PUBLIC NOTICE

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OFFICE OF ECONOMICS AND ANALYTICS SEEKS COMMENT ON THE STATE OF COMPETITION IN THE COMMUNICATIONS MARKETPLACE

GN Docket No. 22-203

Comments Due: July 1, 2022
Reply Comments Due: August 1, 2022

I. INTRODUCTION

In the last quarter of every even numbered year, the Commission must publish a *Communications Marketplace Report* that, among other things, "assess[es] the state of competition in the communications marketplace, including competition to deliver voice, video, audio, and data services among providers of telecommunications, providers of commercial mobile service (as defined in section 332 of the Communications Act of 1934, as amended (the Act)), multichannel video programming distributors (as defined in section 602), broadcast stations, providers of satellite communications, Internet service providers, and other providers of communications services."[1] In assessing the state of competition, the Commission must consider all forms of competition, including "the effect of intermodal competition, facilities-based competition, and competition from new and emergent communications services."[2] The Commission must also "assess whether laws, regulations, regulatory practices (whether those of the Federal Government, States, political subdivisions of States, Indian tribes or tribal organizations (as such terms are defined in section 4 of the Indian Self–Determination and Education Assistance Act (25 U.S.C. 5304)), or foreign governments), or demonstrated marketplace practices pose a barrier to competitive entry into the communications marketplace or to the competitive expansion of existing providers of communications service."[3]

The Commission adopted the first *Communications Marketplace Report* (*2018 Communications Marketplace Report*) on December 12, 2018, which reflects the state of the communications marketplace

[1] 47 U.S.C. § 163(a), (b)(1); *see also* Section 401 of the Repack Airwaves Yielding Better Access for Users of Modern Services Act of 2018 (RAY BAUM'S Act), Pub. L. No. 115-141, 132 Stat. 1087 (codified at 47 U.S.C. § 163) (RAY BAUM'S Act).

[2] 47 U.S.C. § 163(d)(1).

[3] 47 U.S.C. § 163(b)(3). In assessing the state of competition under subsection (b)(1) and regulatory barriers under subsection (b)(3) of the Act, the Commission must also "consider market entry barriers for entrepreneurs and other small businesses in the communications marketplace in accordance with the national policy under section 257(b)." 47 U.S.C. § 163(d)(3). The Commission must include the International Broadband Data Report required by section 103(b)(1) of the Broadband Data Improvement Act as part of the Communications Marketplace Report. *See* RAY BAUM'S Act of 2018 § 402(c), 132 Stat. at 1089; 47 U.S.C. § 163; 47 U.S.C. § 1303(b)(1).

primarily as of year-end 2017.[4] The Commission adopted the second *Communications Marketplace Report* (*2020 Communications Marketplace Report*) on December 31, 2020, which reflects the state of the communications marketplace primarily as of year-end 2019.[5]

This *Public Notice* seeks public input to inform the Commission's required assessment of the state of competition in the communications marketplace in its upcoming *Communications Marketplace Report* (*2022 Communications Marketplace Report*) to Congress. Specifically, we seek data, information, and comment on a wide range of issues relevant to the state of competition in the communications marketplace as a whole. We request that commenters submit information, data, and statistics for 2020 and 2021, as well as information on any notable trends and developments that have occurred during early 2022. Industry stakeholders, the public, and all other interested parties are encouraged to submit information, comments, and analyses. To facilitate analysis of competitive trends, parties should submit relevant current and historic data that are comparable over time.

II. COMPETITION AND DEPLOYMENT IN MOBILE WIRELESS SERVICES

Regarding the mobile wireless industry, we request comment and information that could be used to evaluate the state of competition and competitive dynamics within the marketplace for mobile wireless services. In addition to the three facilities-based nationwide mobile wireless service providers, the mobile wireless marketplace consists of numerous regional and local facilities-based providers,[6] mobile virtual network operators (MVNOs) that purchase mobile wireless services wholesale, infrastructure-based mobile virtual network operators (iMVNOs) that utilize the radio access networks of other facilities-based providers while supplying all other aspects of the mobile offering, cable providers that rely on a hybrid wholesale/hotspot arrangement to offer service, and mobile satellite providers that primarily focus on niche services, such as tracking services for aircraft and ships and operations in remote locations.

