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**The Communications Market at 2020:
The Competitiveness of Video, Mobile, and Fixed Broadband**

by

Seth L. Cooper *

Introduction and Summary

From the view at early 2020, the digital communications market is robust and dynamic, with American consumers benefitting from next-generation technology deployments, new service offerings, and competitive prices. Collection and examination of available data indicates that, over the last two years, competitive conditions across video, mobile, satellite, and other digital communications service sectors have remained strong and, in many instances, even improved.

To ensure these positive trends in market competition – and the accompanying investment and innovation – continue beyond 2020, the FCC should take bold action to promptly make additional spectrum resources available for commercial use, particularly in the mid- and lower-mid bands. The Commission also should complete several reform initiatives to reduce costly and unnecessary regulatory barriers to new infrastructure investment and deployment.

The FCC's *Communications Marketplace Report* (2018) collected a multiplicity of data points spanning the communications market through the end of 2017. The next iteration of the Commission's consolidated report is still about a year away. This *Perspectives* paper draws on

available reports by industry, market analysts, and government agencies to present an updated overview of the communications market in 2018 and 2019.

In 2018 and 2019 new services were launched in video, mobile, and other sectors. Overall competitive conditions remained equally strong or improved compared to the time period covered in the *Communications Marketplace Report*. Infrastructure upgrades, including ongoing 5G and gigabit network deployments, are benefitting consumers with new or improved capabilities as well as better pricing options. According to reports:

- **Improved Access to Fixed Broadband Services.** As of the third quarter of 2019, 94.4% of the U.S. population had access to wired broadband services offering download speeds of at least 25 Mbps. As of that date, 90.7% of the population had access to wired broadband services with download speeds of at least 100 Mbps, and about 84.9% had access to broadband services offering at least 250 Mbps.
- **Increased Fixed Broadband Speeds.** As of the middle of 2018, average U.S. fixed broadband upload/download speeds increased to 96.25 Mbps/32.88 Mbps, and by December 2019 they increased to 130.79 Mbps/49.53 Mbps.
- **4G LTE Adoption and Competition.** In June 2019, the U.S. grew to 130% LTE market penetration (or 1.3 LTE subscriptions per person based on population). And 4G network availability among the four nationwide mobile service providers increased during 2019.
- **Increased Mobile Broadband Speeds.** As of the middle of 2018, average U.S. mobile upload/download speeds increased to 27.33 Mbps/8.63 Mbps and by December 2019 they increased to 41 Mbps/11.79 Mbps.
- **Additional Mobile Broadband Competition.** At end of 2019, Xfinity Mobile had signed up nearly 2.1 million wireless subscribers, and Charter's Spectrum Mobile had 794,000 subscribers as of the third quarter of 2019. MVNO Tracfone had 21.2 million subscribers at the end of the third quarter of 2019.
- **Mobile Demand Rose Sharply.** U.S. mobile data traffic rose from 15.7 trillion megabits (MB) in 2017 to 28.58 trillion MB in 2018, an 82.2% increase. Between 2017 and 2018, smartphones in use rose from 273.2 million to 284.7 million. Combined messaging traffic increased from 1.8 trillion to 2 trillion messages.
- **Strong Indicators of Declining Mobile Prices.** Although the Consumer Price Index (CPI) for all items went up in 2018 and 2019, the CPI for wireless telephone services declined 3.2% from December 2017 to December 2018. The next year it declined 0.3%. Average revenue per user declined 2.1% in 2018.
- **Continued Wireless Infrastructure Deployment.** Cell sites in operation increased from 323,448 in 2017 to 349,344 in 2018, an increase of about 8%.

- **MVPD Competition Continued.** Practically all U.S. consumers have access to at least three competing multi-channel video programming distributors (MVPDs). But MVPD subscriptions declined in 2018 and 2019. By the third quarter of 2019, combined MVPD subscriptions declined to about 85 million. Cable had a 54.4% market share compared to 31% for DBS, 10.1% for "telco" MVPDs, and virtual MVPDs grew to 3.8 million subscriptions or 0.5%.
- **Increased Competition from Online Video Distributors (OVDs).** By the end of 2019, Netflix grew to 60.4 million U.S. subscribers, Hulu surpassed 28 million, and Apple TV+ signed up 33 million. Disney Plus signed up 24 million in November 2019 alone. And at the end of 2018, Amazon Video subscribers grew to 50.23 million.
- **Increased Competition from Broadcast TV.** As of May 2018, more than 14% of all TV households – or 16 million homes – had “over-the-air” (OTA) TV status. TV viewing households that rely on OTA broadcast TV is much higher in a number of large cities. About 59% of OTA homes subscribe to an OVD service.
- **Estimates Indicate Increased Investment.** U.S. broadband providers invested about \$75 billion in 2018, up from about \$72 billion the year before. Wireless industry capital expenditures for 2018 rose to \$27.4 billion, a 6.5% increase.

