

REMARKS OF FCC COMMISSIONER BRENDAN CARR

“A MODERN REGULATORY APPROACH TO 5G”

AT THE TRANSATLANTIC POLICY DIALOGUE

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It's great to be back in Barcelona for the world's largest wireless conference. And it's an honor to join once again with regulators from around the world to help kick off this week's events by talking about 5G.

Although we represent diverse countries—different geographies, different stages of broadband deployment, different politics—when we gather together I am always struck by how many policy challenges we share. Among them:

How do we identify the coming trends in mobile technology?

How do we harness those new technologies for the benefit of the citizens we serve?

And what fresh thinking can we bring to our regulations so that we keep up with the dynamism in the tech economy?

One year ago, when I was last here in Europe, we discussed some of these same challenges. We discussed our shared goal of seeing 5G deployed in our countries as quickly and ubiquitously as possible. And I talked about the need for the U.S. to update its regulatory structures to accelerate 5G deployment. In short, we had work to do back in the States.

One year later, I want to provide an update on the significant progress we've made in the U.S. to update our infrastructure rules. And I want to share some of the results we're already seeing, including Internet speeds that are up 40% and 5G networks that are being built in the U.S. at an accelerated clip.

I am also eager to listen and learn about the policy changes you are working on to promote the deployment of next-generation broadband networks in countries around the world.

And there's no better time to be having this discussion. The world is demanding fast, mobile connections like never before.

Last week, Cisco estimated that for the first time ever, a majority of all mobile devices worldwide are smartphones. This is critical because we know that when a typical user trades up for a smartphone, her mobile data consumption grows ten-fold. The transition to a smartphone world—and especially all of the video content watched in it—explains the insatiable demand

we're seeing for more and more data. Mobile traffic grew by 71% in 2017, and Cisco projects that we will see a compound growth rate of 46% per year through 2022.

Our wireless networks, as they exist today, cannot handle this coming volume of data. Nor can they perform at the level needed to power the technologies of the future—including those being demonstrated just a few paces from here in this convention center. The fullest vision of IoT sees smart devices scattered throughout Smart Homes, in Smart Cities, and across Smart Ag. Our current 4G networks can't serve that density of devices. The fullest vision of real-time networked experiences—from gaming, to virtual reality, to autonomous vehicles—requires networks with nearly zero latency. Even advanced 4G networks can't promise that.

To meet the needs of the people we serve, we need next-gen networks. We need 5G.

5G meets the need for real-time network communication by cutting latency by a factor of 10. 5G meets the need for speed and volume by boosting speeds by a factor of 20 and by running on previously fallow spectrum (and using it more efficiently). And 5G meets the need to connect more devices than ever before by boosting device capacity by a factor of 1,000.

Although the benefits of 5G are compelling, the network upgrade won't happen evenly or everywhere unless we get the right regulatory structures in place. After all, many of the largest cities in the U.S., like those here in Europe, might see 5G almost regardless of the regulations we adopt. But that's not success. We want to see next-generation broadband and the economic opportunity it enables available in every community. And smart infrastructure policies are key to doing that—they can flip the business case for thousands of communities. That's why we've been so focused over the last year at the FCC on updating our broadband infrastructure rules.

I want to highlight two of the significant reforms we adopted last year.

First, we updated our approach to the federal historic and environmental rules that govern the buildout of broadband infrastructure. We did so because our old rules assumed that every new cell site is a large, 200-foot tower. Those rules made no sense when you're talking about the backpack-sized small cells that are needed to support 5G networks. They threatened to slow down and delay the deployment of next-generation networks. So we updated our environmental and historic preservation rules to reflect new technology.

Second, we examined impediments to infrastructure buildout imposed by city and state governments. We sought to respect the deep tradition of federalism in America, while providing updated guidance on the limits Congress placed on local governments' small cell approval processes. We clarified that the fees governments charge for siting small cells in rights-of-way must not exceed a reasonable approximation of their costs, and we tightened the shot clocks for approving small cell applications so that we can get this infrastructure up more quickly.