Comments and information are sought on industry data, competitive dynamics, and trending factors in the mobile wireless industry, including, but not limited to, factors that determine demand for mobile wireless services, the number of connections, pricing, spectrum holdings, network coverage, and the development of innovative technologies. We ask commenters to consider not only how these factors affect direct consumption of mobile wireless services, but also broader implications, such as the current and prospective impact of mobile wireless on the cost and means of doing business and on innovation in various industries. We also request comment on whether laws, regulations, regulatory practices, or demonstrated marketplace practices pose a barrier to competitive entry into the mobile wireless marketplace, or to the competitive expansion of existing providers. Further, we seek information on the extent to which any such laws, regulations, or marketplace practices affect entry conditions for entrepreneurs and other small businesses in the mobile wireless marketplace.

In August 2019, the Commission began a new process for collecting more granular data on the availability of fixed and mobile broadband service. The Broadband Data Collection (BDC) standardizes several of the mobile propagation map parameters that are not standardized in the FCC Form 477 data collection, such as minimum cell edge probabilities and cell loading factors, and maximum modeling resolution. Given the timeframe associated with this new data collection, as well as other factors, we seek comment on whether we can rely on the mobile BDC data for the *2022 Communications Marketplace*

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[4] *Communications Marketplace Report et al.*, GN Docket No. 18-231 et al., Report, 33 FCC Rcd 12558 (2018) (*2018 Communications Marketplace Report*).

[5] *Communications Marketplace Report*, GN Docket No. 20-60, 2020 Communications Marketplace Report, 36 FCC Rcd 2945 (2020) (*2020 Communications Marketplace Report*).

[6] In addition to the existing facilities-based providers, DISH is currently operating as an MVNO but has committed to deploy and utilize its own spectrum, systems, network infrastructure, and other facilities. *Order of Modification and Extension of Time to Construct*, WT Docket 18-197, Order, 35 FCC Rcd 9580, 9586-88, paras. 12-13 (WTB 2020).

Report.[7] Should we continue to use solely FCC Form 477 4G LTE coverage data for the upcoming Report, or are there alternative data sources on mobile coverage that we should consider? We also note that since the release of the *2020 Communications Marketplace Report*, service providers have continued to deploy 5G- NR,[8] and we seek comment on appropriate data sources to evaluate 5G coverage and deployment as well as the appropriate data sources to evaluate 4G LTE coverage and deployment.

Commenters are invited to submit data and information on, for example:

- Number of mobile wireless subscribers /connections and churn at the national level and by technology, speeds, and providers
- Trends in connectivity gaps in deployment, speed, and quality of mobile wireless broadband services across geographic areas (e.g., rural, urban, and Tribal) and demographics (e.g., by race and income levels)
- Trends in mobile data traffic and consumer data usage
- Price levels and trends as well as trends in service offerings
- Revenue metrics ─ including total revenue and average revenue per unit ─ for the industry as a whole and for individual providers
- Capital investment and technological upgrades
- Network quality, performance, and speeds of service
- Spectrum holdings, access to spectrum, spectrum usage, spectrum aggregation, and spectrum sharing, as well as considerations for future spectrum auctions with respect to spectrum aggregation
- Role of infrastructure in the mobile wireless marketplace, including any construction and/or deployment of wireless broadband infrastructure related to the Infrastructure Investment and Jobs Act[9]
- Extent of competition in the wireless infrastructure marketplace, including opportunities for new entrants and multi-vendor networks
- Measurements of mobile coverage, nationwide and disaggregated by urban areas, rural areas, and Tribal lands, including discussion of any methodological issues identified
- Innovation, such as adoption of Open RAN by providers, and 5G