Analysts project significant gains for consumers in 2020 and beyond, as 5G networks and handsets with 5G capabilities increasingly are available. Fixed wireless capabilities will continue improving and support residential broadband services. Cable broadband providers are designing DOCSIS 4.0 as part of their 10G platform initiative. Wi-Fi 6, now in initial stages of deployment, will improve capacity and reliability. And ultra-fast satellite broadband services are on the horizon, including HughesNet's next-generation satellite launch in 2021.

To continue to provide an environment hospitable to the communications market's growth and vitality beyond 2020, the FCC should take the following steps make more spectrum available and remove legacy regulations:

- Ensure that the auctioning of C-Band spectrum is as speedy as reasonably possible by adopting a plan that offers adequate payments to current C-Band spectrum users to incentivize timely cooperation and coordination with prospective winning bidders.
- Make a prompt decision on Ligado Networks' long-pending modified applications to build a hybrid satellite-terrestrial wireless network for operations in unused L-band spectrum.
- Promptly repurpose at least 45 MHz in the 5.9 GHz band for unlicensed Wi-Fi use, which will boost Wi-Fi offloading and free up spectrum for 5G and other next-gen services.
- Clarify aspects of Section 6409(a) of the Spectrum Act regarding non-substantial modifications to clear away local barriers to wireless infrastructure upgrades.

- Update the Over-the-Air Reception Device (OTARD) rule to include hub and relay antennas for fixed wireless signals, prohibiting local restrictions on use of such equipment.
- Eliminate old "unbundling" regulation that was rendered unnecessary by market competition but that still inhibit next-generation network deployment.

By speedily repurposing spectrum, streamlining network infrastructure siting rules, and removing legacy regulations, the FCC can help bolster the innovative and competitive state of the communications marketplace to the benefit of U.S. consumers.

Reporting on the State of the Communications Marketplace

In a February 2019 *Perspectives from FSF Scholars* paper,¹ I reviewed the FCC's *Communications Marketplace Report* (2018).² The report was the first by the Commission to encompass video, mobile, satellite, and other digital communications services, including broadband services. It collected a multiplicity of data points spanning several communications service sectors with a primary focus on developments occurring in 2017. As I explained in my *Perspectives* paper, the report demonstrated the innovative and competitive state of the communications marketplace.

Congress requires future Communications Marketplace Reports to be prepared on a biennial basis.³ The next iteration of the FCC's consolidated report is about a year away. This *Perspectives* paper draws on publicly available reports by industry, market analysts, and government agencies and offers an updated overview of the state of digital communications services in 2018 and 2019.

Available data shows that, in 2018 and 2019, new services were launched in video, mobile, and other digital communications market sectors. Network infrastructure deployments and upgrades benefitted consumers with new or improved capabilities as well as better pricing options. And overall competitive conditions across video, mobile, satellite, and other digital communications service sectors remained equally strong or even improved since 2017 – the time period that was the primary focus of the Commission's *Communications Marketplace Report*.

¹ See Seth L. Cooper, "FCC Report Indicates a Competitive Communications Marketplace: Future Reports Should Make Cross-Platform Substitution Findings," *Perspectives from FSF Scholars*, Vol. 14, No. 6 (Feb. 26, 2019), at: <https://freestatefoundation.org/wp-content/uploads/2019/10/FCC-Report-Indicates-a-Competitive-Communications-Marketplace-Future-Reports-Should-Make-Cross-Platform-Substitution-Findings-022619.pdf>.

² FCC, Communications Marketplace Report, GN Docket No. 18-231, et al. (rel. Dec. 26, 2018).

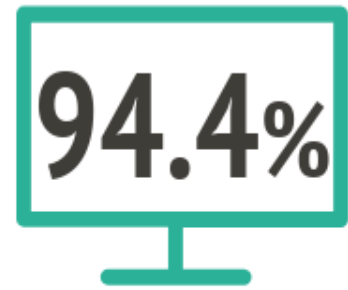
³ See 47 U.S.C. § 163.

