January 27, 2021

VIA ELECTRONIC FILING

Hon. Acting Chairwoman Jessica Rosenworcel
Hon. Commissioner Brendan Carr
Hon. Commissioner Geoffrey Starks
Hon. Commissioner Nathan Simington
Federal Communications Commission
45 L Street NE
Washington, DC 20554

Re: *Building the 5G Economy – The Wireless Industry's Plan to Invest and Innovate in the U.S.* *Facilitating Shared Use in the 3100-3550 MHz Band*, WT Docket No. 19-348; *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, GN Docket No. 18-122; *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, GN Docket No. 17-183; *Use of Spectrum Bands Above 24 GHz*, GN Docket No. 14-177; *Establishing a 5G Fund for Rural America*, GN Docket No. 20-32; *Digital Opportunity Data Collection*, WC Docket No. 19-195; *Emergency Broadband Benefit Program*, WC Docket No. 20-445; *Accelerating Wireless/Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WT Docket No. 17-79, WT Docket No. 17-84; *Reliability and Continuity of Communications Networks*, PS Docket No. 11-60

Dear Acting Chairwoman and Commissioners:

Today, wireless is hard at work investing in America and building the infrastructure and networks that will drive our economic recovery, shrink the digital divide, and provide the platform on which American ingenuity and innovation will solve the challenges of the 21st century—from health care and climate change, to education and transportation. Under the continued leadership of the Federal Communications Commission ("Commission"), 5G will drive the new jobs and economic growth that the United States needs to recover from the impacts of COVID-19 and lead the world.

The attached report, *Building the 5G Economy, The Wireless Industry's Plan to Invest and Innovate in the U.S.*, describes the progress the U.S. wireless industry has made in the race to 5G and the transformative effects that 5G will have on our lives, our communities, and the economy over the next decade. As detailed in the report, the U.S. wireless industry in 2019 invested $29 billion in network buildout and added more cell sites than in the three prior years combined. With these aggressive efforts, the United States has pulled slightly ahead of China in the race to 5G, as measured by 5G launches, subscriptions, and investment. But 5G leadership requires more work.

The report underscores some of the important policy challenges that remain. The U.S. continues to face a licensed mid-band spectrum deficit, and despite the good progress made in the past two years, still trails key rivals in licensed spectrum availability. And COVID-19 has shined a light on the pressing need to get all Americans connected. Last year, schools and wireless providers made progress to connect the unconnected, but too many students remain without access to broadband at home today. We support the Commission's goal of ensuring that all kids have access to broadband at home. As Acting Chairwoman Rosenworcel recently noted, "for students who don't have internet access at home, having the school loan out a wireless hot spot is the difference between keeping up in class and falling behind."[1]

To address these challenges, and to promote a safer, more secure future for all Americans, the report provides key policy recommendations on developing a clear spectrum pipeline; closing the digital divide; protecting consumers during times of emergency and from cyber threats, illegal calls, and other nuisances; championing diversity; and affirming a national policy approach on privacy and net neutrality that protects consumers while promoting future private investment. By taking the steps outlined in the report, the Commission can help ensure that all Americans experience the full potential of 5G.

* * *

CTIA looks forward to continuing to serve as a partner in the Commission's efforts to foster policies that will connect all Americans and ensure equitable online opportunities for all. Please do not hesitate to contact the undersigned with any questions.

Sincerely,

/s/ Scott K. Bergmann
Scott K. Bergmann
Senior Vice President, Regulatory Affairs

Attachment

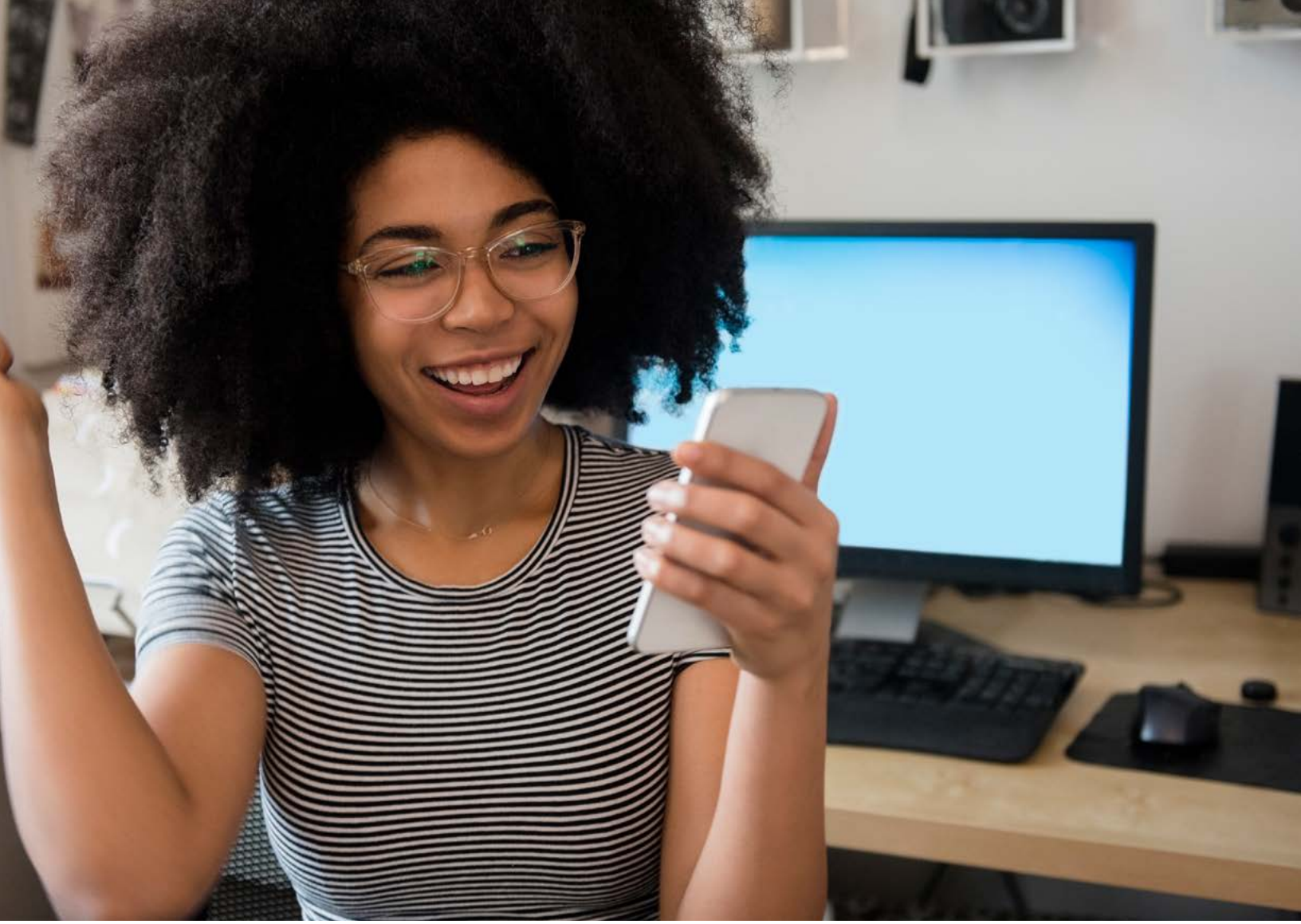
[1] Tanya Basu, *Why the "homework gap" is key to America's digital divide*, MIT TECHNOLOGY REVIEW (Oct. 13, 2020), https://www.technologyreview.com/2020/10/13/1010243/jessica-rosenworcel-homework-gap-key-to-americas-digital-divide/?utm_medium=tr_social&utm_campaign=site_visitor.unpaid.engagement&utm_source=Twitter#Echobox=1602622838.

Building the 5G Economy

The Wireless Industry's Plan to Invest and Innovate in the U.S.

We are the wireless industry. From the cell towers to the devices that capture our memories and connect us to our loved ones, America's wireless industry is dynamic, growing, and central to the way we work, live, and play. The cellphone was invented here, and we remain the quintessential American industry.

Today, wireless is hard at work investing in America, building the infrastructure and networks that will drive our economic recovery, shrink the digital divide, and provide the platform on which American ingenuity and innovation will solve the challenges of the 21st century—from health care and climate change to education and transportation.



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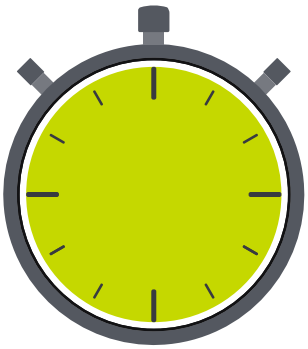
Our 5G Future is Now

5G is available across the U.S. today, years ahead of schedule. Over the next decade, 5G will drive our nation's economic growth and global competitiveness, creating 4.5 million new jobs and adding $1.5 trillion to our economy.

KEY 5G CHARACTERISTICS



100x

FASTER

With 4G, it can take almost six minutes to download a full movie. That same movie can be downloaded in about 15 seconds with 5G.

100x

MORE DEVICES

5G will be able to connect up to 100 times more devices, including everything from baby monitors to cars, smartphones, drones, VR headsets and more.

5x

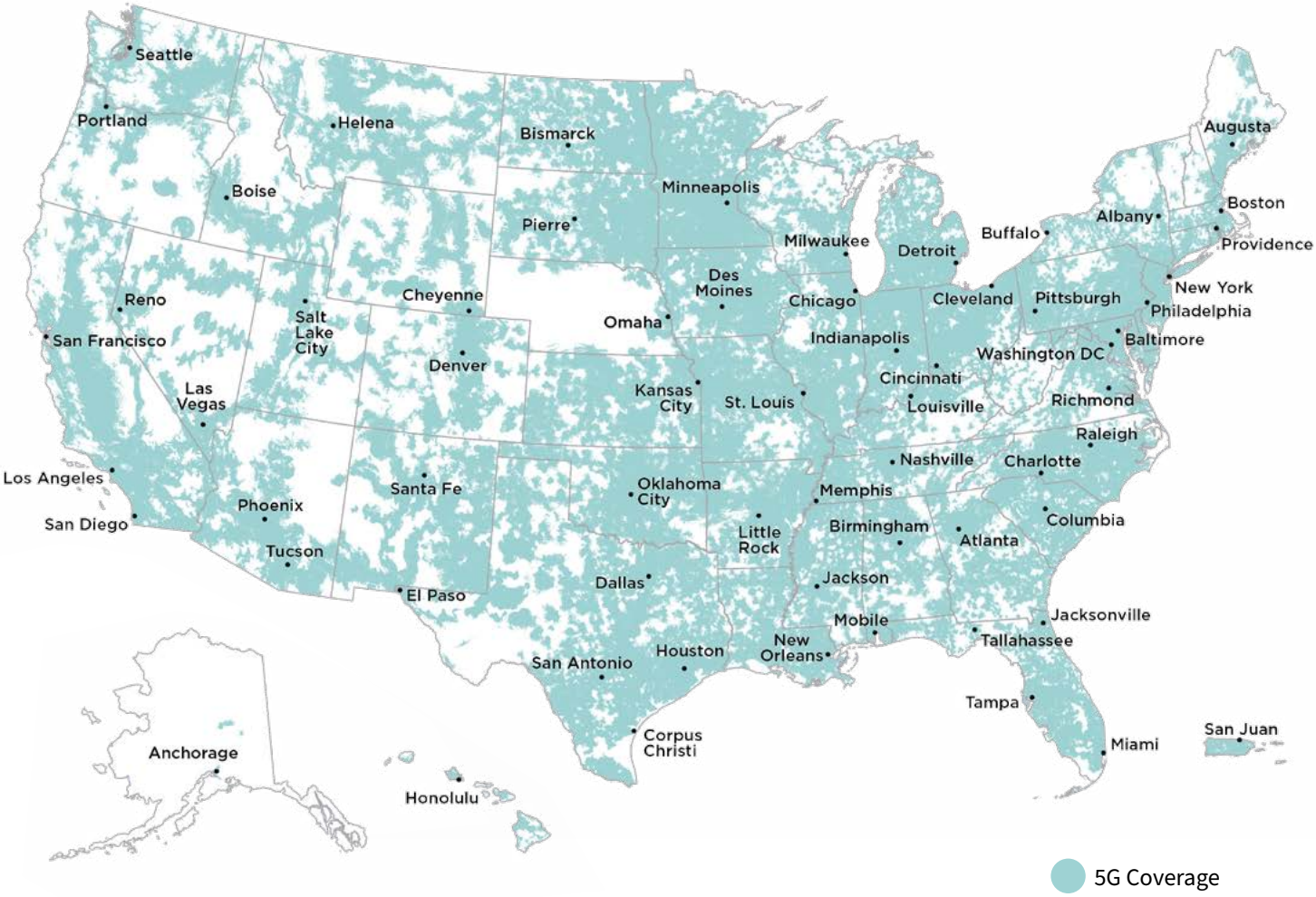
MORE RESPONSIVE

5G's low latency (or quick reaction time) will make breakthroughs in real-time applications a reality.

