

**REMARKS OF FCC CHAIRMAN AJIT PAI
AT THE MOBILE WORLD CONGRESS**

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It's great to be back at the Mobile World Congress here in Barcelona. And it's an honor to be part of such a distinguished panel.

Ours is the last keynote session of a long first day. There have already been panels on the Internet of Things, AI, blockchain, robotics, and smart cities. So as we approach nightfall, I'm reminded of a popular line back in Washington, "Everything has been said, but not everyone has said it."

There is little I could say about the power and promise of next-generation wireless connectivity that would be novel. So I'll tackle a topic where I hope to offer some unique insight: What is America's strategy for seizing the 5G future?

Our overall philosophy is founded on a simple but profound premise: The market, not government, is best positioned to drive innovation and investment in the wireless sector. Government's role is not to command and control, but to enable and encourage: to promote competition by maximizing carriers' willingness and ability to invest in their networks, to free up spectrum for wireless services and make it available for flexible use, and to make it easy to deploy the physical infrastructure necessary for networks to work.

The historic success of America's wireless marketplace shows why this is the right approach. We've seen hundreds of billions of dollars in private investment. We have consistently been at the forefront of mobile innovation. And our consumers are leading a wireless revolution as smartphones increasingly become the critical gateway to the online world.

Yet past need not be prologue. And so, despite tremendous American success in 4G, we aspire to lead the world in 5G. Make no mistake about it: I want the United States to be the best country for innovating and investing in 5G networks. I want American entrepreneurs to push the boundaries of the possible and American consumers to benefit from next-generation technologies.

To accomplish this—and consistent with our market-based philosophy—the FCC is pursuing a wireless strategy built on three pillars: (1) spectrum, (2) infrastructure, and (3) light-touch network regulation.

I'll start with spectrum. After all, *everything* at GSMA seems to start with spectrum.

One of the game-changers for 5G is that new technologies have made it possible to use millimeter-wave spectrum for mobile broadband. But a comprehensive spectrum strategy for 5G requires freeing up all kinds of airwaves—low-, mid-, and high-band.

On low-band spectrum, we've finally completed the first-ever incentive auction, and we've granted wireless licenses in the 600 MHz band to the vast majority of the auction's winners. T-Mobile has already started offering service in this band, and it plans to use this spectrum to deploy nationwide 5G by 2020.

On mid-band spectrum, we've adopted new sharing tools in the 3.5 GHz band to make 150 MHz of spectrum available for mobile broadband. Shortly after becoming Chairman, I asked Commissioner O'Rielly, who is also here in Barcelona, to lead a review of our rules for that band. We want to make sure those rules maximize interest and investment. This spectrum will be available for all purposes, including 5G, and we'll let the market decide the most efficient use. We're also looking closely at the 3.7 to 4.2 GHz band. This is a large chunk of spectrum that holds much potential for wireless service. So

I'm pleased to announce today that in the coming months, I intend to propose the next steps needed to make the 3.7 to 4.2 GHz band available for commercial terrestrial use. Also, Sprint announced earlier this month that it intends to deploy 5G on a nationwide basis next year using its 2.5 GHz spectrum holdings.

Obviously, a lot of the 5G action has been around high-band spectrum, so let me briefly recap what we've done, and fill you in on what's to come.

Our 2016 *Spectrum Frontiers Order* opened up nearly 11 GHz of spectrum in the bands above 24 GHz for mobile use. Since I was last here, we followed up by making an additional 1,700 MHz of millimeter wave spectrum in the 24 and 47 GHz bands available for terrestrial 5G wireless use. We have set the stage for 5G experimentation.

And U.S. carriers are playing their parts by making aggressive plans to introduce 5G service using high-band spectrum. Verizon has announced that it will begin its first 5G commercial rollout in Sacramento, California in the second half of 2018. Just last week, AT&T announced its first 5G commercial rollouts will debut later this year in Atlanta, Dallas, and Waco, Texas. And just three days ago, the FCC granted to Samsung the world's first regulatory approval of 28 GHz base stations which will be used for a fixed wireless access 5G commercial solution.

To get spectrum into the hands of companies that are going to use it for 5G, the FCC has already approved secondary market transactions this year involving 28 and 39 GHz spectrum. These deals aim to promote the highest-valued use of these bands.

But we recognize that the secondary market is indeed secondary to the primary goal, which is getting allocated spectrum bands ready for auction. We've been working hard at the FCC to do what we need to do to make that happen.

And in that regard, I'm excited to announce today that it is my intention for the United States to hold an auction beginning this November of spectrum in the 28 GHz band, followed immediately thereafter by an auction of spectrum in the 24 GHz band. To set the foundation for these auctions, the FCC will ask for public input this spring on the right procedures for these auctions.

Now, there is one caveat to this schedule. In order for us to start an auction in November, we need the U.S. Congress to pass legislation by May 13 addressing the handling of upfront payments. Until now, this technical issue hasn't impeded the FCC's work because we've been busy getting spectrum we've already allocated ready to be auctioned. But we're now ready to move forward with a major spectrum auction, and if we don't get the problem fixed by May 13, our efforts to realize America's 5G future will be delayed. I'm pleased that Congress is making bipartisan progress on this issue and am hopeful that we'll be able to kick off a major spectrum auction in November.