Indicators of Competitiveness and Innovation in the Communications Market

Improved Access to Fixed Broadband Services. According to a research report by BroadbandNow, as of the third quarter of 2019, 94.4% of the U.S. population had access to wired broadband services offering download speeds of at least 25 Mbps.⁴ As of that same date, 90.7% of the population had access to wired broadband services with download speeds of at least 100 Mbps, and about 84.9% had access to broadband services offering at least 250 Mbps. Those figures do not include satellite broadband providers ViaSat and HughesNet, which offer advertised speeds of at least 25 Mbps/3 Mbps to nearly all Americans.

Increased Fixed Broadband Speeds. Ookla found that average U.S. fixed broadband upload/download speeds increased to 96.25 Mbps/32.88 Mbps by the middle of 2018.⁵ And by December 2019 they further increased to 130.79 Mbps/49.53 Mbps.⁶

4G LTE Adoption and Competition. 5G America's reported that in June 2019, the U.S. grew to 130% LTE market penetration (or 1.3 LTE subscriptions per person).⁷ And as of the second quarter of 2019, LTE total connections in North America totaled 459 million, representing 88% of all mobile connections in North America. That figure was up from 82% a year before. Additionally, Opensignal's survey of mobile wireless subscribers found that 4G network availability among the four nationwide mobile service providers increased during 2019.⁸ That is, subscribers of the four major nationwide providers experienced incrementally larger percentages of time on their providers' 4G networks than in the months or years prior. As of July 2019, Opensignal found 4G availability for Verizon at 94.8%, T-Mobile at 94.2%, AT&T at 89.6%, and Sprint at 89.5%.

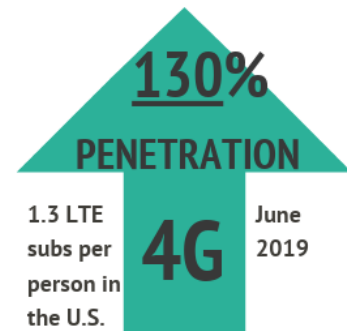


AMERICANS WITH ACCESS
TO FIXED BROADBAND:
25 Mbps DOWNLOAD



130.8 Mbps/49.5 Mbps

AVG FIXED BROADBAND SPEEDS AT THE END OF 2019



⁴ Julia Tanberk, "The State of Broadband in America, Q3 2019" BroadbandNow (Oct. 2019), at: <https://broadbandnow.com/research/q3-broadband-report-2019>.

⁵ Ookla, Speedtest: Report: United States: Fixed (December 12, 2018), at <https://www.speedtest.net/reports/united-states/2018/#fixed>.

⁶ Ookla, "Speedtest Global Index" (United States) (Dec. 2019) at: <https://www.speedtest.net/global-index/united-states#fixed> (last checked Jan. 22, 2020).

⁷ 5G Americas, "5G Network Rollouts Accelerate as LTE's Long Tail Extends" (Sept. 19, 2019), at: <https://www.5gamericas.org/5g-network-rollouts-accelerate-as-ltes-long-tail-extends/>.

⁸ Opensignal, "USA Mobile Network Experience Report July 2019," (Jul. 2019), at: <https://www.opensignal.com/reports/2019/07/usa/mobile-network-experience>.

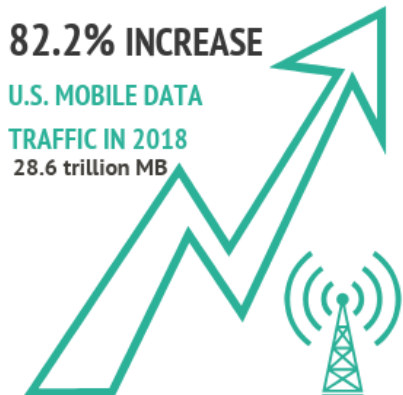
41 Mbps/11.79 Mbps

AVG MOBILE BROADBAND SPEEDS
AT THE END OF 2019



Increased Mobile Broadband Speeds. Ookla found that average U.S. mobile upload/download speeds increased to 27.33 Mbps/8.63 Mbps by the middle of 2018.⁹ And mobile broadband speeds increased to 41 Mbps/11.79 Mbps as of December 2019.¹⁰

Additional Mobile Broadband Competition. In addition to competing nationwide mobile service providers, U.S. consumers have a choice among other providers, including multi-regional providers, such as U.S. Cellular and C Spire, as well as smaller local providers. Additionally, a growing number have subscribed to mobile wireless services offered by "cable" mobile virtual network operators (MVNOs) that combine Wi-Fi network technologies with leased spectrum. At the end of 2018, Xfinity Mobile had signed up 1.2 million wireless subscribers,¹¹ and by the end of 2019 it had almost 2.1 million.¹² Also, at the end of 2018, Charter's Spectrum Mobile had 134,000 subscribers,¹³ and as of the third quarter of 2019 it had 794,000 subscribers.¹⁴ Furthermore, MVNO Tracfone had 21.2 million subscribers at the end of the third quarter of 2019.¹⁵