[7] In August 2019, the Commission began a new process for collecting more granular data on the availability of fixed and mobile broadband service with the adoption of the *Digital Opportunity Data Collection Report and Order*. The first BDC collection, of data as of June 30, 2022, is due on September 1, 2022. The BDC system will include some automated validations to help ensure that data are submitted in the proper format and conform to the required specifications. *Establishing the Digital Opportunity Data Collection*, WC Docket No. 19-195, Order, DA-22-241 (WCB 2022). However, only after the coverage maps are published will the challenge and verification processes begin, which will further improve and refine the data. The mobile challenge process is an iterative process that will involve the submission of mobile speed-test data by consumers and other potential challengers, the creation of cognizable challenges, responses from affected service providers, and, ultimately, adjudication by FCC staff. Thus, it is unlikely that the BDC mobile coverage maps will incorporate substantial refinements resulting from the challenge process prior to the release of the *2022 Communications Marketplace Report. Establishing the Digital Opportunity Data Collection; Modernizing the FCC Form 477 Data Program*, WC Docket Nos. 19-195 and 11-10, Second Report and Order and Third Further Notice of Proposed Rulemaking, 35 FCC Rcd 7460, 7476-83, paras. 38-51 (2020) (*Digital Opportunity Data Collection Second R&O and Third Further Notice*). *Establishing the Digital Opportunity Data Collection; Modernizing the FCC Form 477 Data Program*, WC Docket Nos. 19-195, 11-10, Third Report and Order, 36 FCC Rcd 1126 (*Digital Opportunity Data Collection Third R&O*).

[8] *See, e.g.*, AT&T, *5G Network, 5G Plans & More–AT&T*, https://www.att.com/5g/consumer/ (last visited Feb. 25, 2022); T-Mobile, *Our Largest, Fastest, and Most Reliable 5G Network –T-Mobile and Sprint*, https://www.t-mobile.com/coverage/4g-lte-5g-networks (last visited Feb. 25, 2022); Verizon, *Verizon 5G Ultra Wideband: Up to 10x Faster Speeds. Check Availability*, https://www.verizon.com/5g/ (last visited Feb. 25, 2022).

[9] Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021).

- Number and types of mobile applications that have been launched and downloaded by consumers as well as innovations in the types of applications that are available as a result of 5G
- Mix and utilization of devices such as smartphones and wearables across the population
- Impact of innovation on device availability and usage, especially for individuals with disabilities and lower income individuals
- Role of entry conditions (federal, state, and/or local) in mobile wireless competition, including for entrepreneurs and other small businesses
- Recent entry into and exit from the marketplace
- Extent of competition between mobile and fixed (i.e., wireline, satellite, and fixed wireless) providers of voice, broadband, and video services
- Interaction of mobile wireless technology with other sectors of the economy, including how developments and needs in other sectors affect mobile wireless technology innovation
- Effects of the COVID-19 pandemic on the marketplace for mobile broadband services
- Status and trends of connectivity-related gaps (e.g., disparity in mobile broadband connectivity, homework gap, uneven access to healthcare services) across geographies, demographics and income levels, and the impact of the pandemic and government programs, including EBB, ACP, and ECF, on these gaps
- Effects of early termination fees on consumer contracts and the consumer's ability to switch providers

Further, since the release of the 2020 Communications Marketplace Report, the COVID-19 pandemic has altered the ways in which Americans interact with mobile services, and we seek comment on how this should be incorporated into our analysis. We request comment on the criteria or metrics that could be used to evaluate the impacts of the pandemic and the accessibility and affordability of wireless services.

III. COMPETITION AND DEPLOYMENT IN FIXED BROADBAND SERVICES

Consumers access fixed broadband services through a variety of technologies, including cable broadband service, DSL, fiber to the premise, terrestrial fixed wireless service, and satellite service. These services differ in their availability and in various characteristics such as price, speed, and latency.[10]

Regarding fixed broadband services (i.e., wireline, satellite, and terrestrial fixed wireless), we request comment on the criteria or metrics that could be used to evaluate the state of competition for those services and the state of broadband deployment. Comments and information also are sought on industry data, competitive dynamics, and trending factors in the provision of fixed broadband services. We request comment on the extent to which differences in service quality, e.g., latency, actual (as opposed to advertised) speeds received, consistency of speeds, and data allowances affect consumers' ability to use the services effectively, and whether these differences significantly affect competition.