I also want to make one last point on spectrum: Unlicensed spectrum can pay great dividends in terms of wireless innovation and consumer benefits. That's why many of you are using Wi-Fi as I speak. And that's why the FCC is committed to making more spectrum available for the next generation of unlicensed use.

Last year, we began to explore unlicensed use in the 6 GHz band. We are actively reviewing the public's input. And I'm confident that we will be able to move forward by year's end. We also want to make unlicensed spectrum more usable for all technologies. For instance, last year, we authorized the first-ever LTE-U devices in the 5 GHz band. These devices allow carriers to deliver mobile data traffic using unlicensed spectrum, while sharing the road with Wi-Fi.

That's enough on spectrum. Let's talk about the second prong of our wireless strategy: infrastructure. We know that 5G is going to be infrastructure-intensive. Some project a 100-fold increase in small cells deployed in the United States alone. We also know that regulations designed to address the siting of 200-foot cell towers are a poor match for small cells.

So we've launched a comprehensive review of our infrastructure regulations. We want to remove outdated rules and make it easier to deploy wireless infrastructure. This review is ongoing, but we've already eliminated some rules that don't make any sense. For example, we used to require an extensive historic preservation review process just to replace an old utility pole with a newer one that's substantially identical. Not anymore.

And there's more to come. I have asked Commissioner Carr to lead on modernizing our wireless infrastructure rules. Watch for an announcement on our next steps in the very near future.

Of course, 5G infrastructure isn't just about small cells; it's also about backhaul. Densified networks will require much more fiber. On that front, we've been extremely busy laying the foundation for the 5G future. We've launched an initiative to remove barriers to wireline broadband deployment, which addresses issues like easier and cheaper ways to attach equipment to utility poles. We've also updated our rules for high-speed, dedicated services by lifting rate regulation where appropriate. And we're encouraging companies to shift investments away from fading copper lines toward high-capacity fiber. In sum, we are creating huge incentives for the private sector to invest in the 21st-century networks used for backhaul. These policies are essential. For all the spectrum we devote to 5G won't be put to good use if the physical networks to carry 5G traffic are never built.

The third pillar of our wireless strategy is closely related to infrastructure challenges: market-based network regulation. Without question, our most important move here was to reverse the previous Administration's decision to subject our 21st century networks to 20th century utility-style regulation. Because there's been a fair amount of misinformation spread about this topic, let me briefly discuss what our order restoring Internet freedom did and didn't do.

America's Internet economy became the envy of the world thanks to a market-based approach that began in the mid-1990s. Even though there was no market failure, the previous FCC abruptly imposed unnecessary, heavy-handed regulation in 2015. This past December, we decided to end this three-year experiment with utility regulation and to restore the same basic policy framework in the United States that governed the Internet for most of its existence—from 1996 until 2015. Let me repeat this point: The *Restoring Internet Freedom Order* merely restored the same basic framework that governed the Internet for most of its existence.

I want to stress that this is light-touch regulation—not a completely hands-off approach. Nobody gets a free pass. The United States is simply making a shift from pre-emptive regulation, which foolishly presumes that every last wireless company is an anti-competitive monopolist, to targeted enforcement based on actual market failure or anti-competitive conduct. Most importantly, we have restored the jurisdiction of the Federal Trade Commission over Internet service providers. And the FTC will now be able to consistently protect competition and consumers across the Internet economy—with respect to ISPs and edge providers alike. The bottom line is simple: We had a free and open Internet for two decades before 2015, and we *will* have a free and open Internet going forward.

We believe that our decision will give the private sector greater incentives to invest in the 5G networks of the future and bring greater digital opportunity to the American people. And we also believe that our decision is critical for another reason as well. To realize the promise of 5G, we will need smart networks, not dumb pipes. Dumb pipes won't deliver smart cities. Dumb pipes won't enable millions of connected, self-driving cars to navigate the roads safely at the same time. In short, dumb pipes won't give us the networks needed to enable the 5G applications of the future. As a result, to lead the world in 5G, the United States needs modern, flexible, light-touch network regulation, not a one-size-fits-all utility model from the 1930s.

Another key reason for a light-touch regulatory approach is that the U.S. wireless marketplace is extremely competitive. The vast majority of Americans can choose from four LTE providers. Switching costs are minimal. Companies are vigorously trying to appeal to consumers on price and service. The

four national carriers now offer unlimited data plans. And they're partnering with content companies to deliver even more value—often for free—to consumers. If you don't believe this market is competitive, just try watching the commercials shown during a typical hour of American television. The wireless market is not remotely in need of preemptive, utility-style regulations.

So: forward-thinking spectrum policy, modern infrastructure policy, and market-based network regulation. That forms the heart of our strategy for realizing the promise of the 5G future.

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At the dawn of the 20th century, Nicola Tesla saw a bold mobile future: “When wireless is fully applied the earth will be converted into a huge brain, capable of response in every one of its parts.” Today, at the dawn of 5G, Tesla's vision increasingly seems more practical than preposterous. And consumers the world over stand to benefit like never before if that vision is realized.

This week, I look forward to learning from and working with you to advance the 5G future. No one of us has all the answers, but we do face similar challenges. That's why it is so important that we engage with one another here and stay engaged when we return home.

And for some issues like spectrum, we simply cannot go it alone. We must work together to identify spectrum policies that will enable innovation and investment in new wireless technologies and services. If we do that, the earth will be connected (if not converted), and everybody will win.

Let's get to work!