Mobile Demand Rose Sharply. The wireless industry reported that U.S. mobile data traffic increased from 15.7 trillion megabits (MB) in 2017 to 28.58 trillion MB in 2018, an annual increase of 82.2%.¹⁶ Between 2017 and 2018, the number of smartphones in use rose from 273.2 million to 284.7 million.¹⁷ According to a 2019 survey by Leichtman Research Group (LRG), 81% of adults access the Internet on a smartphone, up from 63% in 2014.¹⁸ Also, interest in media and text messaging remains strong, as combined messaging traffic increased from 1.8 trillion in 2017 to 2 trillion messages in 2018.¹⁹ A survey released in December 2019 by

⁹ Ookla, Speedtest: Report: United States: Mobile (July 18, 2018), at <https://www.speedtest.net/reports/united-states/2018/#mobile>.

¹⁰ Ookla, "Speedtest Global Index" (United States) (December 2019) at: <https://www.speedtest.net/global-index/united-states#mobile> (last checked Jan. 22, 2020).

¹¹ Comcast, Press Release: "Comcast Reports 4th Quarter and Full Year 2018 Results" (Jan. 23, 2019), at: <https://www.cmcsa.com/news-releases/news-release-details/comcast-reports-4th-quarter-and-full-year-2018-results>.

¹² Comcast, Press Release: "Comcast Reports 4th Quarter and Full Year 2019 Results" (Jan. 23, 2020), at: <https://www.cmcsa.com/news-releases/news-release-details/comcast-reports-4th-quarter-and-full-year-2019-results>.

¹³ Charter Communications, Press Release: "Charter Announces Fourth Quarter 2018 Results (Jan. 31, 2019), at: <https://ir.charter.com/news-releases/news-release-details/charter-announces-fourth-quarter-2018-results>.

¹⁴ Charter Communications, Press Release: "Charter Announces Third Quarter 2019 Results (Oct 25, 2019), at: <https://ir.charter.com/static-files/76cf320f-4610-448b-9768-c1a27f2d2c2e>.

¹⁵ America Movil, "America Movil's third quarter of 2019 financial and operating report" (Oct. 15, 2019), at: https://s22.q4cdn.com/604986553/files/doc_financials/quarterly/2019/Q3/3Q19.pdf.

¹⁶ CTIA, 2019 Annual Survey Highlights (June 2019), available at: <https://api.ctia.org/wp-content/uploads/2019/06/2019-Annual-Survey-Highlights-FINAL.pdf>.

¹⁷ CTIA, 2019 Annual Survey Highlights.

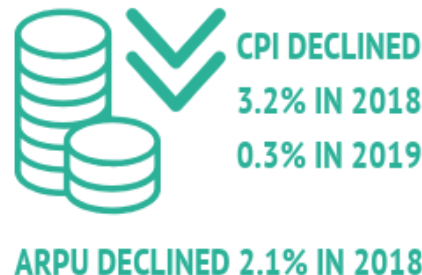
¹⁸ Leichtman Research Group, Inc. (LRG), Press Release: "85% of U.S. Households Get an Internet Service at Home" (Dec. 23, 2019), at <https://www.leichtmanresearch.com/85-of-u-s-households-get-an-internet-service-at-home/>.

¹⁹ CTIA, 2019 Annual Survey Highlights.

ZipWhip found that whereas 70% of U.S. respondents receive spam communications "often" via email and 51% receive spam voice calls "often," only 18% said they receive spam texts "often."²⁰

Strong Indicators of Declining Mobile Prices. According to the Bureau of Labor Statistics, while the Consumer Price Index (CPI) for all items went up 1.9% in 2018 and also went up 2.3% in 2019,²¹ the CPI for wireless telephone services declined about 3.2% from December 2017 to December 2018.²² From December 2018 to December 2019, the CPI for wireless telephone services declined about 0.3%.²³ Additionally, the wireless industry reported declining average revenue per user in 2018, down about 2.1% from 2017.²⁴

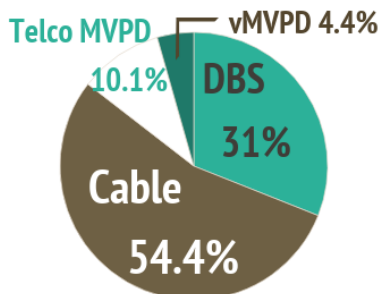
Mobile Wireless Prices



Growing Percentage of Wireless-Only Households. The National Center for Health Statistics' survey data indicates 57.1% of U.S. households were wireless-only as of the second half of 2018.²⁵ And 76.5% of adults between 25 and 34 lived in wireless-only homes. And according to an early 2019 survey by Pew Research Center, 17% of U.S. adults are "smartphone-only Internet users," a share that has doubled since 2013.²⁶ About one fourth of lower-income adults are "smartphone-only" Internet users.