We also request comment on whether laws, regulations, regulatory practices, or demonstrated marketplace practices pose a barrier to facilities-based competitive entry into the marketplace for the provision of fixed services, or to the competitive expansion of existing facilities-based service providers. Further, we seek information on the extent to which any such laws, regulations, or marketplace practices affect entry conditions for entrepreneurs and other small businesses in the provision of facilities-based fixed broadband services.[11]

Commenters are invited to submit data and information on, for example:

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[10] Latency refers to the time it takes for a data packet to travel back and forth through the network.

[11] *See* RAY BAUM'S Act of 2018 § 401.

- Number of fixed broadband subscribers/connections at the national level disaggregated by each of technology, speed, and service provider
- Trends in connectivity gap in deployment, speeds, and quality of fixed broadband services across geographic areas (e.g., rural, urban, and Tribal) and demographics (e.g., by race and income levels)
- Competition in the provision of fixed broadband services
- Extent of competition between fixed broadband providers that rely on different types of transmission technologies, such as fiber, cable, digital subscriber lines (DSL), fixed wireless, and satellite, and the degree to which consumers consider or treat their services as substitutes
- Whether we can evaluate competition between services by evaluating census-tract level take rates[12]
- Extent to which there are quality of service differences between technologies and that consumers consider these differences to be significant
- Factors that determine consumer demand for fixed broadband services and the number of fixed broadband subscribers
- Data caps and the provision and consumption of fixed broadband services
- Trends in data traffic and consumer data usage
- Price levels and affordability and trends as well as trends in service offerings
- Revenue metrics ─ including total revenue and average revenue per unit ─ for the industry as a whole and for individual providers
- Capital investment, innovation and technological upgrades
- Network quality and speeds of service, including latency
- Role of entry conditions (federal, state, and/or local) in fixed broadband services, including for entrepreneurs and other small businesses
- Recent entry into and exit from the marketplace
- Criteria, metrics or methodologies that might be used to evaluate potential competition between mobile wireless and fixed broadband services, including the extent to which these services are viewed by consumers as substitutes or complements
- Extent to which competition between fixed and mobile broadband services affects prices or service quality
- Extent to which survey data could help inform our evaluation of substitutability, including a discussion of reliable data sources
- Effects of the COVID-19 pandemic on the marketplace for fixed broadband services
- Status of competition among broadband providers in multiple tenant environments
- Effects of early termination fees on consumer contracts and the consumer's ability to switch providers
- Status and trends of connectivity-related gaps (e.g., disparity in fixed broadband connectivity, homework gap, uneven access to healthcare services) across geographies, demographics and income levels, and the impact of the pandemic and government programs, including EBB, ACP, and ECF, on these gaps

Further, what data sources should the Commission consider to evaluate competition or deployment of fixed services, including any potential deployment related to the Infrastructure Investment

[12] In the *Fourteenth Broadband Deployment Report*, for example, the Commission found that while the data appeared to show that terrestrial fixed wireless services were widely available, there was also a noticeably low subscription rate for fixed wireless services as compared to fixed terrestrial services. *Fourteenth Broadband Deployment Report*, 36 FCC Rcd at 851-52, para. 28. The Commission made the same observation for the deployment data for fixed satellite broadband service. *See id.* at 851, para. 27.

and Jobs Act?[13] In August 2019, the Commission began a new process for collecting more granular data on the availability of fixed and mobile broadband service.[14] The first BDC collection of data as of June 30, 2022 is due on September 1, 2022. Given the timeframe associated with this new data collection, as well as other factors, we seek comment on whether we can include the fixed BDC data in the 2022 *Communications Marketplace Report*. Should we continue to rely solely on FCC Form 477 coverage data for the upcoming Report, or are there alternative data sources on broadband coverage that we should consider?[15] We request comment on ways that we could improve our assessment of consumers' fixed broadband options in the local market using FCC Form 477 data. For example, we seek comment on whether we should exclude a filer's FCC Form 477 deployment data in census blocks where the filer reports no or de minimis residential subscribers in the corresponding census tract or the filer does not meet a de minimis take rate for their services. Commenters are invited to submit comments on, for example:

