernet BDS from the companies that had previously petitioned for such forbearance to all companies offering Ethernet BDS. *Id.* at ¶ 434. The 2016 Notice suggested applying price caps to Ethernet BDS only in a request for comment on whether to allow services to *voluntarily* include Ethernet BDS in their aggregate price caps, although it did also request comment on a Verizon/INCOMPAS letter suggesting the mandatory use of price caps in non-competitive areas. *See id.* at ¶¶ 426, 512.

In view of the 2016 Notice, the question facing the FCC and commenters was how to create a technology neutral framework that "take[s] account of legitimate differences" between technologies. *Id.* at ¶ 507. The CLEC Petitioners' arguments on the rule are flawed for two reasons: they overstate the importance of a mistake in

the 2017 Order, and they mischaracterize the 2016 Notice as proposing eliminating the distinction between TDM and Ethernet BDS.

The first flaw in the CLEC Petitioners' argument is that, while they are correct the 2017 Order misstated their comments, that error does not compromise the FCC's conclusions regarding low-bandwidth Ethernet. The FCC stated that the CLEC Petitioners would only extend their fiber networks, not their TDM networks, in low bandwidth situations. 2017 Order at ¶ 88. The record portions cited in ¶ 88 of the 2017 Order show that the CLEC Petitioners would not extend *any* network in low bandwidth situations. *See id.* Nevertheless, the CLEC Petitioners overstate the importance of that error. The FCC broadly found increasing revenue for cable and CLECs and decreasing prices in BDS even at low bandwidths. *Id.* at ¶¶ 68–73. It also found that the increased revenue combined with reduced sunk costs made Ethernet BDS competitive, especially because ILECs needed to incur the same sunk costs. *Id.* at ¶ 83. In view of the competition that the FCC found on the record, it was not unreasonable for the FCC to conclude both that entrants are better placed to win customers with Ethernet BDS than they would be if the market only included TDM BDS and that regulation would dissuade competitors from continuing with the rapid growth of Ethernet BDS. *See id.* at ¶ 88. As we observed in our discussion of the Competitive Market Test, there is conflicting evidence about whether competitors are building fiber networks to reach low bandwidth customers, and there is no reason the FCC was obligated to favor the CLEC Petitioners' interpretation of the evidence over the interpretation it adopted. The FCC's footnote regarding the CLEC Petitioners was errant, but it was also not essential to the economic analysis.

The second flaw in the CLEC Petitioners' argument is that it fails to acknowledge that the 2016 Notice proposed that Ethernet services not be subjected to tariffs or price caps. 2016 Notice at ¶¶ 420–26. Likely as a result, the CLEC Petitioners do not discuss the benchmarking versus price cap nuance contained in the 2016 Notice. The statement in the CLEC Petitioners' brief that "the Commission

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proceeded to create the exact regulatory disparity that it rejected a year before" is false because the 2016 Notice proposed regulatory disparity. The FCC followed the economic analysis that it noted in its 2016 Notice, concluding that it is easier to enter the market using Ethernet BDS because of the higher profits relative to sunk costs and the need for both ILECs and competitors to build out a fiber network. The CLEC Petitioners simply misread the 2016 Notice.

While the CLEC Petitioners may have some reasonable arguments against treating Ethernet services differently, there is still no basis here for this Court to conclude that the FCC acted arbitrarily and capriciously in its choice of whether to exclude Ethernet services from price caps.[15]

E. The Interim Wholesale Access Rule

The CLEC Petitioners argue the FCC unreasonably declined to extend the Interim Wholesale Access Rule to BDS. That rule requires ILECs to continue selling wholesale access to certain services when they discontinue a TDM input in favor of newer technology. We agree with the FCC that its elimination of the Interim Wholesale Access Rule moots the issue of whether the FCC unreasonably declined to extend that rule in this context. We also decline the CLEC Petitioners' invitation to adopt their characterization of the relevant "community" in 47 U.S.C. § 214(a) because the argument invites proxy review of an order not before us.

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[15]Because we find the FCC's actions regarding *ex ante* regulation reasonable without reference to *ex post* regulation, we need not further address whether *ex post* regulation would save an unreasonable rule.

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F. The "X-factor"

We next consider the ILEC Petitioners' sole challenge, which concerns the FCC's decision to set the "X-factor" annual price cap reduction at 2.0%. The FCC explained in its 2017 Order that it believed the 2.0% rate, which was based on the U.S. Bureau of Labor Statistics' Capital, Labor, Energy, Materials, and Services data for the broadcasting and telecommunications industries ("KLEMS (Broadcasting and Telecommunications)" or "KLEMS") data set, was likely too high, but that it did not have information in the record from which it could quantify either the magnitude or direction of bias. 2017 Order at ¶¶ 231, 236.

The ILEC Petitioners attack this rationale on two related grounds. First, they argue that the FCC failed to account for the overstated productivity in the KLEMS data set despite relevant information in the record that would have enabled such an adjustment. The ILEC Petitioners also fault the FCC for failing to adjust the KLEMS data set downward for the effect of declining utilization of TDM services on ILECs' unit costs. After carefully considering these arguments and the underlying record, we do not find that the FCC made an arbitrary or capricious decision.