MVPD COMPETITION

Market Share 3Q 2019



Continued Wireless Infrastructure Deployment. CTIA reported that the number of cell sites in operation increased from 323,448 in 2017 to 349,344 in 2018, an increase of about 8%.²⁷

MVPD Competition Continued. In 2018 and 2019, all or nearly all U.S. consumers had access to three competing multi-channel video programming distributors (MVPDs), including one cable provider and two nationwide direct broadcast satellite (DBS) providers. And some consumers had access to four MVPDs. However, MVPD subscriptions declined both years. By the end of the third quarter of 2019, combined cable, DBS, and "telco" MVPD subscriptions declined according to LRG.²⁸ Combined MVPD

²⁰ See Carlene Reyes, "New Zipwhip Survey Reveals Consumers Rarely Receive Spam or Scam Attempts Over Text Message," (Dec. 17, 2019), at: https://www.zipwhip.com/blog/zipwhip-spam-and-scam-survey/?utm_source=press_release&utm_medium=referral&utm_campaign=spamsurvey.

²¹ All CPI figures were taken from BLS databases: Bureau of Labor Statistics, <http://www.bls.gov>.

²² *Id.*

²³ *Id.*

²⁴ CTIA, 2019 Annual Survey Highlights.

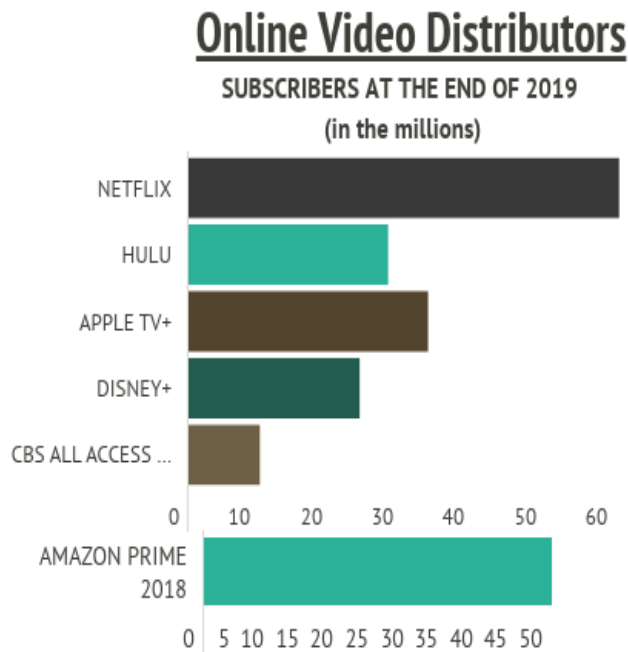
²⁵ Stephen J. Blumberg and Julian V. Lake, "Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July-December 2018," Division of Health Interview Statistics, National Center for Health Statistics (released Jun. 2019), at: <https://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201906.pdf>.

²⁶ Monica Anderson, "Mobile Technology and Home Broadband 2019" Pew Research Center (June 13, 2019), at: <https://www.pewresearch.org/internet/2019/06/13/mobile-technology-and-home-broadband-2019/>.

²⁷ CTIA, 2019 Annual Survey Highlights.

²⁸ LRG, Press Release: "Major Pay-TV Providers Lost About 1,740,000 Subscribers in 3Q 2019," (Nov. 13, 2019), at: <https://www.leichtmanresearch.com/major-pay-tv-providers-lost-about-1740000-subscribers-in-3q-2019/>.

subscription losses during the second and third quarters of 2019 totaled 1,865,000. Cable had a 54.4% market share compared to 31% for DBS, 10.1% for "telco" MVPDs. MVPD subscriber losses were partially offset by increases in subscriptions to Internet-delivered virtual MVPD (vMVPD) services such as Sling TV and AT&T Now that deliver content via Internet connections. Subscriptions for vMVPDs grew to 3.8 million or an MVPD market share of 4.4%.