- Census-tract subscriber count or take rates that would be sufficiently low to raise a concern about a filer's deployment data
- Information that we could use to check a filer's deployment data in an area
- Alternative deployment data that we could use either in lieu of the FCC Form 477 data or as a supplement to those data

IV. VOICE

Regarding voice services, we request comment on the criteria or metrics that could be used to evaluate the state of competition in this marketplace. Comments and information also are sought on industry data, competitive dynamics, and trending factors in the provision of voice services. We also request comment on whether laws, regulations, regulatory practices, or demonstrated marketplace practices pose a barrier to facilities-based competitive entry into the marketplace for the provision of voice services. Further, we seek information on the extent to which any such laws, regulations, or marketplace practices affect entry conditions for entrepreneurs and other small businesses in the provision

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[13] We note that data reflecting deployment relating to the Infrastructure Investment and Jobs Act would have to be of a far later vintage than December 31, 2020.

[14] The Commission has relied exclusively on FCC Form 477 data in evaluating fixed broadband deployment since 2016. *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 15-191, 2016 Broadband Deployment Report, 31 FCC Rcd 699, 729, para. 73 (2016); *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 14-126, 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment, 30 FCC Rcd 1375, 1414, para. 69 (2015). In August 2019, the Commission began a new process for collecting more granular data on the availability of fixed and mobile broadband service. *Establishing the Digital Opportunity Data Collection; Modernizing the FCC Form 477 Data Program*, WC Docket Nos. 19-195 and 11-10, Report and Order and Second Further Notice of Proposed Rulemaking, 34 FCC Rcd 7505 (2019) (*Digital Opportunity Data Collection R&O and Second Further Notice)*; *see also Digital Opportunity Data Collection Second R&O and Third Further Notice*, 35 FCC Rcd at 7465; *Digital Opportunity Data Collection Third R&O*, 36 FCC Rcd at 1126. We note that this new collection of coverage data will likely not be used in the *2022 Communications Marketplace Report*. We anticipate, however, that we will analyze these data in addition to FCC Form 477 data for use in future reports.

[15] The Commission has recognized that FCC Form 477 broadband data may overstate fixed broadband services, especially in large or irregularly shaped census blocks. *See, e.g.*, *2020 Communications Marketplace Report*, 36 FCC Rcd at 2992, para. 69; *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 19-285, 2020 Broadband Deployment Report, 35 FCC Rcd 8986, 8998, para. 26 (2020) (*2020 Broadband Deployment Report*).

of voice services. We also request comment on the criteria, metrics, or methodologies that might be used to evaluate potential competition between mobile wireless and fixed voice services, including the extent to which these services are viewed by consumers as substitutes or complements. Finally, we seek information on the proportion of households that do not subscribe to either fixed or mobile voice, as well as the effect of cross-platform messaging applications.

V. VIDEO

We request comment on the issues and trends affecting competition in the market to deliver video programming services.[16] We plan to use an analytical framework similar to that employed in the *2020 Communications Marketplace Report*, which categorizes entities that deliver video services into three groups—multichannel video programming distributors (MVPDs), online video distributors (OVDs), and broadcast television stations.[17] MVPDs use wireline or satellite technologies to deliver video programming to consumers in the form of channel packages, which typically include linear channels from cable networks and retransmitted broadcast television stations, as well as video-on-demand (VOD) content.[18] OVDs deliver video content to consumers via the Internet using a variety of business models, including advertising-supported video offerings; subscription models that give access to an entire video library; transactional models where consumers pay for programming on a per-program basis; and virtual multichannel video programming services that deliver packages of streaming linear channels to subscribers in a fashion similar to traditional MVPDs.[19] Broadcast television stations offer linear video programming channels over-the-air to households that receive this programming using a television set connected to an antenna.[20]

We seek comment on both intragroup competition (i.e., competition within a group) and intergroup competition (i.e., competition between groups) in the video marketplace. Specifically, we seek information on the business models and competitive strategies employed by video service providers. We also request comment on whether laws, regulations, regulatory practices, or demonstrated marketplace practices pose a barrier to competitive entry into the video marketplace, or to the competitive expansion of existing providers. Further, we seek information on the extent to which any such laws, regulations, or marketplace practices affect entry conditions for entrepreneurs and other small businesses in the video marketplace.