5G is the Innovation Platform

5G is the next generation of wireless. It's more than just an evolutionary step forward technologically. It's a revolutionary leap. These wireless networks, rolling out in communities across the country, will be transformative—making our lives better, our communities safer, and our nation more prosperous. Just like 4G wireless, 5G wireless networks will improve in functionality, speed, and reach every year this decade.

U.S. 5G DEPLOYMENTS



Source: Ookla®

Deploying 5G Across America

Tower by tower, small cell by small cell, device by device, the U.S. has made remarkable progress rolling out 5G networks. The U.S. has among the world's fastest 5G speeds, and is the largest country with three nationwide 5G networks. We're also doing it much more quickly than ever before. The U.S. industry built more cell sites last year than in the three prior years combined, and the leading smartphone providers have all launched new signature 5G devices. The initial 5G networks already cover over 270 million Americans and one operator has committed to serve over 90 percent of rural Americans in a few short years. 5G networks are already running in rural parts of Iowa, North Carolina, and Wisconsin as we turn on 5G in more communities every day.

Global Snapshot: Pulling Ahead of China

The U.S. wireless industry's aggressive efforts have left countries like China scrambling to catch up. We keep pushing ahead as the U.S. invested three times more per capita on 5G than China last year. China's aggressive 5G ambitions remain clear and we need to ensure spectrum and siting policies help us build faster and smarter to keep pace.

U.S.-CHINA COMPARISON

5G LAUNCHES

The first U.S. 5G deployments were 13 months before China. The U.S. already has three 5G nationwide networks. China has none.

3

NATIONWIDE 5G NETWORKS

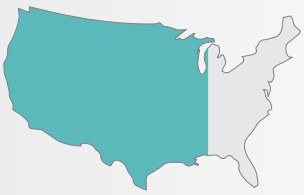
0

NATIONWIDE 5G NETWORKS

5G SUBSCRIPTIONS

The key stat is how prevalent 5G will be in each country. By 2025, 5G will be 74% of U.S. wireless connections. China's 5G will permeate society at a significantly lower rate, only 64%.

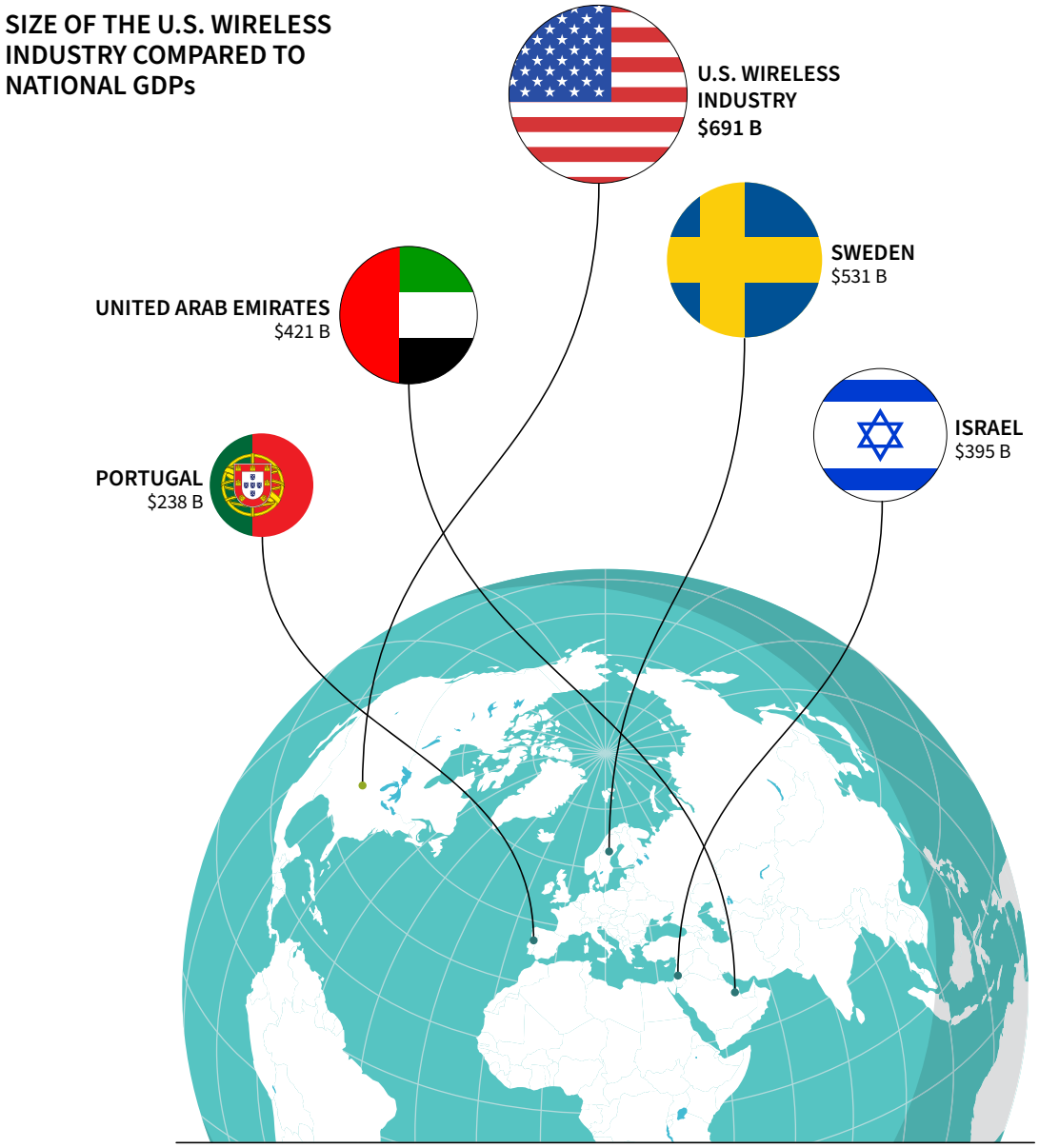
74%



64%

5G INVESTMENT

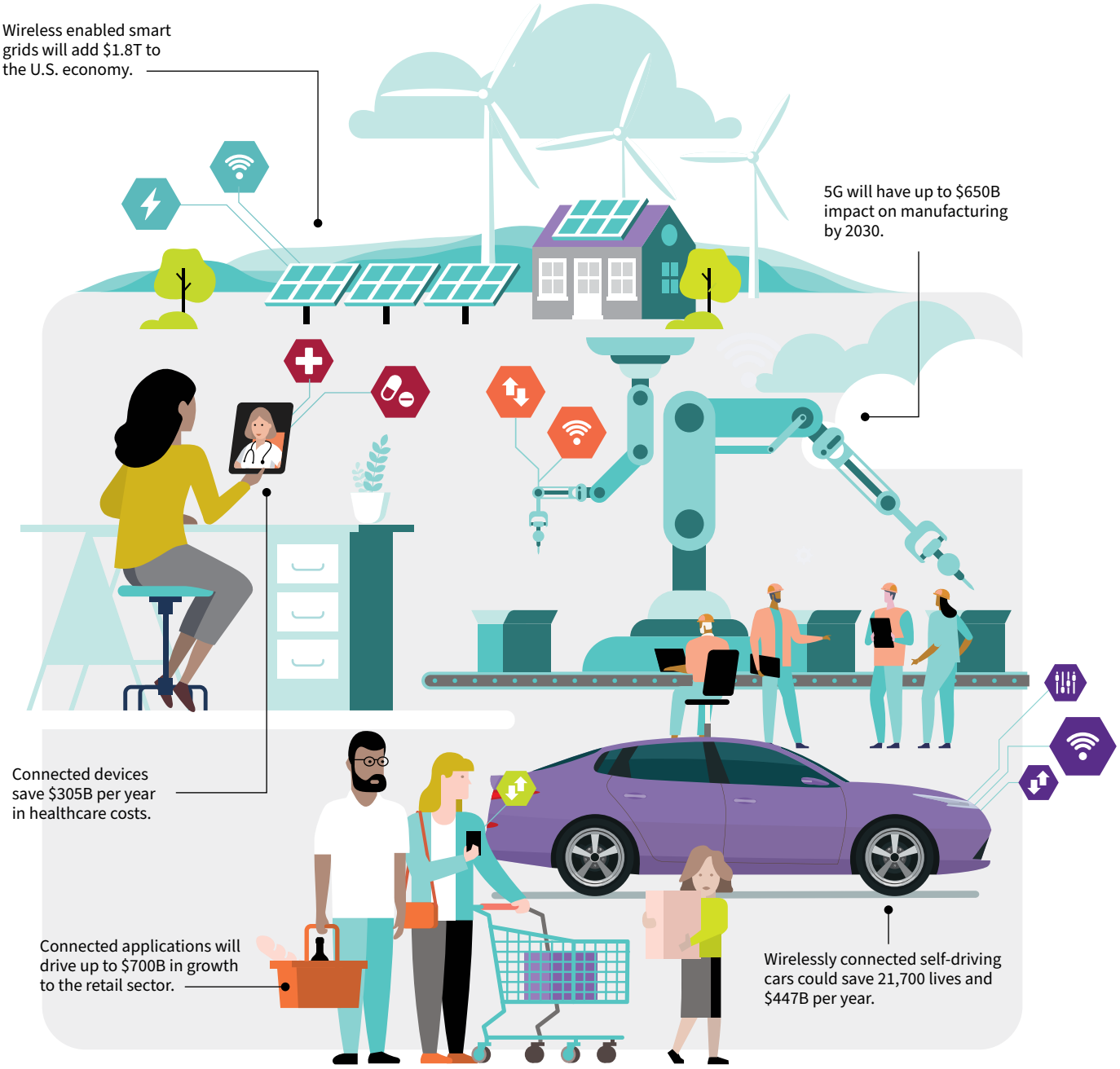
Overall, U.S. wireless industry invested 3 times more per capita on 5G last year.



Wireless Economic Impact Today

We know 5G will have a powerful positive economic effect because of our experience with 4G wireless, which drove innovation in the past decade fostering the app and sharing economies. Last year, wireless contributed nearly $700 billion to the economy and supported almost 5 million jobs—jobs that pay 50 percent more than average American jobs. The wireless ecosystem has been the largest job creator across all industries in the last decade.

5G WILL ENHANCE ALL INDUSTRIES



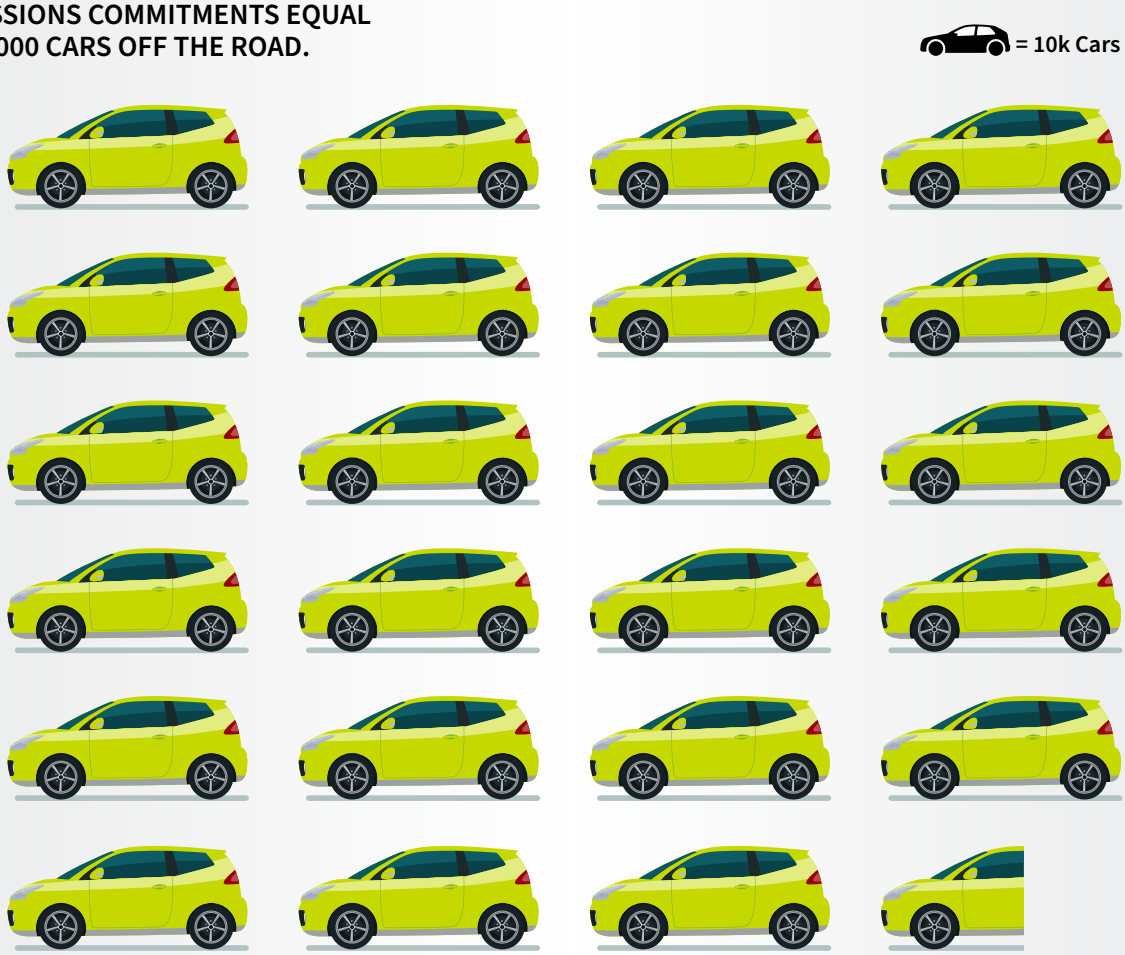
Powering Innovation Across All Industries

4G has demonstrated the power of wireless to drive innovation. 5G promises to enable the jobs and technologies that will drive the U.S. economy and industries of the future for years to come. In doing so, 5G will help us address our nation's biggest challenges.