Increased Competition from Online Video Distributors (OVDs). At the end of 2018, Netflix grew to 58.5 million U.S. subscribers,²⁹ and by year's end 2019, it had 60.4 million.³⁰ Hulu grew to 25 million subscribers by 2018,³¹ and it surpassed 28 million in 2019.³² Apple TV+ launched in 2019, and by year's end signed 33.6 million subscribers.³³ Disney Plus, also a new entrant last year, signed up 24 million subscribers in November 2019 alone.³⁴ Also, by the end of 2019, CBS All Access and Showtime's streaming services reached 10 million subscribers combined.³⁵ Although Amazon does not regularly provide video subscriber numbers, it was reported that Amazon Video had 50.23 video subscribers at the end of 2018, up from 44.9 million from the year before.³⁶

²⁹ Michael Liedtke, "Netflix's solid 4Q eclipsed by projected slowing US growth," ABC News (Jan. 17, 2019), at: <https://abcnews.go.com/Business/wireStory/netflixs-solid-4q-eclipsed-projected-slowing-us-growth-60453971>.

³⁰ Matthew Heller, "Netflix Subscriber Growth in U.S. Misses Forecast," *CFO* (Jan. 22, 2020), at: <https://www.cfo.com/financial-performance/2020/01/netflix-subscriber-growth-in-u-s-misses-forecast/>.

³¹ Hulu, Press Release: "Hulu Tops 25 Million Total Subscribers in 2018" (Jan. 8, 2019), at: <https://www.hulu.com/press/hulu-tops-25-million-total-subscribers-in-2018/>.

³² Todd Spangler, "Hulu Zooms to 28 Million Total Subscribers, Up 12% So Far in 2019," *Variety* (May 1, 2019): <https://variety.com/2019/digital/news/hulu-28-million-total-subscribers-newfronts-2019-1203202212/>.

³³ Todd Spangler, "Apple TV Plus May Have More Than 33 Million Users But 'Vast Majority' Aren't Paying for It, Researcher Says," *Variety.com* (Jan. 24, 2020), at: <https://variety.com/2020/digital/news/apple-tv-plus-33-million-users-free-year-subscribers-1203478683/>.

³⁴ Todd Spangler, "Disney Plus Signed Up 24 Million U.S. Subscribers in November and Took Bite Out of Netflix, Analysts Estimate," *Variety* (Dec. 18, 2019), at: <https://variety.com/2019/tv/news/disney-plus-24-million-us-subscribers-netflix-q4-churn-1203447210/>.

³⁵ Elaine Low, "CBS All Access, Showtime OTT Reach 10 Million Collective Subscribers," *Variety* (Jan. 12, 2020), at: <https://variety.com/2020/tv/news/cbs-all-access-showtime-10-million-subscribers-tca-1203464443/>.

³⁶ Stephen Lovely, "The Streaming Services With the Most Subscribers -- and How They Got Here," *The Motley Fool* (Nov. 9, 2018), at: <https://www.fool.com/investing/2018/11/09/the-streaming-services-with-the-most-subscribers-a.aspx>.

Increased Competition from Broadcast TV. Over the last several years, the number of households that rely on "over-the-air" (OTA) broadcast TV has continued to rise. Nielsen reported that as of May 2018, more than 14% of all TV households – or 16 million homes – had OTA TV status.³⁷ The percentage of TV viewing households that rely on OTA broadcast TV is particularly high in a number of large cities, reaching about 25% in Phoenix and 23% in Dallas.³⁸ Also, about 59% of OTA homes subscribe to an OVD service.³⁹



Estimates Indicate Increased Investment. According to USTelecom, U.S. broadband providers invested about \$75 billion in 2018, up from about \$72 billion the year before.⁴⁰ And the wireless industry reported that capital expenditures for 2018 rose to \$27,408,097, a 6.5% increase over the year before.⁴¹

Technological Innovation Will Benefit Consumers in 2020 and Beyond

Market analysts project significant gains for consumers this year and next, as 5G networks and handsets with 5G capabilities increasingly become available.⁴² Fixed wireless capabilities will continue improving and support residential broadband services. This year, cable broadband providers expect to finish specifications for DOCSIS® 4.0 as part of their 10G platform initiative to deliver multi-gigabit speeds.⁴³ Wi-Fi 6 technologies, now in initial stages of deployment, will provide improved capacity and throughput on a more consistent basis to more devices than prior generations of Wi-Fi.⁴⁴ Ultra-fast satellite broadband services are on the horizon, including HughesNet's next-generation EchoStar 24/J3 satellite launch scheduled in 2021.⁴⁵ And OTA broadcast TV is poised to pose competitive challenges to other video service providers, as the industry begins this year to launch ATSC 3.0 receiver technologies that will enable what it calls

³⁷ Nielsen, "The Nielsen Local Watch Report" (Jan. 14, 2019), at:

<https://www.nielsen.com/us/en/insights/report/2019/nielsen-local-watch-report-the-evolving-ota-home/#>.