We acknowledge the 2017 Order is not a model of clarity as it relates to the X-factor analysis. Nevertheless, a court may "uphold a decision of less than ideal clarity if the agency's path may reasonably be discerned." *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43 (quoting *Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc.*, 419 U.S. 281, 286 (1974)).

The best reading of this section of the 2017 Order is that the FCC rejected all of the data offered to it for adjusting the KLEMS data set as insufficiently precise. It acknowledged that the X-factor could reasonably be as low as 1.7%, which is the percentage proposed by CenturyLink's study for 2006–2014, the approximate midpoint time period in the FCC's data. 2017 Order at ¶¶ 224–25, 235. The FCC

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then concluded that it would prefer a higher X-factor based on (1) a mistaken comment about lack of studies with lower numbers[16] and (2) another study based on the KLEMS data set alone that favored a slightly higher X-factor. *Id.* at ¶ 235.

We see no reason in the record why the FCC would be compelled to adjust the KLEMS data set, especially in light of the conflicting evidence on what sort of adjustment was appropriate. As some intervenors observed, the CLECs offered significant evidence that the KLEMS data set *understates* the productivity level because the broadcasting industry has declining productivity while the telecommunications industry has increasing productivity, and the KLEMS data set included both industries. Also, the FCC found some evidence that cost-sharing between TDM and Ethernet services was increasing productivity for both, leaving it uncertain whether any adjustment to the KLEMS data set was necessary even when price caps are applied to TDM services alone. *Id.* at ¶¶ 227–30. All of these reasons support the FCC's decision not to adjust the KLEMS data set and to reach the resulting 2.0% X-factor from an unadjusted KLEMS data set.

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[16]We are troubled by the FCC's statement in the 2017 Order that "[n]o party has submitted an X-factor study or similar data-based analysis purporting to show that the X-factor should be lower than 2.0 percent." CenturyLink submitted just such a study. 2017 Order at ¶ 235 n.595. The FCC cited the relevant study for other propositions in the 2017 Order, indicating that it was aware of the study. *See, e.g.*, *id.* at ¶ 206 n.534. It also expressed multiple reasons for rejecting any adjustment in light of the conflicting evidence. If the FCC did not accept the credibility of the proposed adjustment data before it, any adjustment based on that data would be arbitrary and capricious. *See Sierra Club v. E.P.A.*, 884 F.3d 1185, 1195 (D.C. Cir. 2018) (holding that the EPA was arbitrary and capricious when it based a conclusion on data it found unreliable). Thus, because the FCC reasonably found any adjustment to the KLEMS data set inappropriate, we are not convinced that its mistaken statement was anything more than a failure to expressly acknowledge all of the adjustment options it was rejecting.

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The ILEC Petitioners' argument that the FCC failed to account for relevant evidence showing overstated productivity in the KLEMS data set is flawed because the FCC found conflicting evidence both as to whether the KLEMS data set overstated productivity and, if so, the magnitude of that overstatement. "When neither of two suggested adjustments applied to inaccurate data is completely satisfactory[,] a rate-making body may fashion its own adjustments within reasonable limits." *United Parcel Serv., Inc. v. U.S. Postal Serv.*, 184 F.3d 827, 839 (D.C. Cir. 1999) (quoting *Ass'n of Am. Publishers, Inc. v. Governors of U. S. Postal Serv.*, 485 F.2d 768, 773 (D.C. Cir. 1973)). The FCC declined to impose any adjustment because it determined it needed an extensive set of company specific data and inputs to accurately resolve the conflicting evidence. 2017 Order at ¶ 231. While it may have some of that data in the record, the FCC was not unreasonable in declining to use the limited data at hand when it had doubts about the reliability of that data.

The ILEC Petitioners' argument that evidence of declining utilization of TDM services on ILECs' unit costs required a downward adjustment to the KLEMS data set is wrong for two reasons. First, the FCC found conflicting evidence on the effect of declining utilization on ILECs' unit costs, and therefore was not required to accept the ILEC Petitioners' favored data. *Id.* at ¶¶ 226–30. If cost sharing was increasing productivity, as some evidence indicated, then the FCC reasonably declined to adjust the KLEMS data set downward. Second, contrary to the ILEC Petitioners' assertion, the FCC did take account of the declining utilization when selecting an X-factor within its proposed range. *Id.* at ¶¶ 233–36. While it may have been preferable for the FCC to adjust the proposed range of X-factors rather than the selection within the range, the FCC was not required to account for declining utilization at all. The FCC reasonably declined to adjust the KLEMS data set considering the limited and potentially unreliable data at hand.

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While the FCC's analysis regarding the X-factor was not a model of clarity, we conclude that the FCC was not arbitrary and capricious in declining to adjust the KLEMS data set in its selection of a new X-factor.

IV. Conclusion

We grant the CLEC Petitioners' petitions, in part, vacating the portions of the final rule affecting TDM transport services and remanding that issue alone to the FCC for further proceedings. We deny the petitions for review on all other issues.

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