The Wireless Climate Commitment

The wireless industry is committed to combating climate change and 5G holds great potential to greatly enhance our industry's energy efficiency and assist other industries' efforts to mitigate climate change. The U.S. wireless industry is focused on reducing carbon emissions, embracing more sustainable practices, and constructing more resilient and energy-efficient networks. 5G will require one third the power of 4G sites and 5G-powered IoT promises to cut overall carbon emissions by 15 percent.

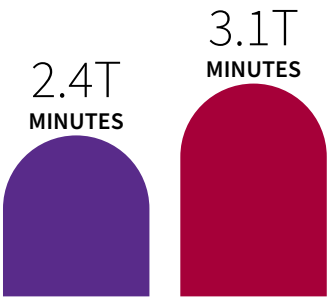
WIRELESS INDUSTRY REDUCED EMISSIONS COMMITMENTS EQUAL 235,000 CARS OFF THE ROAD.



A Smartphone World

In a generation, wireless has gone from a luxury product to an extension of ourselves critical to how we live and communicate. Amazingly, there are more wireless connections right now than there are Americans.

AMERICA'S TALK, TEXT AND DATA DEMANDS



We talked for 30% more minutes last year.

We exchanges 2.1T SMS texts. That's 63K texts a second.

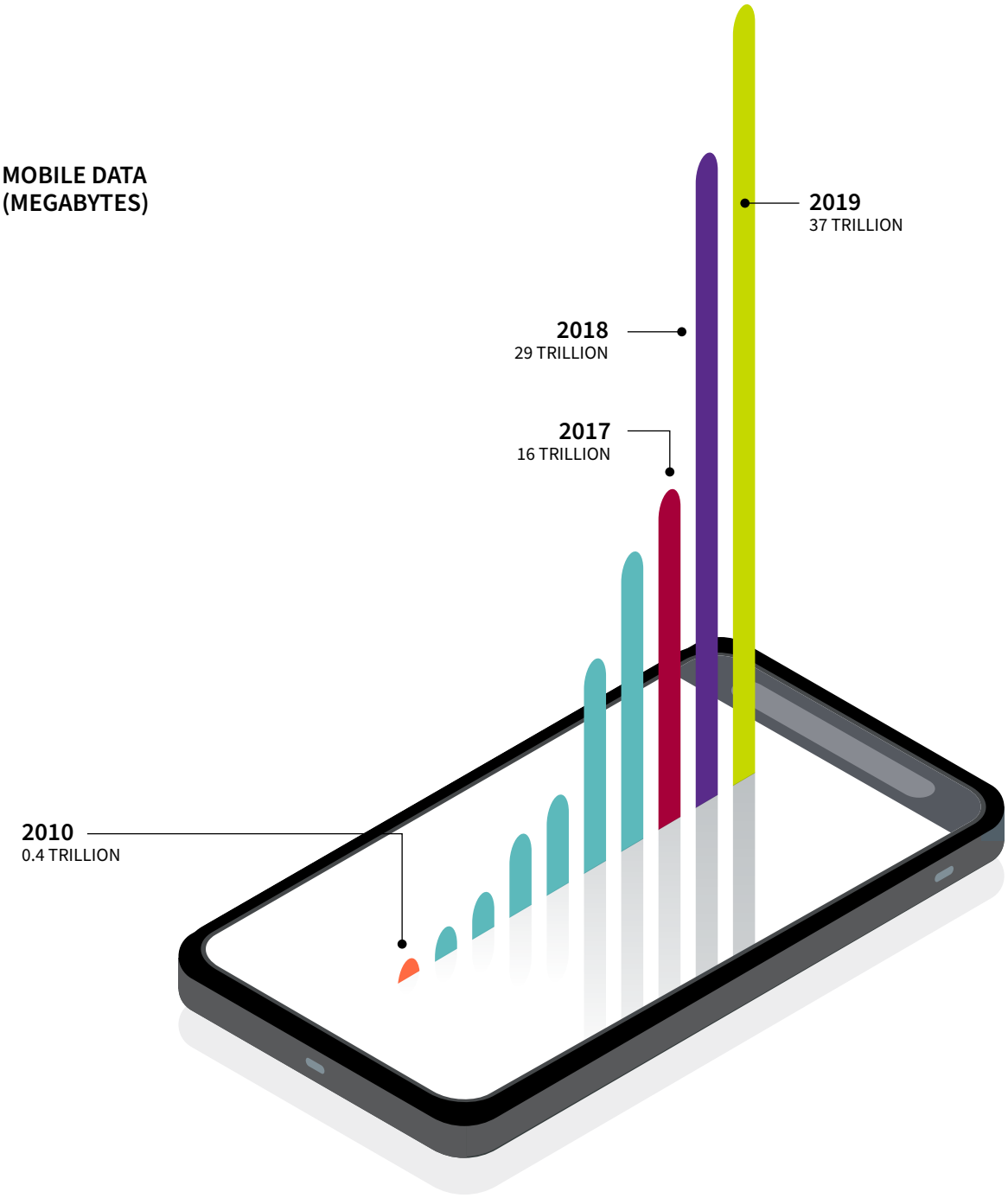
284M
SMARTPHONES

Americans use their 284M smartphones more every year.

And we used 37T MB of mobile data.

Record Wireless Usage

Consumer demand for wireless set a new standard last year as Americans use more and more wireless services every year whether by voice, text, or data. There are now 1.3 wireless devices per American as our smartphones are increasingly joined by tablets, smartwatches, cars, and IoT devices. Last year, Americans used more than 37T MBs of mobile data, or roughly 9GB a month per smartphone.



Mobile Use Skyrockets

Since 2010, almost 100 times more traffic runs over wireless networks. That requires billions invested every year just to keep up with year-over-year growth, new Americans online, and the proliferation of devices. To help keep up with America's demand for more, the U.S. wireless industry uses the spectrum available 42 times more efficiently over the last decade.

AMERICANS BENEFIT FROM COMPETITION

Speeds since 2010

31x

FASTER

Price of unlimited plans since 2010

43%

CHEAPER

Price per MB compared to 2010

98%

LESS

CONSUMER SAVINGS

$130B

PER YEAR BASED ON 2010 PRICES

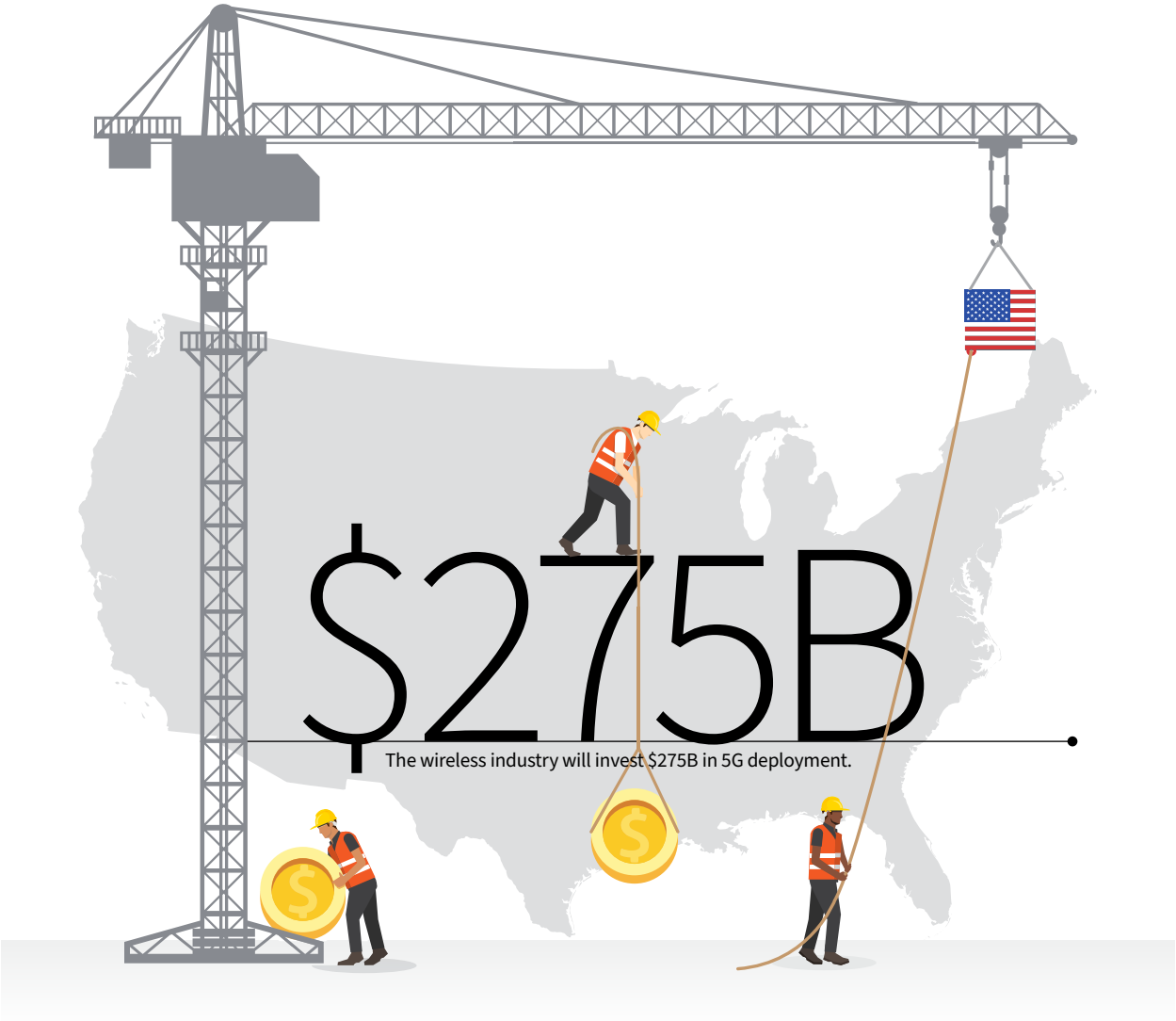
More For Less—A Win for Consumers

Wireless competition has resulted in faster speeds, better services, and was even responsible for the first decrease in the total Consumer Price Index in almost a decade. NERA found Americans benefit from the best mobile value proposition across the globe.