³⁸ Nielsen, "Over-the-Air TV is Booming in U.S. Cities" (May 11, 2019), at:

<https://www.nielsen.com/us/en/insights/article/2019/over-the-air-tv-is-booming-in-us-cities/>.

³⁹ Nielsen, "Over-the-Air TV is Booming."

⁴⁰ USTelecom, "Preliminary Data Show Continued Upward Momentum for Broadband Investment," (Jun. 10, 2019),

at: <https://www.ustelecom.org/preliminary-data-show-continued-upward-momentum-for-broadband-investment/>.

⁴¹ CTIA, 2019 Annual Survey Highlights.

⁴² See, e.g., Daniel Howley, "5G will be in every metro area in the US by the end of 2020: Qualcomm president," *Yahoo Finance* (Jan. 22, 2020), at: <https://finance.yahoo.com/news/metro-area-5g-2020-204015389.html>.

⁴³ Belal Hamezeh, "A Major Leap Toward 10G: CableLabs to Complete DOCSIS® 4.0 Specification in Early 2020," *CableLabs* (Sept 26, 2019), at: <https://www.cablelabs.com/major-leap-toward-10g-cablelabs-to-complete-docsis-4-0-specification-in-early-2020>.

⁴⁴ See, e.g., Lauren Goode, "Wi-Fi 6 Will Be Here Soon. So What Is It?" *Wired* (Aug. 29, 2019), at: <https://www.wired.com/story/what-is-wi-fi-6/>.

⁴⁵ See EchoStar, "EchoStar Announces Financial Results for Three and Nine Months Ended September 30, 2019," (Nov. 7, 2019), at: <http://ir.echostar.com/index.php/news-releases/news-release-details/echostar-announces-financial-results-three-and-nine-months-1>.

"NEXTGEN TV" with superior audio and video capabilities, including 4k Ultra HDTV signal delivery.⁴⁶

The FCC Should Promptly Make More Spectrum Available

A survey of the current market landscape magnifies the importance of increasing the supply of spectrum for both licensed and unlicensed commercial uses. The FCC must take bold action to promptly make additional spectrum resources available for commercial use, particularly in the mid- and lower-mid bands.

In 2020, the Commission should prepare C-Band spectrum for auction as speedily as reasonably possible. Promptness is critical for achieving global leadership in the international race to 5G. The Commission can best ensure a more rapid auctioning process by adopting a plan that will offer adequate payments to current C-Band spectrum users in order to incentivize timely cooperation with the agency and prospective winning bidders.

It is also imperative that the Commission promptly make a decision on Ligado Networks' long-pending modified applications to build a hybrid satellite-terrestrial wireless network for operations in unused L-band spectrum. Ligado's hybrid network would offer Internet-of-Things (IoT) connectivity to business enterprises.⁴⁷

Additionally, the Commission should move swiftly in its 5.9 GHz spectrum proceeding. In December the Commission proposed a rulemaking to repurpose at least 45 MHz of the 5850-5925 MHz (or 5.9 GHz) band for unlicensed use.⁴⁸ If implemented, that 45 MHz could be combined with similar adjacent spectrum to enable a contiguous block of 160 MHz channel for unlicensed devices. The Commission's 5.9 GHz proposal would boost Wi-Fi offloading of mobile wireless traffic and thereby free up spectrum for 5G and other next-generation services. Economic efficiencies from increased Wi-Fi offloading are particularly important to recent entrant cable hybrid MVNO operators.

The FCC Should Reduce Regulatory Barriers to Infrastructure Deployment

A survey of the current market landscape also reveals the ever-increasing extent to which the mid-1990s' regulatory framework governing digital communications services is hopelessly outdated. The FCC should complete several pending reform initiatives and pursue additional reforms in 2020 to reduce costly and unnecessary regulatory barriers to new infrastructure investment and deployment.

⁴⁶ ATSC, "'20 in 20': Technology Firms Launching First ATSC 3.0 NEXTGEN TV Consumer Products for U.S. Market" (Jan. 7, 2020), at: <https://www.atsc.org/news-release/20-in-20-technology-firms-launching-first-atsc-3-0-nextgen-tv-consumer-products-for-u-s-market/>.

⁴⁷ See Reply Comment of the Free State Foundation, Comment Sought on Ligado's Modification Applications, IB Docket No. 11-109, SAT-AMD-20180531-00044, SAT-AMD-20180531-00045 (July 19, 2018).