Commenters are invited to provide data and information on, for example:

- Video service pricing
- Video service offerings and features (e.g., original or exclusive programming, number or frequency of ads shown, device compatibility)
- Trends in video subscription and usage patterns including household subscription to or usage of multiple video services
- Vertical integration of programming ownership and distribution and any implications for competition and programming diversity
- Technological developments (e.g., deployment of ATSC 3.0 service)
- Provision of video programming accessible to people with disabilities

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[16] Video programming is defined as: "Programming provided by, or generally considered comparable to programming provided by, a television broadcast station that is distributed and is exhibited for residential use." 47 U.S.C. § 522(20); *see also* 47 CFR § 76.6(ff).

[17] *2020 Communications Marketplace Report*, 36 FCC Rcd at 3047, para. 150.

[18] *2020 Communications Marketplace Report*, 36 FCC Rcd at 3047, para. 151.

[19] *2020 Communications Marketplace Report*, 36 FCC Rcd at 3048, para. 152.

[20] *2020 Communications Marketplace Report*, 36 FCC Rcd at 3048, para. 153.

- Provision of diverse video programming
- Recent entry into and exit from the marketplace
- Effects of the COVID-19 pandemic on the marketplace for video services
- Status of competition among video providers in multiple tenant environments
- Effects of early termination fees on consumer contracts and the consumer's ability to switch providers
- Operating and financial statistics including subscriptions, subscription revenue, advertising revenue, retransmission consent fee revenue, and any other sources of revenue
- Data and comment that will help the Commission analyze how the ongoing evolution in the video programming market affects competition in the related market for set-top boxes and devices, including how it affects the extent to which consumer choice for devices to access MVPD content remains a relevant aspect of the competitive environment

VI. AUDIO

We request comment on the criteria or metrics that could be used to evaluate the state of competition in the audio programming marketplace. We plan to use an analytical framework similar to that employed in the *2020 Communications Marketplace Report*, which categorizes entities that deliver audio programming into three groups— terrestrial broadcast radio stations, satellite radio, and online audio providers.[21] We seek comment on using this approach. Terrestrial radio broadcasters use terrestrial radio stations licensed by the Commission to broadcast audio content over the air to consumers, who use radios to receive the stations' programming.[22] Satellite radio uses satellite technology to offer subscription-based audio programming to consumers.[23] Online audio providers use the Internet to deliver a variety of audio services to listeners including linear audio channels and access to music libraries and podcasts.[24]

We seek comment on both intragroup competition (i.e., competition within a group) and intergroup competition (i.e., competition between groups) in the audio marketplace. Specifically, we seek comment and information on industry data, competitive dynamics, and trending factors. We also request comment on whether laws, regulations, regulatory practices, or demonstrated marketplace practices pose a barrier to competitive entry into the audio marketplace, or to the competitive expansion of existing providers. Further, information is sought on the extent to which any such laws, regulations, or marketplace practices affect entry conditions for entrepreneurs and other small businesses in the audio marketplace.

Commenters are invited to submit data and information related to participants in the marketplace for the delivery of audio programming, including, but not limited to, terrestrial radio broadcasters (i.e., AM and FM radio stations), satellite radio providers, and entities that provide audio programming over the Internet and to mobile devices on, for example:

- Industry participants in the provision of audio programming services
- Trends in service offerings, pricing, and consumer behavior
- Provision of audio programming accessible to people with disabilities
- Provision of diverse audio programming
- Ratings, subscribership, and revenue information, for the marketplace as a whole and for individual industry participants

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[21] *2020 Communications Marketplace Report*, 36 FCC Rcd at 3086, para. 240.

[22] *2020 Communications Marketplace Report*, 36 FCC Rcd at 3087, para. 242.