Investing in America

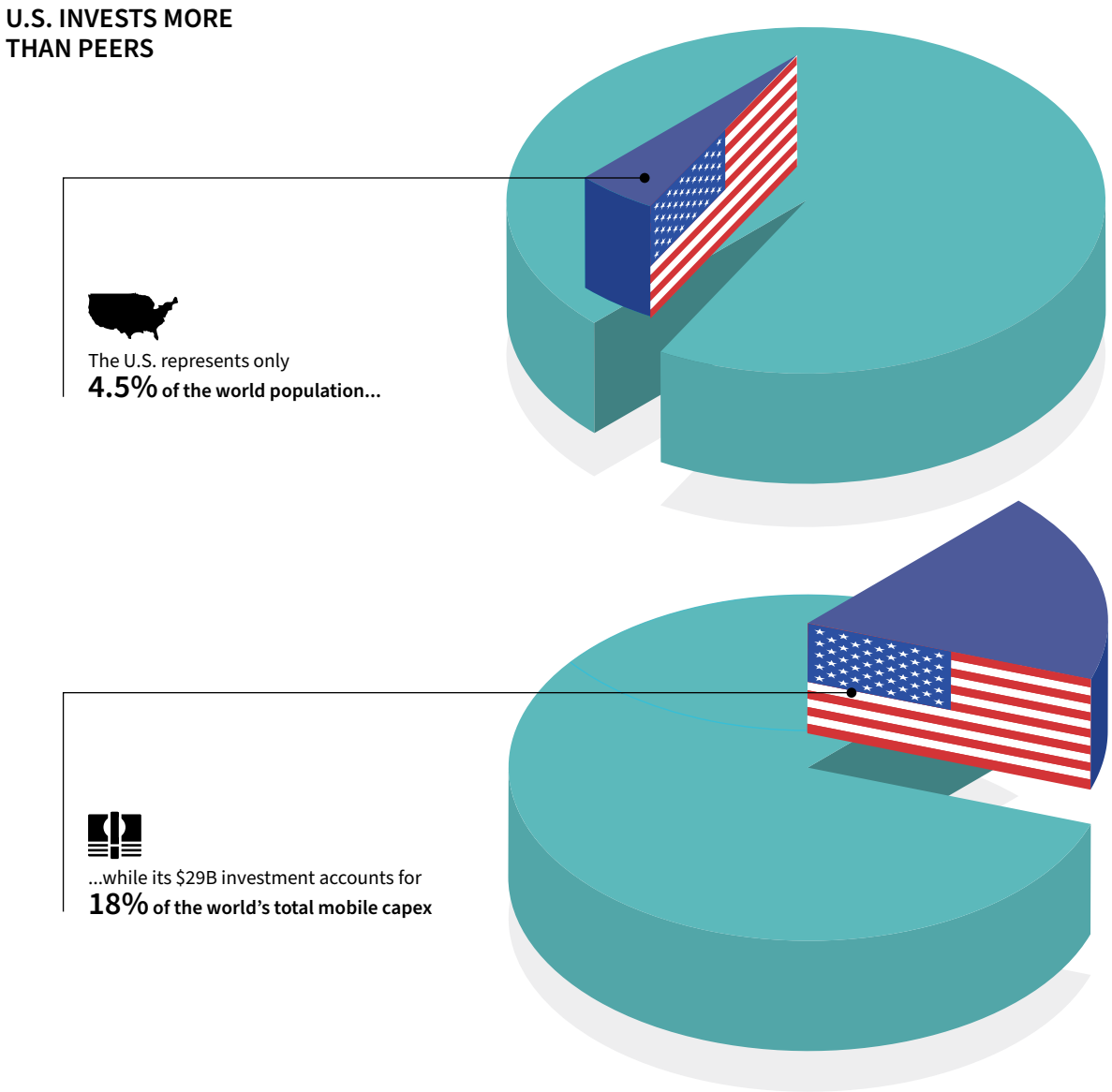
U.S. 5G global leadership is not by chance. It is a direct result of billions invested and the most competitive and dynamic industry built on an investment-friendly national regulatory framework.

WIRELESS INVESTS



$29 Billion in Tomorrow's Infrastructure

Over the past four years, the wireless industry has invested a staggering level of private capital—over $100 billion—to bring 5G connectivity from New York City to Cedar Rapids. Providers invested $29 billion last year alone towards our 5G future. The Progressive Policy Institute ranked CTIA members as 6 of its top 10 "Investment Heroes."



Investing Far More Than Global Rivals

U.S. wireless providers' investment significantly exceeds our global rivals. More regulation and less competition continue to impact wireless innovation in other countries, particularly in Europe. U.S. investment is equal to $89 per American or over four times as much as China per capita.

AMERICANS HAVE
WIRELESS CHOICE

Wireless Competition Drives It All

99 percent of Americans can choose between three or more wireless providers from among national operators, over 100 regional operators, as well as resellers and cable companies.

With more spectrum, the greater speed and capabilities of 5G promise to help our industry provide much-needed competition in the home broadband market where almost two-thirds of rural households have no choice in home broadband providers.

Affirming a National Policy Approach

We must preserve consumer choice and a regulatory framework that promotes the future private investment we need. The key to widespread and rapid wireless deployment has also been a bipartisan national policy approach — enshrined in Section 332 of the Communications Act — that precludes a patchwork of local and state requirements. States today are increasingly encroaching on that national framework, risking the investment-friendly approach needed to promote job creation. Congress should affirm the national wireless approach and enshrine a new national framework for the internet.

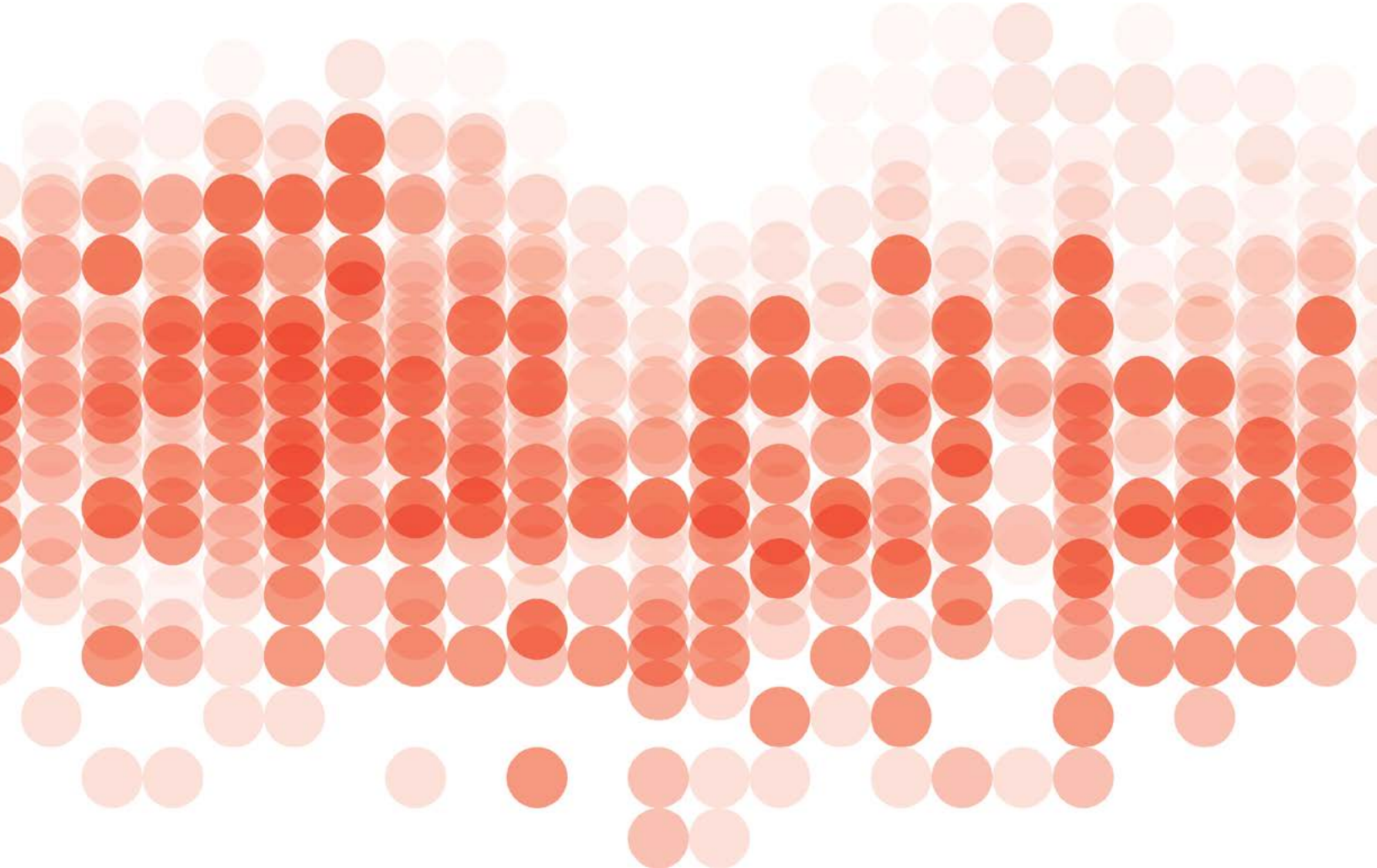
KEY RECOMMENDATIONS

Establish comprehensive privacy rules. Policymakers should enact a national privacy framework to protect consumer data. It should be centered under the Federal Trade Commission, treating consumer information consistently across platforms and applications, minimizing consumer confusion and ensuring all players in the internet ecosystem can compete on a level playing field with one set of national rules.

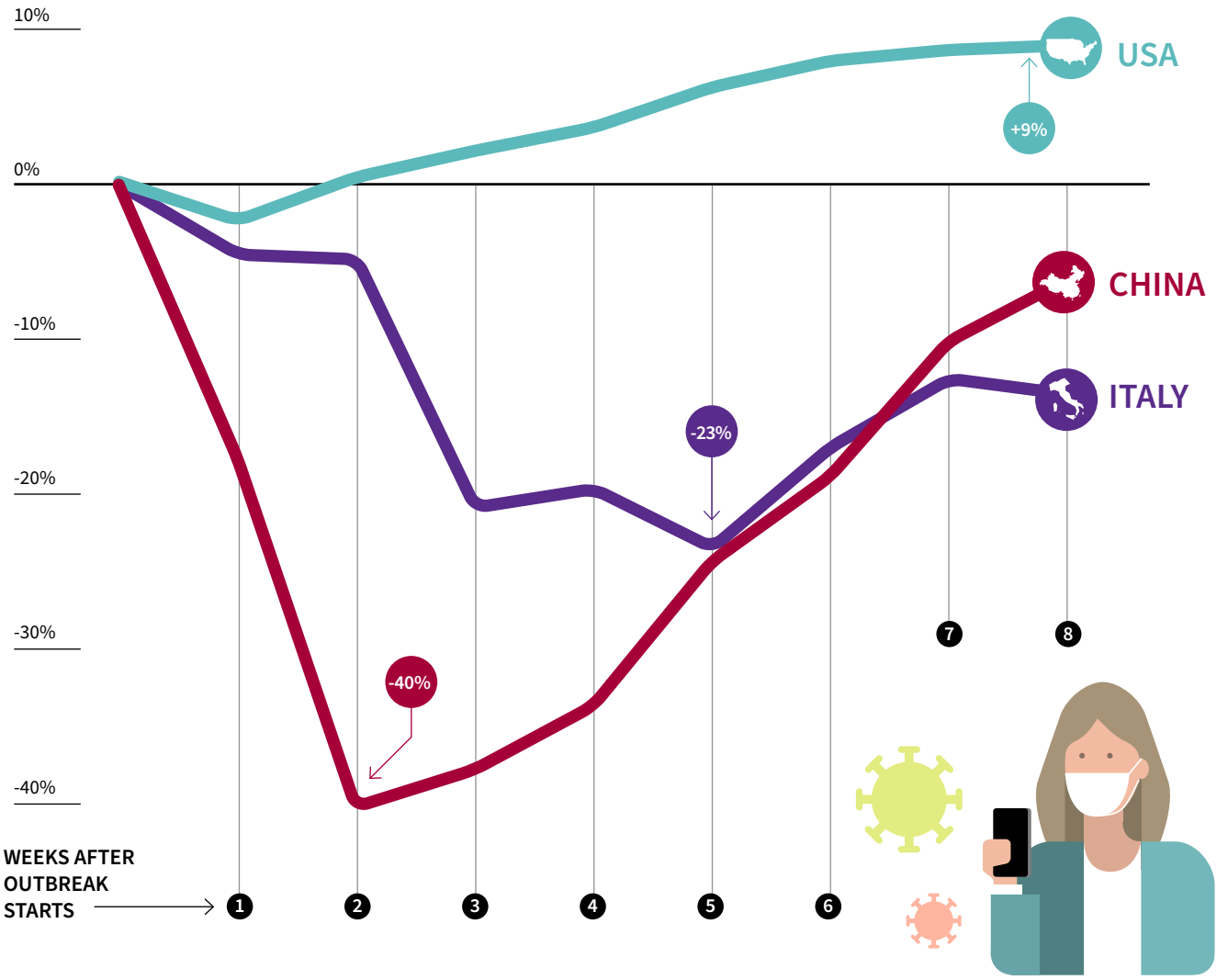
Safeguard an open internet. The wireless industry supports an open internet. Congress should ensure net neutrality principles outside of Title II to protect consumers online while facilitating innovation and investment in next-generation networks and services.

Responding to COVID-19

When America needed us the most, the wireless industry was ready to keep all of us connected with family, jobs, schools, doctors and so much more.



COVID-19'S IMPACT: CHANGE IN AVERAGE MOBILE DOWNLOAD SPEED



Keeping Americans Connected

COVID-19 overnight changed how we live, work, and educate our kids. America's wireless networks rose to the occasion, handling an unprecedented surge in mobile traffic. Voice traffic jumped up to 40 percent, and data traffic grew nearly 20 percent. U.S. wireless network speeds actually increased thanks to our industry's investment and additional spectrum resources. The U.S. experience is even more remarkable in comparison to other countries where networks strained to maintain quality and speed as demand spiked.