Those two actions alone are estimated to save \$3.6 billion — money that can be reinvested in new towers and poles. And we're already beginning to see the results.

One American provider reports that they're clearing new small cells for construction at six times the pace as before the FCC's decisions. Another says they're doubling the number of cells sites they're building. And another projects that the decisions will increase capital spending this year by around \$1 billion to accelerate investment in 5G.

5G is live today in 14 American cities. By the end of this year, that number could triple. And Cisco projects that North America will have the most advanced 5G market over the next three years with the U.S. seeing more than twice the percentage of 5G connections as Asia. The company credits the FCC's regulatory reforms for putting the U.S. in this new position.

Speeding the buildout of next-gen networks is important to American policymakers, like those I serve with at the FCC. I would be fibbing if I told you it had nothing to do with our competitive streak. The economists among us often are motivated by the big numbers we hear attached to 5G—that our advanced 4G network spurred a \$950 billion app economy, that leading in 5G could net another \$275 billion to the U.S. GDP.

These are important figures, no doubt. But as I've spent the last year on the road talking 5G, I've heard something else. You see, in the last year or so as a Commissioner at the FCC, I've chosen to spend a significant number of my days outside of Washington because I think it's important to connect our wonky policy debates with the people we affect. My travels have taken me to the northernmost point in the United States—a small fishing village in Alaska—to towns in the southern Gulf Coast rebuilding their networks after hurricanes.

In all of those places, the promise of 5G that resonates most is choice. Americans understand this immediately when we talk about home Internet. 5G narrows the performance gap between wired and wireless service to the home. So Americans who feel like they have only one option for in-home broadband, may for the first time this year have two or more. Increasing competition for people's most-used Internet connection is wildly popular, I can tell you.

Wired Internet providers will not watch idly as wireless competes for their customers, either. Large cable companies in the U.S. have bought spectrum at auction and have created their own MVNOs. They are investing heavily in their own, upgraded wireline networks. Many seek to offload mobile traffic onto strand-mounted cells and WiFi. Others have built radio access networks themselves and are examining building more wireless facilities. And remember that dense small cell networks require high-capacity backhaul, which is one of the wired providers' strengths.

And over the top of whichever connection a family may be using, creators are reconfiguring, packaging, and selling their content in ways unimaginable a decade ago.

Put simply, we're in a tremendously disruptive time for connections and content, and that's very exciting for everyday consumers.

The flip side of this disruption, of all of these changes happening around us, is a real concern about jobs. Automation and AI; disintermediation and efficiencies and synergy—these all can begin to sound like C-suites plotting against good-paying jobs. The perception among

some in the U.S. is that the jobs benefits of next-gen networks will accrue to the coders and programmers on the coasts, and others will be left behind.

But that misreads the 5G jobs story. Yes, there will be 5G jobs for those wearing zip-up hoodies and white collared shirts. But just as important are all of those 5G workers with blue collars, or none.

5G workers like Brandon and Leland, who I met in Sioux Falls, South Dakota. Brandon and Leland are tower climbers. They throw 40-pound packs on their backs and scale towers to install radios and fix wiring. They have tough jobs, and without them, none of our communities would have access to fully mobile Internet.

5G will require a lot more Brandons and Lelands. The tower construction industry estimates that it will need to nearly double its workforce in order to upgrade America's networks to 5G. That's more than 20,000 solidly middle-class jobs—the kind of jobs that, in most parts of the country, you can raise a family on. And they're jobs that do not require four years at a university. In partnership with the federal government, a trade school in South Carolina can give students enough training to qualify them for a paying tower job, with on-the-job training to follow.

These are some of the opportunities that 5G can create for the people we serve. It can create diverse jobs, innovations that improve our lives, and more choices for connectivity. At the FCC, we have focused on spreading these opportunities to the maximum number of communities, under the mantra More Broadband for More Americans. We hope to continue executing on that goal with a modern regulatory approach: one that is inclusive, nimble, and attractive to investment and job creation. Thank you, and I look forward to continuing this discussion in the panels and meetings that will follow.