[23] *2020 Communications Marketplace Report*, 36 FCC Rcd at 3087, para. 243.

[24] *2020 Communications Marketplace Report*, 36 FCC Rcd at 3087, para. 244.

- Effects of the COVID-19 pandemic on the marketplace for audio programming services
- Capital investment, innovation, and the deployment of advanced technology
- Requirements for entry into the marketplace
- Recent entry into and exit from the marketplace

VII. SATELLITE COMMUNICATIONS SERVICES

Satellite communications services constitute a technology sector that participates in multiple marketplaces. Satellites function as relay stations in space that receive signals from an earth station and then re-transmit the signal to a distant point located often thousands of miles from the point of signal origination.[25] In broad terms, satellites operate in either a geostationary (GSO) or non-geostationary (NGSO) orbit.[26] In recent years, the Commission has received an unprecedented number of applications for non-geostationary satellite orbit (NGSO) space station licenses, including for NGSO FSS systems.[27] Traveling closer to the Earth than a traditional GSO satellite, low- and medium-orbit NGSO FSS satellite constellations are capable of providing broadband services to industry, enterprise, and residential customers with lower latency and faster speeds than was previously available via satellite.[28] The Commission has also received, and granted, a number of applications from GSO operators proposing the next generation of very high throughput satellites. These satellites are also capable of providing broadband to enterprise, industry, and residential customers at much faster speeds than the traditional GSO satellites.

Satellite communications services may be provided in several ways based on the specific business context and objective. We seek data, information, and comment on the delivery of voice, video, audio, and data services by providers of satellite communications, particularly services that may not be encompassed by the remaining product markets discussed in this notice. We request comment on the criteria or metrics that could be used for analysis of competition among satellite communications providers, as well as comment and information on industry data, competitive dynamics, and trending factors.

Commenters are invited to submit data and information on, for example:

- Retail and wholesale communications services that are provided by satellite communications providers
- Identification of satellite communications providers and description of the communications services
- Types of buyers of satellite communications services
- Requirements for entry into the marketplace and significant barriers to such entry
- Recent and prospective entry into and exit from the marketplace
- Orbital and spectrum resources, access to spectrum, spectrum usage, and spectrum aggregation
- Price levels as well as trends in service offerings, pricing, and consumer behavior
- Investment, subscribership, and financial indicators (such as revenues or profitability)
- Network quality and speeds of service

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[25] An earth station is a station located either on the Earth's surface or within the major portion of the Earth's atmosphere and intended for communication: (1) with one or more space stations; or (2) with one or more stations of the same kind by means of one or more reflecting satellites or other objects in space. 47 CFR § 25.103 (*Earth station*).

[26] *2018 Communications Marketplace Report*, 33 FCC Rcd at 12670, para. 209.

[27] *Revising Spectrum Sharing Rules for Non-Geostationary Orbit, Fixed-Satellite Service Systems et al.*, IB Docket No. 21-456, et al., Order and Notice of Proposed Rulemaking, FCC 21-123, at 2 (Dec. 15, 2021).

[28] *Id.*

- Innovation in the market
- Extent of competition as it relates to satellite communications, including the effects of intermodal competition with other fixed or mobile providers of communications services
- Impact of entry by NGSO FSS low-earth orbit licensees and market access grantees, as well as the new high-capacity GSO throughput satellites, on competition and broadband deployment, including prospective effects on Universal Service Fund programs and efforts to bridge the connectivity gap

VIII. INTERNATIONAL BROADBAND DATA

As part of its assessment in the *Communications Marketplace Report*, the Commission must by statute include "information comparing the extent of broadband service capability (including data transmission speeds and price for broadband service capability) in a total of 75 communities in at least 25 countries abroad for each of the data rate benchmarks for broadband service utilized by the Commission to reflect different speed tiers."[29] The Commission must choose international communities comparable to various communities in the United States with respect to population size, population density, topography, and demographic profile.[30] The Commission is required to include a "geographically diverse selection of countries" and "communities including the capital cities of such countries."[31] The Commission must "identify relevant similarities and differences in each community, including their market structures, the number of competitors, the number of facilities-based providers, the types of technologies deployed by such providers, the applications and services those technologies enable, the regulatory model under which broadband service capability is provided, the types of applications and services used, business and residential use of such services, and other media available to consumers."[32]