Watch Tempele's story.
Click here.

"I have seen great work that the wireless industry has done throughout the pandemic, particularly for students who are from vulnerable communities, when connectivity has become more critical than ever."

– Geoffrey Starks
FCC Commissioner

Connecting 2 Million Kids

The wireless industry recognized immediately the impact COVID-19 would have on Americans and rolled out new offerings and services to help. The clearest example may be connecting kids: thanks to proactive efforts and innovative partnerships, the wireless industry has already helped ensure over 2 million schoolchildren were able to keep learning thanks to new hotspots and connected devices. The job is far from done, and we continue to connect more kids every day. When Forbes ranked the best COVID-19 corporate responses the three national wireless carriers were each in the top five across all industries, and we continue to connect more kids every day with commitments in place to serve tens of millions more kids.

KEY RECOMMENDATION

Close the homework gap. Despite significant efforts from schools and wireless providers, there remain too many children without access to broadband at home today. We should make a national commitment to connect all schoolchildren and provide congressional funding for mobile hotspots to close that gap once and for all.

Closing the Digital Divide

Wireless is the broadband on-ramp for millions of Americans and can help drive broadband adoption and shrink the digital divide with the help of policymakers.

SHARE OF WIRELESS-ONLY HOUSEHOLDS IN THE U.S.

2007

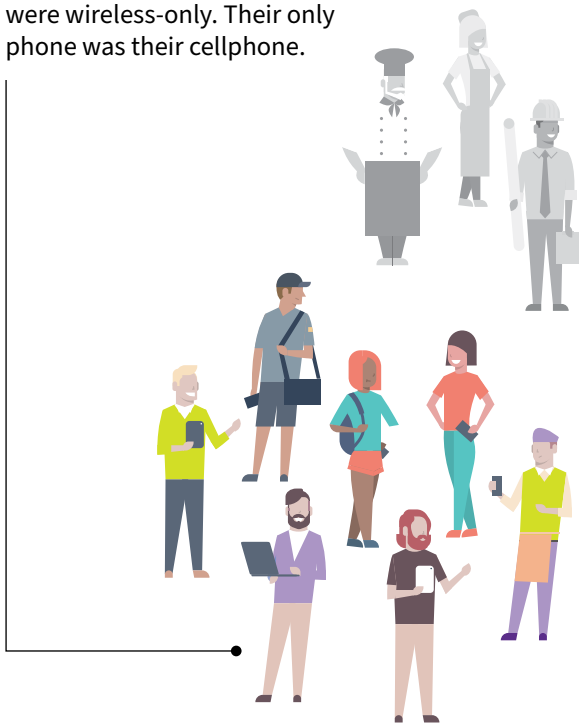
16%

In 2007, 16% of households relied on cellphones alone with no landline.

2019

65%

By 2019, 65% of households were wireless-only. Their only phone was their cellphone.



Serving All Americans

The wireless industry is proud to connect millions more Americans to broadband than any other technology. 99.9% of Americans have access to a wireless broadband connection and 17% of Americans are smartphone-only today, meaning their only broadband at home is from their wireless provider. For low-income Americans that number is even higher: 26% of adults living in households earning less than $30,000 a year are now smartphone-only.

EXPANDING OUR REACH

Every six-month delay in 5G deployment means missing out on

$25 BILLION

of the potential benefits.

Expanding Networks

The wireless industry is proud to cover over 99 percent of Americans today. Targeted government funding can help us reach more Americans and expand and densify our networks every year. To meet consumer demand and enable the full potential of 5G, wireless networks need to be denser, which is why providers are investing in small cells to help complement the layer of coverage provided by towers. There are now almost 400,000 active cell sites across the country, thanks to new federal and state policies that modernized permitting rules. However, 5G will require hundreds of thousands of small cells in the coming years, and the siting processes in too many communities still take too long and are too complex and costly.

KEY RECOMMENDATIONS

Deliver on the 5G Fund. Policymakers can help reach unserved areas by providing targeted support to wireless providers to bring service to the hardest to reach areas. The FCC's 5G Fund will accelerate deployment of next-generation wireless services to Americans unserved today. The key to properly targeting government funding is accurate broadband maps, and we support FCC action on the recently approved congressional funding.

Modernize siting rules. To roll out wireless quickly, efficiently, and farther, policymakers at all levels of government should update infrastructure siting processes and build on reforms already instituted by the FCC and over 29 state governments to provide more certainty to all stakeholders.

Championing Diversity

We are proud that ~98% of Asian-American households, ~98% of Hispanic households, and ~96% of Black households own a smartphone. Communities of color overwhelmingly prefer wireless—25% of Hispanic adults and 23% of Black adults are "smartphone-only" for home broadband.

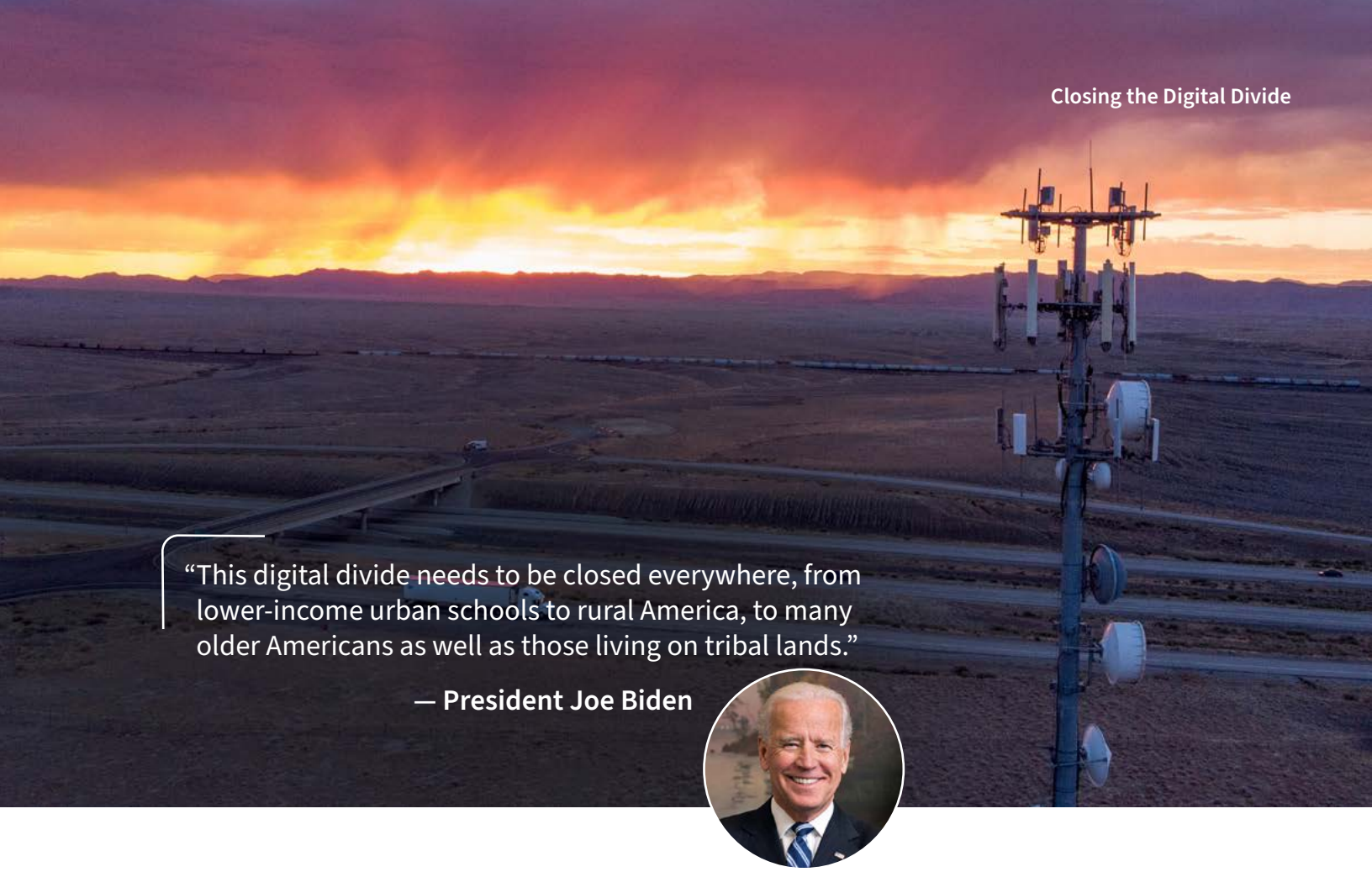
Our industry's commitment extends beyond our customers. More than 40% of the national wireless providers' workforces identify as people of color. Our industry spends billions of dollars with diverse suppliers, and creates supportive, inclusive work environments every day.

Wireless is also a proven platform for innovation and entrepreneurship in communities of color. Ashley Edwards founded MindRight Health, a digital mental health coaching service that uses SMS text messaging to link low-income and underserved youth to leaders, role models, and other resources that can help brighten the lives of marginalized communities. She notes that "Wireless technology really drives everything that we're able to do."

M/ND
R/GHT

" Our work at MindRight would not be possible without wireless technology. Early on we asked ourselves, 'How can we transform wireless technology and cellphones into healing tools?' because we know that we all depend on wireless technology."

— Ashley Edwards
Founder, MindRight Health



"This digital divide needs to be closed everywhere, from lower-income urban schools to rural America, to many older Americans as well as those living on tribal lands."

— President Joe Biden

Finishing the Job

COVID-19 has shone a light on the pressing need to get all Americans connected and ensure equitable online opportunities for all. For many Americans, affordability remains a key impediment as Pew found 50 percent of households without home broadband cite pricing concerns. The wireless industry is committed to helping shrink the digital divide as all Americans must benefit from the 5G economy. The wireless industry has a variety of prepaid and postpaid plans to help match household needs in an affordable manner. To accomplish this goal, industry and policymakers must work together.

KEY RECOMMENDATIONS

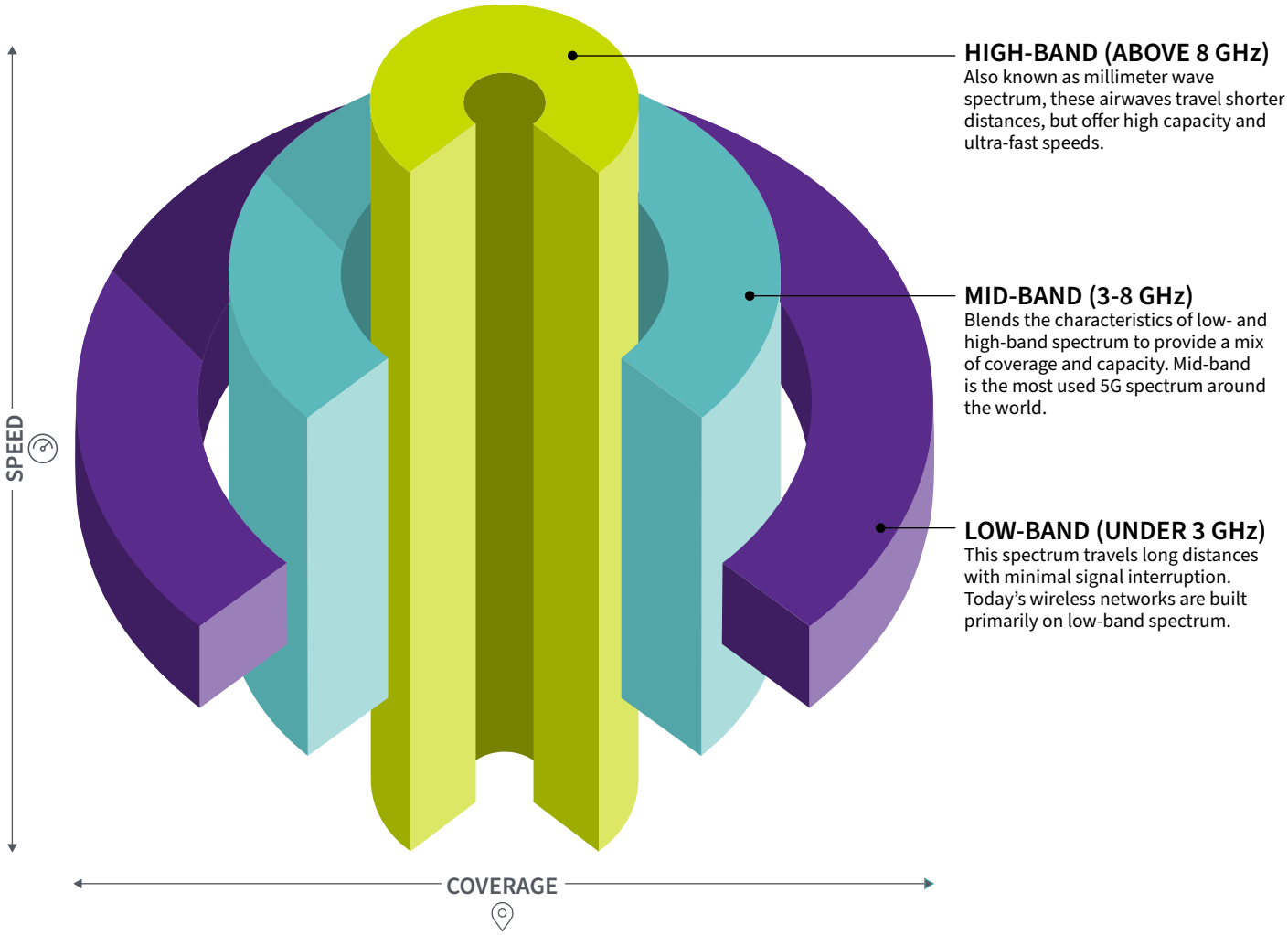
Update low-income support. A modernized low-income program can help address affordability challenges by providing consumers with more choices to meet their diverse needs. We encourage policymakers to work with broadband providers to develop solutions that empower consumer choice.