⁴⁸ FCC, Use of the 5.850-5.925 GHz Band, ET Docket No. 19-138, Notice of Proposed Rulemaking (rel. Dec. 17, 2019).

In 2020, the Commission should issue a ruling that clarifies aspects of Section 6409(a) of the Spectrum Act regarding non-substantial modifications to towers and base stations to clear away local administrative barriers to wireless infrastructure upgrades.⁴⁹

This year, the Commission also ought to propose a rulemaking that would reinstitute, with stronger reasoning, exemptions for small cell construction from historic and environmental reviews attached to certain federal projects. A 2019 decision by the U.S. Court of Appeals for the D.C. Circuit vacated the *Accelerating Wireless Broadband Deployment Order*.⁵⁰ But the court's decision does not prevent the Commission from seeking to reinstitute the proposed rulemaking, provided the agency supports it with a more persuasive rationale.⁵¹

Additionally, the Commission should adopt its proposed rulemaking that would update the Over-the-Air Reception Device (OTARD) rule to include hub and relay antennas for fixed wireless signals.⁵² Such equipment is important for 5G services. Including hub and relay antennas within the scope of the rule would prohibit local restrictions on the use of such equipment in areas within a property user's exclusive control.

Furthermore, the Commission should adopt its proposed rulemaking to reduce legacy network "unbundling" regulation "to reflect [competitive] marketplace realities and to remove unnecessary regulatory burdens that can inhibit the deployment of, and transition to, next-generation networks."⁵³ Unbundling regulation, which amount to forced-access mandates, date back to the mid-1990s and were supposed to be temporary. Aside from being outdated, they have the practical effect of dis-incentivizing investment in new facilities.

Conclusion

Data from 2018 and 2019 indicates that the digital communications market is equally competitive, if not more competitive, compared to what it was in 2017. To ensure that positive trends in market competition continue beyond 2020, the FCC should act promptly to make additional spectrum available for commercial use. And the Commission should implement several reform initiatives to reduce costly and unnecessary regulatory barriers to new infrastructure investment and deployment.

⁴⁹ See Comments of the Free State Foundation, Implementation of State and Local Governments' Obligation to Approve Certain Wireless Facility Modification Requests Under Section 6409(a) of the Spectrum Act of 2012; WT Docket No. 19-250, et al. (Oct. 29, 2019), at: <https://freestatefoundation.org/wp-content/uploads/2019/10/FSF-Comments---Obligation-to-Approve-Modification-Requests-Under-Section-6409a-102919.pdf>.

⁵⁰ See *United Keetoowah Band of Cherokee Indians in Oklahoma v. FCC*, 933 F.3d 728 (D.C. Cir. 2019).

⁵¹ For a discussion of the Commission's rationale and a critique of the D.C. Circuit's decision in *United Keetoowah Band*, see Daniel A. Lyons, "D.C. Circuit Decision Represents Setback to Next-Generation Network Deployment Efforts," *Perspectives from FSF Scholars*, Vol. 14, No. 19 (Aug. 15, 2019), at: <https://freestatefoundation.org/wp-content/uploads/2019/09/D.C.-Circuit-Decision-Represents-Setback-to-Next-Generation-Network-Deployment-Efforts-081519.pdf>.

⁵² Seth L. Cooper, "FCC's Proposed Update to Over-the-Air Device Rule Would Boost 5G," *The Free State Foundation Blog* (May 31, 2019), at: <http://freestatefoundation.blogspot.com/2019/05/fccs-proposed-update-to-over-air-device.html>.

⁵³ FCC, Fact Sheet: Modernizing Unbundling and Resale Rules in an Era of Next-Generation Networks and Services, Notice of Proposed Rulemaking – WC Docket No. 19-308 (Oct. 29, 2019), at: <https://docs.fcc.gov/public/attachments/DOC-360518A1.pdf>.

* Seth L. Cooper is Director of Policy Studies and a Senior Fellow of the Free State Foundation, an independent, nonpartisan free market-oriented think tank located in Rockville, Maryland.

Further Reading

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Seth L. Cooper, "[FCC Report Indicates a Competitive Communications Marketplace: Future Reports Should Make Cross-Platform Substitution Findings](#)," *Perspectives from FSF Scholars*, Vol. 14, No. 6 (February 26, 2019).

[Comments of the Free State Foundation](#) – Communications Marketplace Report, *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*; GN Docket Nos. 18-231 and 18-238 (September 21, 2018).

[Comments of the Free State Foundation](#) – Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services, WT Docket No. 18-203 (July 26, 2018).