We seek data, information, and comment on comparative international information on broadband services that can inform this assessment. Commenters are invited to submit data and information on, for example:

- International fixed and mobile broadband quality of service
- International fixed and mobile broadband pricing
- International fixed and mobile broadband deployment by technology
- Additional comparison countries beyond the Organization for Economic Cooperation and Development (OECD) countries
- Alternative quality of mobile broadband service (e.g. download speed, upload speed, latency, etc.) datasets that should be considered for analysis
- Fixed and mobile broadband deployment data for non-European OECD countries, which may be comparable to FCC Form 477 data for the U.S. and the European Commission's coverage data for the European Union (E.U.)[33]
- Alternative fixed and mobile broadband pricing datasets that we should consider for analysis

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[29] 47 U.S.C. § 1303(b)(1). The Broadband Data Improvement Act, Pub. L. No. 110-385, 122 Stat. 4096 (2008), is codified in Title 47, Chapter 12 of the United States Code. 47 U.S.C. § 1301 et seq.

[30] *Id.* § 1303(b)(2).

[31] *Id.*

[32] *Id.* § 1303(b)(3).

[33] The previous report included European coverage data based on the *2019 Broadband Coverage in Europe Report*, which discusses the 28 member countries of the E.U., as well as Iceland, Norway, and Switzerland. European Commission, Broadband Coverage in Europe 2019 (Sept. 4, 2020), https://op.europa.eu/en/publication-detail/-/publication/077cc151-f0b3-11ea-991b-01aa75ed71a1 (*2019 Broadband Coverage in Europe Report*).

- Alternative methodologies used to compare data transmission speeds and prices for broadband service across communities and countries

IX. OTHER ISSUES

As part of the Commission's continuing effort to advance digital equity for all,[34] including people of color, persons with disabilities, persons who live in rural areas or Tribal lands, and others who are or have been historically underserved, marginalized, or adversely affected by persistent poverty or inequality, we invite comment on any issues of diversity, equity,[35] inclusion, and accessibility in the communications marketplace.

X. PROCEDURAL MATTERS

Pursuant to sections 1.415(d) and 1.419 of the Commission's rules,[36] interested parties may file comments on or before July 1, 2022, and reply comments on or before August 1, 2022, in GN Docket No. 22-203. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies.[37] We strongly encourage interested parties to file comments electronically.

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: http://www.fcc.gov/ecfs/.

- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing.

  Filings can be sent by commercial overnight courier or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

  - Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.

  - U.S. Postal Service first-class, Express, and Priority mail must be addressed to 45 L Street NE, Washington, DC 20554.

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[34] Section 1 of the Communications Act of 1934, as amended, provides that the Commission "regulat[es] interstate and foreign commerce in communication by wire and radio so as to make [such service] available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex." 47 U.S.C. § 151.

[35] The term "equity" is used here consistent with Executive Order 13985 as the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. *See* Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, Exec. Order No. 13985, 86 Fed. Reg. 7009 (Jan. 20, 2021).

[36] 47 CFR §§ 1.415(d), 1.419.

[37] *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 24121 (1998).

- Until further notice, the Commission no longer accepts any hand or messenger delivered filings. This is a temporary measure taken to help protect the health and safety of individuals, and to mitigate the transmission of COVID-19.[38]

People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

For further information, contact Kate Matraves, Economic Analysis Division, Office of Economics and Analytics, (202) 391-6272 or Catherine.Matraves@fcc.gov, or Judith Dempsey, Economic Analysis Division, Office of Economics and Analytics, (202) 418-1861 or Judith.Dempsey@fcc.gov.

[38] *See FCC Announces Closure of FCC Headquarters Open Window and Change in Hand-Delivery Policy*, Public Notice, 35 FCC Rcd 2788 (OMD 2020), www.fcc.gov/document/fcc-closes-headquarters-open-window-and-changes-hand-delivery-policy.