Find an equitable funding mechanism. Our collective effort to shrink the digital divide could bring greater pressure on the FCC's Universal Service Fund. We support efforts to ensure that the Universal Service Fund has a stable and equitable funding support mechanism that is not regressive and is technologically neutral.

Spectrum Fuels our Future

All of our nation's 5G ambitions are dependent upon the continued availability of sufficient spectrum to support consumer usage

A MIX OF SPECTRUM POWERS 5G



Wireless Runs on Spectrum

Wireless technologies are powered by spectrum, the radio waves that transmit data though the air, enabling us to communicate anywhere, anytime. 5G requires a blend of different bands to unlock its full promise.

AUCTION TIMELINES HAVE BEEN CUT IN HALF

1998-2006
FEDERAL: AWS-1

2018-2021
Federal: 3.45-3.55 GHz

2.5X FASTER THAN AWS-1

Auctions Are Primary Government Tool

The federal government controls spectrum access. Almost thirty years ago, the U.S. began conducting spectrum auctions to ensure this limited, natural resource was put to its highest, most efficient use. Auctions have been key to our 4G leadership and our 5G fast start. Since 1993, auctions have raised over $200 billion for the U.S. Treasury and congressional priorities.

Auctioned spectrum provides operators with exclusive use rights, which helps ensure the quality of service we all rely on today. Auctioned spectrum forms the core of today's mobile broadband networks, providing clear protection from interference, enabling investment and high-quality, reliable wireless service. Thanks to key advancements with the Spectrum Relocation Fund, the government has gotten far more efficient clearing spectrum. The 3.45 GHz spectrum is set to be cleared and auctioned in six years less time than the shared access regime right next door at 3.5 GHz. Similarly, the C-Band auction took less than 4 years.

Auctions Are Win-Win for Industry and Agencies

The federal government is the United States' largest spectrum user. Federal systems often rely on decades-old, inefficient wireless technologies with limited capabilities.

The Commercial Spectrum Enhancement Act (CSEA) created a forward-looking spectrum reallocation framework to create win-win outcomes by transitioning federal spectrum to commercial use while providing federal users with enhanced systems. Shared spectrum or unlicensed spectrum access deprives government agencies of the new funding needed for new systems or capabilities. CSEA was instrumental in the AWS-3 auction, which brought in $41.3B in revenue against federal relocation costs of $5.1B across sixteen agencies and more than 100 federal systems.

KEY RECOMMENDATION

Incentivize better federal spectrum management. Federal agencies should have additional tools to help them manage spectrum more efficiently and evaluate potential commercial access.

"AWS-3 auction … show[ed] that it is possible to work together on a bipartisan basis and across agencies to free up spectrum and shows a path forward for making more spectrum available for innovation commercial use."

— Senator Brian Schatz (D-HI)

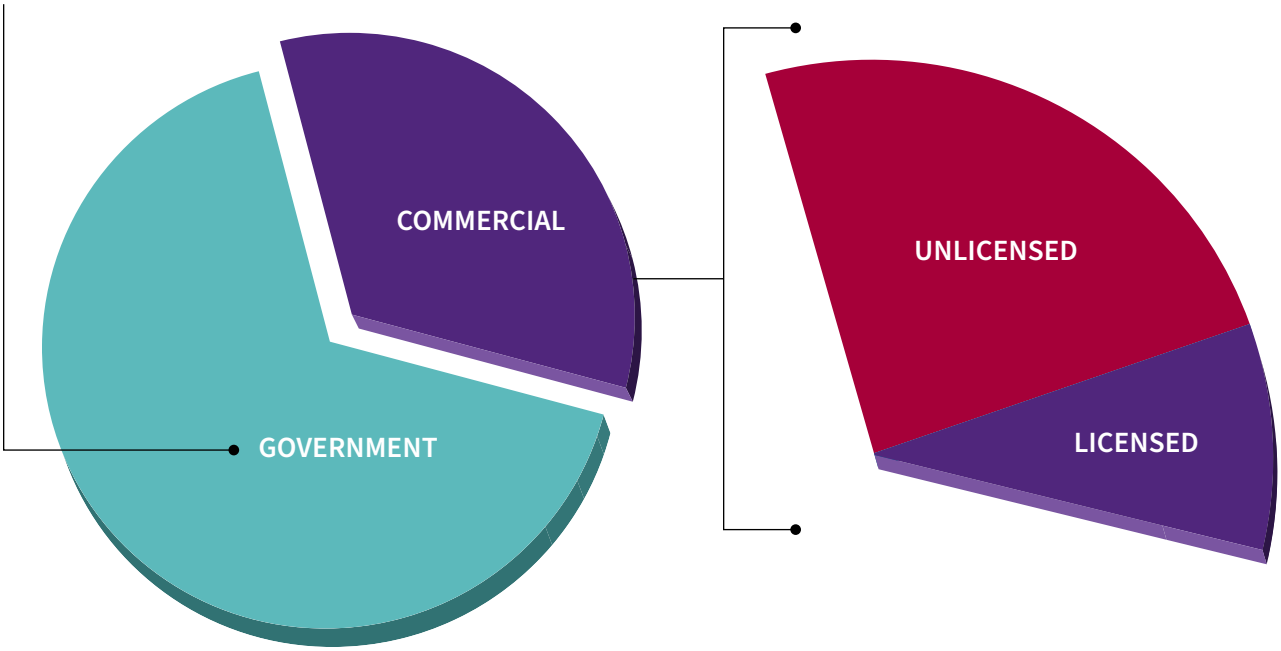
MID-BAND SPECTRUM OUT OF BALANCE

2/3

Federal government controls two-thirds of mid-band spectrum (3-8 GHz).

80%

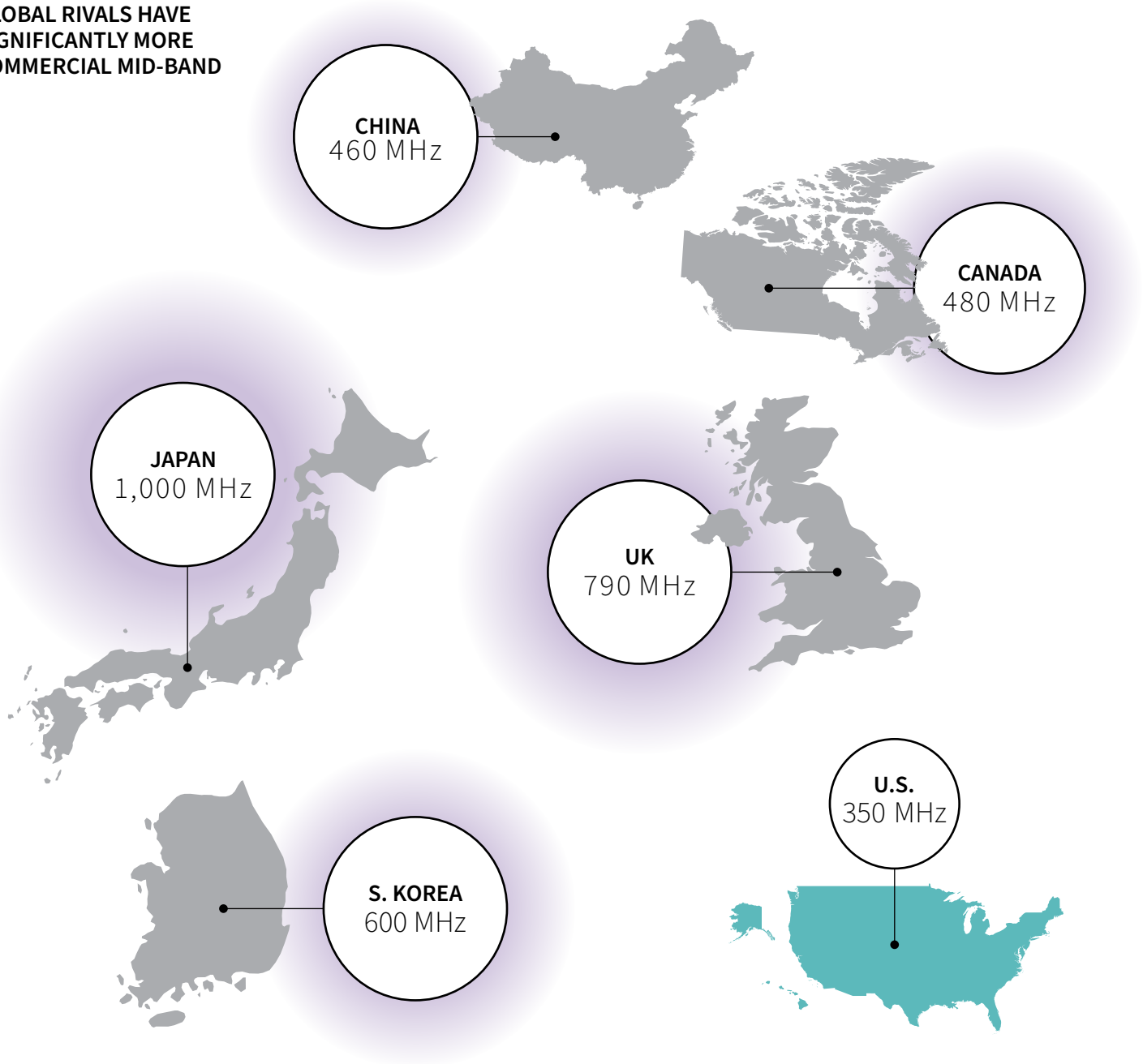
Over 80% of commercial mid-band access is unlicensed.



Seeking a Balanced Spectrum Policy

The U.S. needs to ensure robust spectrum access for government, military, and commercial usage. Commercial spectrum must support wireless service, unlicensed services, broadcasters and satellite users. Despite work across Administrations, the federal government controls roughly two-thirds of key mid-band spectrum and the amount of mid-band spectrum designated for unlicensed use eclipses licensed use almost four to one. Access to more licensed wireless spectrum is key to U.S. 5G leadership, and should be an immediate priority.

GLOBAL RIVALS HAVE SIGNIFICANTLY MORE COMMERCIAL MID-BAND



Global Rivals Lead on Mid-Band Spectrum

Nearly every 5G deployment outside the U.S. relies on mid-band spectrum. Despite the good progress made in the past two years and the auction of 350 megahertz of mid-band spectrum, the U.S. will still trail key rivals. To close the gap, the United States will need to roughly double the amount of licensed mid-band available for commercial use. On average, the U.S. will face a global deficit of 310 megahertz by 2022. The record setting C-Band auction shows the overwhelming need for more licensed mid-band spectrum.

"We need to press our federal partners to work collaboratively with us to open more mid-band spectrum for new commercial use."

— Jessica Rosenworcel
FCC Acting Chairwoman

Refilling the Spectrum Pipeline

The Administration should develop a clear spectrum pipeline of future spectrum auctions and execute on those bands already identified for future commercial use. A set schedule of future auctions is key to providing the certainty needed to invest. The New York Times bluntly concluded "developing a functional national 5G network strategy cannot wait any longer," and it is imperative to provide operators a defined roadmap of future spectrum availability.

KEY RECOMMENDATIONS

Refill the spectrum pipeline. Policymakers should establish a long-term spectrum plan and auction schedule to unlock thousands more megahertz of low-, mid-, and high-band licensed spectrum to fuel 5G.

Execute on immediate priorities. Policymakers should ensure the auction of federal spectrum at 3.45-3.55 GHz for full power commercial 5G operations in 2021, and clearance of at least another 150 megahertz of lower 3 GHz spectrum during this Administration. The recently auctioned C-Band should be cleared for wireless use on schedule.

Prioritize licensed, exclusive use. Congressional action on a new pipeline plan must happen before the expiration of FCC auction authority in 2022. Licensed, exclusive use spectrum has been key to U.S. wireless leadership and must remain the priority. Complex and novel sharing experiments risk higher costs, delayed network builds, reduced 5G capacity, and limited funding to support modernized government systems.

The DoD National Network Fallacy

Our 5G leadership is thanks to $100+ billion in private capital invested in the past few years alone and robust competition. The private sector should continue to lead in building 5G across the U.S. and the FCC should remain the authority over commercial spectrum access. Policymakers should reject the idea of a government-led, nationalized wholesale network, or any solution in which the military sets the terms for commercial usage. Such proposals are incredibly risky and would be bad for connecting rural America, bad for U.S. military readiness, and bad for consumers.

Neither DoD—nor any company promising a nationalized 5G network—can start from scratch and build a nationwide network that meets consumer's needs in less than three years' time, with no fiber, no towers, and no plan to start. Other countries experimented with nationalized networks and failed. For example, in 2011, Russia gave away spectrum to a company that promised lower prices and sweeping deployments via a wholesale network built with Huawei equipment. Three years later, that company gave up after reaching barely a quarter of Russia.

KEY RECOMMENDATION

Restore spectrum management processes. Policymakers should reaffirm the leadership of the FCC to manage commercial spectrum and NTIA to manage government spectrum. These spectrum experts must collaborate with a common objective, rejecting radical ideas like 5G nationalization or DoD-control of commercial spectrum.

"The Department of Defense's [proposal] on the creation of a government-owned and operated 5G network will do nothing but slow the deployment of this critical technology."

— Chairmen Frank Pallone (D-NJ) & Mike Doyle (D-PA)

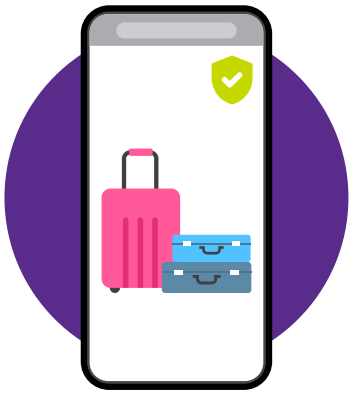
Protecting Americans Online

The wireless industry is committed to protecting the safety and security of Americans using wireless services.

5G SECURITY ADVANCEMENTS

ENCRYPTION & SOFTWARE ADVANCEMENTS

5G will employ enhanced encryption technologies and resilient virtual systems.



SECURITY ALWAYS ON

5G security travels with you protecting you no matter whether you are on Wi-Fi, Bluetooth, or another wireless network.

PERSONALIZED SECURITY

5G offers device-specific security updates and network slices that let users set their security parameters.

Protecting Wireless Networks and Consumers

Every day, the wireless industry invests in people and technologies that protect our customers and networks from cyber threats. The entire wireless ecosystem works together to develop advanced and ever-improving security features. 5G will be the most secure generation of wireless technology, having built in innovative security features from the beginning. To succeed, we need to retain a flexible approach build on industry-led efforts that avoid mandates, which would quickly become outdated as threats evolve.

KEY RECOMMENDATION

Retain a collaborative approach. Policymakers should retain close public/private collaboration—led by DHS—and technology-neutral approaches to identifying, mitigating, and responding to evolving global cyber threats.

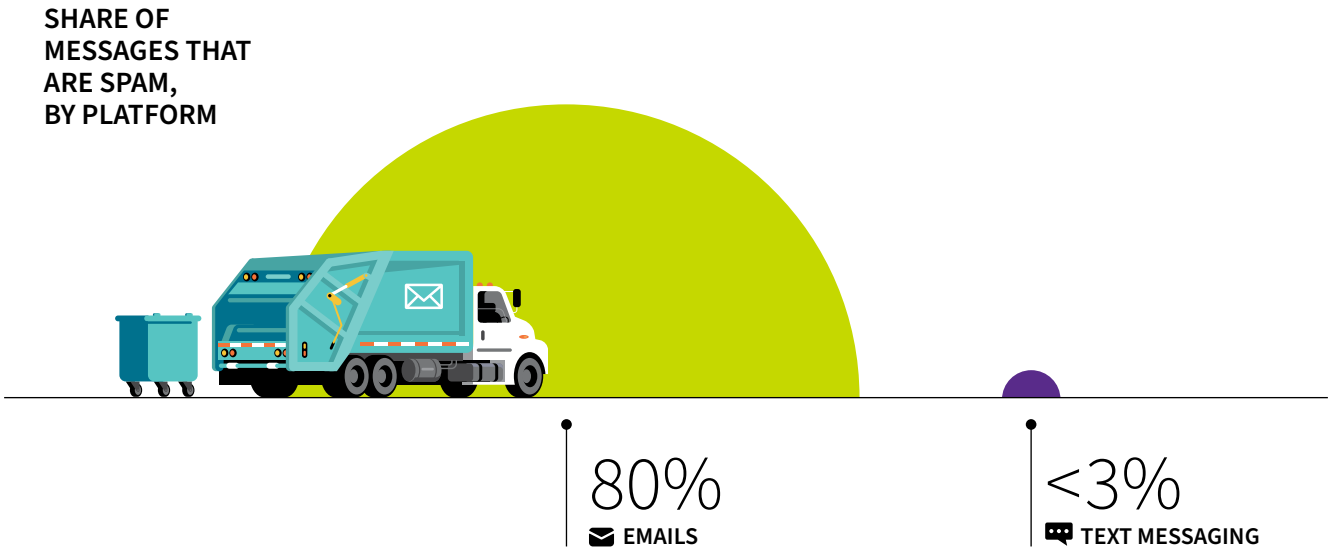
Bolstering A Secure Supply Chain

There is no Huawei gear in U.S. 5G networks and the U.S. wireless industry works closely with national security experts to help safeguard America. We are showcasing to the world the ability to thrive with a trusted, safe, and secure supply chain. The U.S. has made progress working with allies to limit vulnerable equipment going into next-generation networks. At the same time, there is significant investment in software-based solutions and American manufacturing that can help ensure the long-term viability of our supply chain.

KEY RECOMMENDATIONS

Drive supply chain innovation. Policymakers should promote trusted suppliers and the development of software-based solutions. They should also empower DHS to work collaboratively with industry to develop sustainable principles for evaluating supply chain partners, practices, and potential threats.

Promote global security. Policymakers should encourage other nations to adopt global industry standards for secure supply chain management and encourage fair market business practices.



Fostering a Safe Environment

The wireless industry works hard every day to protect wireless consumers and enhance their safety.

Fighting Robocalls. Robocalls are automated phone calls. Many robocalls are annoying and illegal. That's why providers block billions of illegal calls from reaching consumers and provide tools to help consumers control their experience. You may have seen robocalls marked as potential spam calls on your phone. To build on those efforts and further stem illegal robocalls, wireless providers are investing in efforts to deploy digital call signatures, leveraging machine learning, investigating suspicious call patterns, and partnering with law enforcement.

Minimizing Spam Texts. Text messaging is one of the most trusted forms of communication. Fewer than 3 percent of texts are spam thanks to these efforts compared to over 80% of your email box on average. To keep it that way, the industry leverages filtering software, machine learning tools, analytics tools, and our Messaging Principles and Best Practices.

KEY RECOMMENDATION

Empower providers to protect consumers. Policymakers should ensure providers have mechanisms and the safe harbor protections needed to safeguard consumers from illegal and nuisance calls. Providers should be encouraged to expand call authentication and robocall and robotext mitigation efforts to reduce spam and phishing attacks. Law enforcement should aggressively pursue bad actors.

Responding to Emergencies

Wireless providers have invested significant resources to strengthen and harden networks. Industry response has also greatly improved thanks to the voluntary industry Wireless Resiliency Framework promoting mutual aid and planning. To prepare networks to withstand the increasing intensity and frequency of major natural disasters, wireless providers are adopting new network planning tools that analyze climate-related scenarios, improving the physical resiliency of cell sites to withstand harsh conditions. The wireless industry also continues to enhance coordination efforts with the power industry and local governments.

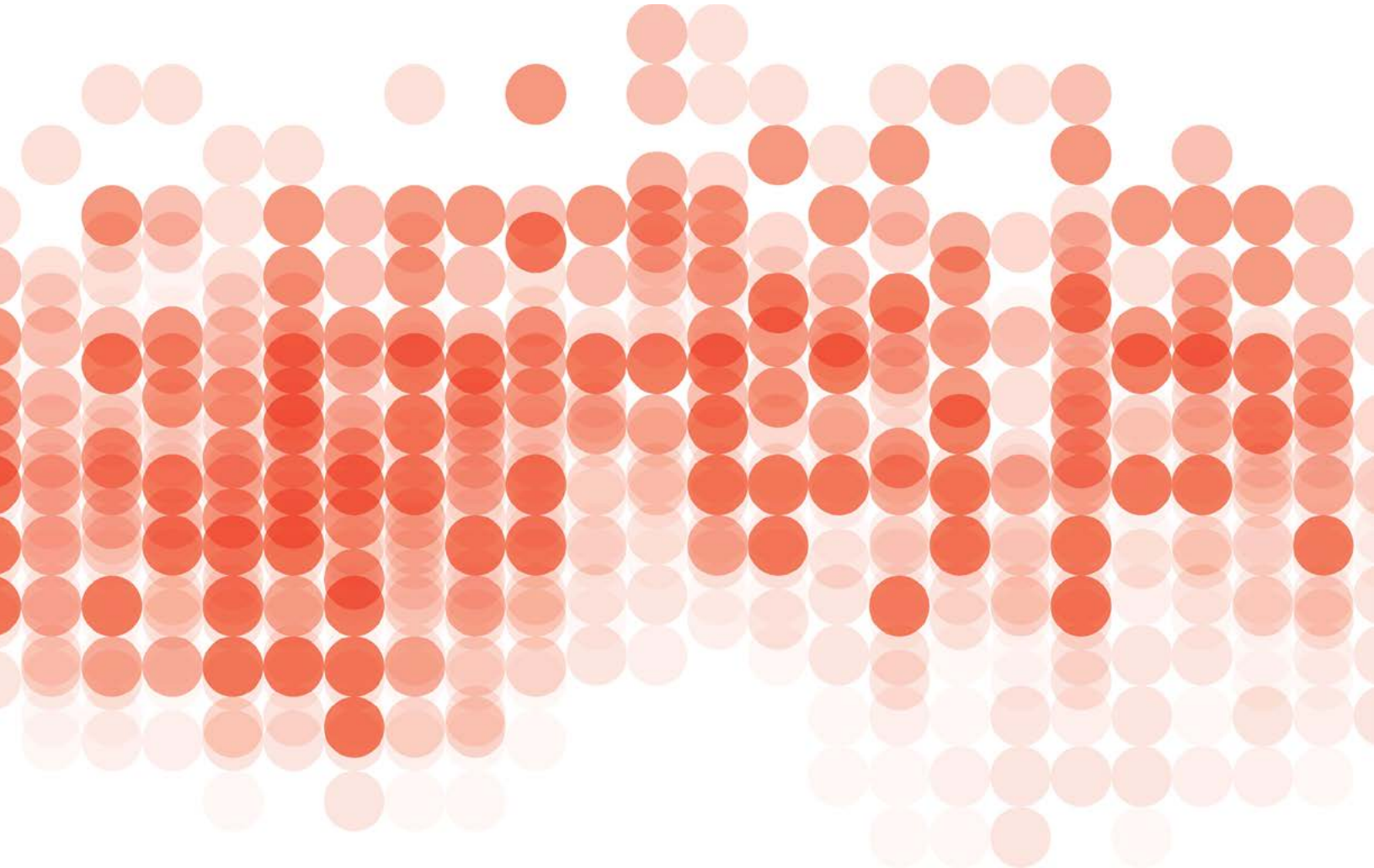
KEY RECOMMENDATIONS

Promote proactive disaster management. Policymakers should foster the flexible industry-driven approach and avoid one-size-fits-all mandates that may be poorly suited for particular communities or disaster responses. Federal and local policymakers should ensure wireless industry workers are deemed essential and can respond quickly to emergencies.

Modernize 911. The majority of 9-1-1 calls now come from wireless phones. Policymakers should embrace the nationwide deployment of next-generation 911 solutions and commercial handset-based technologies that can provide first responders with the actionable information needed to save lives.

Key Recommendations and Resources

The wireless industry stands ready to help jumpstart our economic recovery and tackle the most difficult policy challenges facing our nation. We will invest tens of billions of dollars into our nation's future and do our part to connect all Americans with the help of the Administration and a robust spectrum policy.



Key Policy Recommendations

Spectrum

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Restore spectrum management processes. Policymakers should reaffirm the leadership of the FCC to manage commercial spectrum and NTIA to manage government spectrum. These spectrum experts must collaborate with common objectives, rejecting radical ideas like 5G nationalization or DoD-control of commercial spectrum.

Incentivize better federal spectrum management. Federal agencies should have additional tools to help them manage spectrum more efficiently and evaluate potential commercial access.

Digital Divide

Deliver on the 5G Fund. Policymakers can help reach unserved areas by providing targeted support to wireless providers to bring service to the hardest to reach areas. The FCC's 5G Fund will accelerate deployment of next-generation wireless services to Americans unserved today. The key to properly targeting government funding is accurate broadband maps, and we support FCC action on the recently approved congressional funding.

Close the homework gap. Despite significant efforts from schools and wireless providers, there remain too many children without access to broadband at home today. We should make a national commitment to connecting all schoolchildren and provide congressional funding for mobile hotspots to close that gap once and for all.

Modernize siting rules. To roll out wireless quickly, efficiently, and farther, policymakers at all levels of government should update infrastructure siting processes and build on reforms already instituted by the FCC and over 29 state governments to provide more certainty to all stakeholders.

Update low-income support. A modernized low-income program can help address affordability challenges by providing consumers with more choices to meet their diverse needs. We encourage policymakers to work with broadband providers to develop solutions that empower consumer choice.

Find an equitable funding mechanism. Our collective effort to shrink the digital divide could bring greater pressure on the FCC's Universal Service Fund. We support efforts to ensure that the Universal Service Fund has a stable and equitable funding support mechanism that is not regressive and is technologically neutral.

Protecting Consumers

Retain a collaborative cyber approach. Policymakers should retain close public/private collaboration—led by DHS—and technology-neutral approaches to identifying, mitigating, and responding to evolving global cyber threats.

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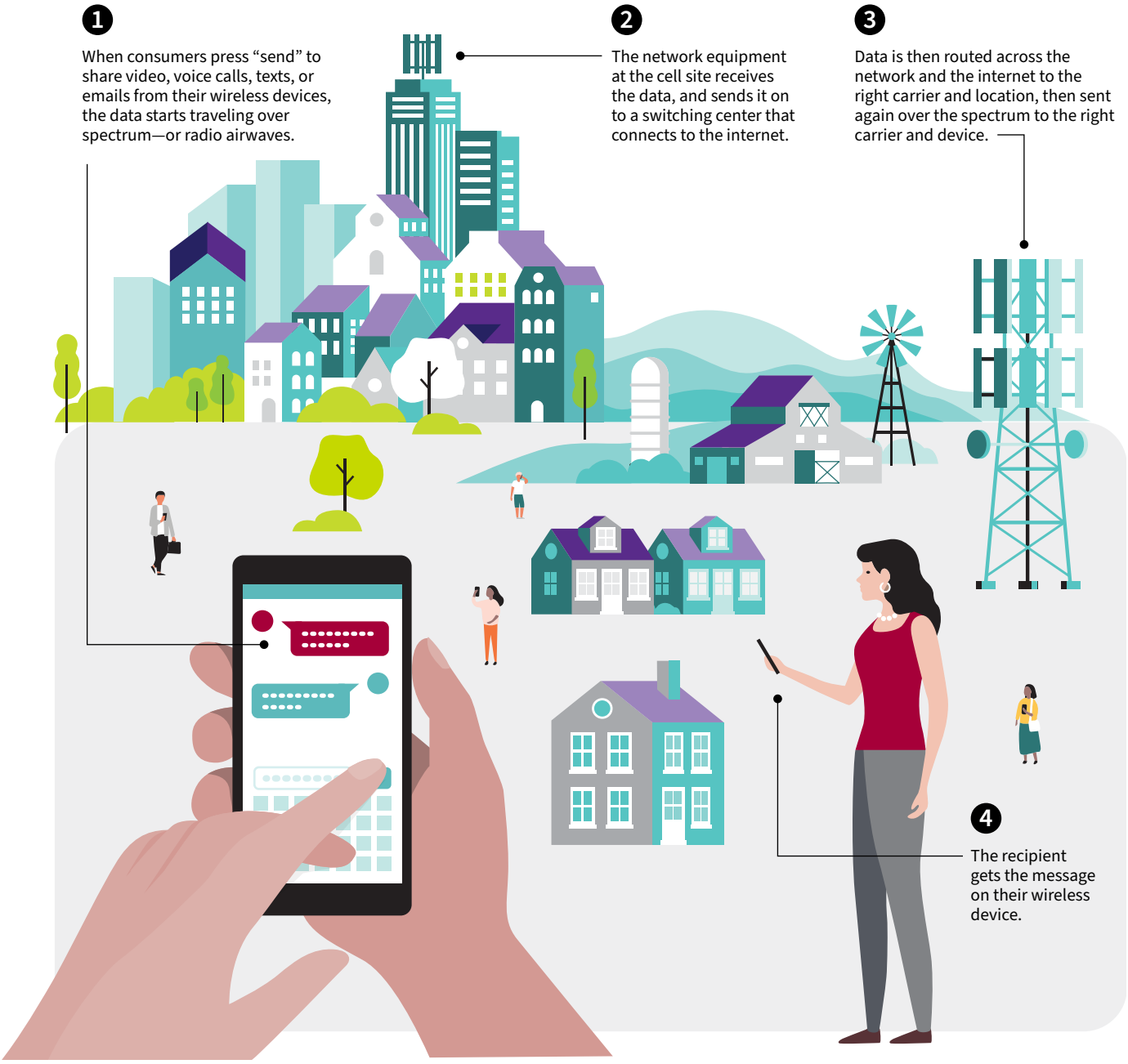
A National Internet Framework

Establish comprehensive privacy rules. Policymakers should enact a national privacy framework to protect consumer data. It should be centered under the Federal Trade Commission, treating consumer information consistently across platforms and applications, minimizing consumer confusion and ensuring all players in the internet ecosystem can compete on a level playing field with one set of national rules.

Safeguard an open internet. The wireless industry supports an open internet. Congress should ensure net neutrality principles outside of Title II to protect consumers online while facilitating innovation and investment in next-generation networks and services.



How Wireless Works

Wireless networks are built using a complex series of servers, antennas, and other equipment to send signals, via spectrum, between devices—and to and from the internet.

Wireless Safety

The scientific consensus is that there are no known health risks from all forms of RF energy at the low levels approved for everyday consumer use. All wireless devices sold in the U.S. must go through a rigorous approval process to ensure they meet the science-based guidelines set by the FCC. These guidelines—based on internationally-recognized scientific organizations—set limits for the maximum amount of RF exposure from wireless devices and include a significant margin of safety.

In December 2019, the FCC reaffirmed—on a unanimous and bipartisan basis—that its safety standards "ensure the health and safety of workers and consumers of wireless technology," and that "no scientific evidence establishes a causal link between wireless device use and cancer or other illnesses." Typical exposure to 5G devices—such as small cells attached to phone poles or the sides of buildings—is far below the permissible levels and comparable to Bluetooth devices and baby monitors. The FCC continues to monitor the science to ensure that its regulations are protective of public health.

More information is available at wirelesshealthfacts.com.

> "[T]he RF waves given off by cell phones don't have enough energy to damage DNA directly or to heat body tissues. Because of this, it's not clear how cell phones might be able to cause cancer."
>
> **— American Cancer Society (2018)**

> "We have relied on decades of research and hundreds of studies to have the most complete evaluation of radiofrequency energy exposure. This information has informed the FDA's assessment of this important public health issue, and given us the confidence that the current safety limits for cell phone radiofrequency energy exposure remain acceptable for protecting the public health."
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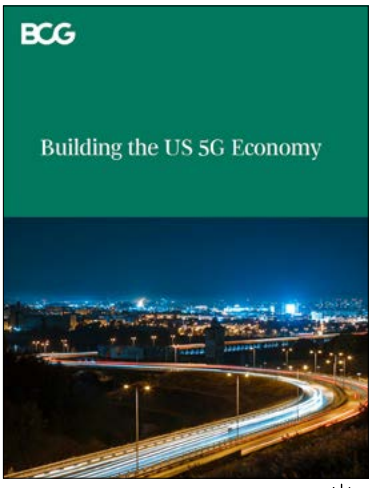
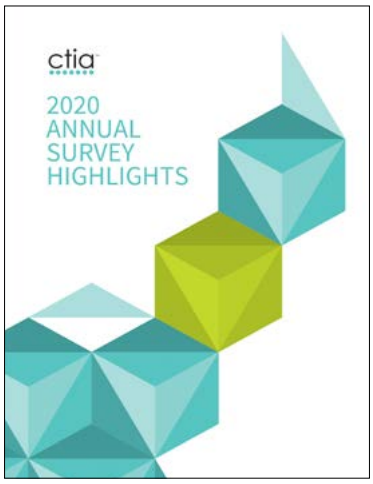
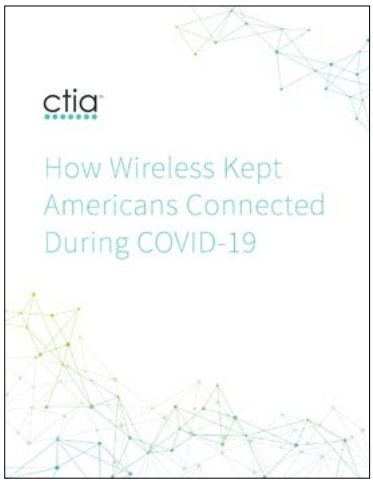
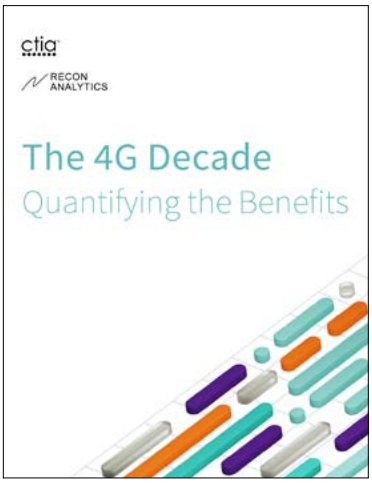
> **— Director of the FDA's Center for Devices and Radiological Health (2018)**

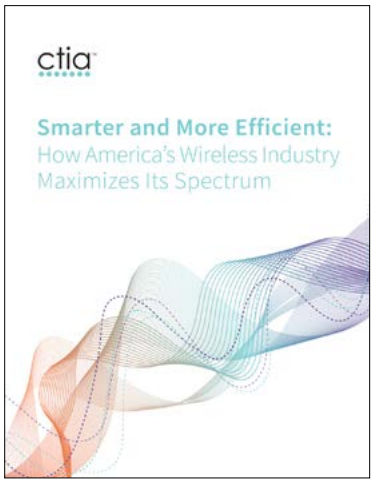
Key Resources

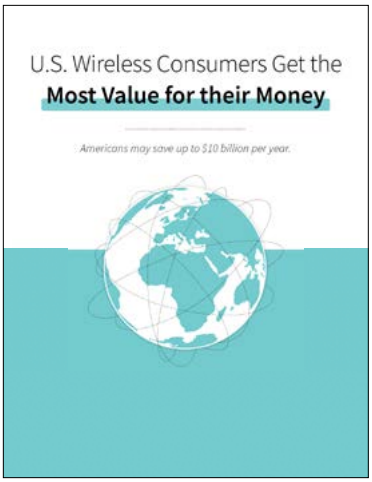


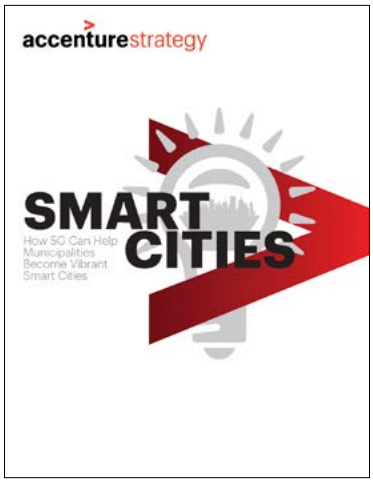


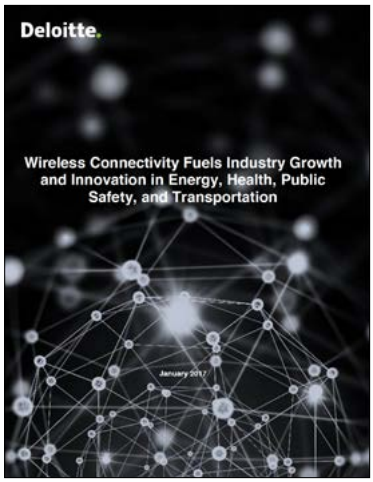












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