

**REMARKS OF
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WI-FI IN THE 5 GHZ FAST LANE
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Good morning. It is a treat to be here at the inaugural event for Wi-FiForward. Though your coalition is young, I think your impact will be big. After all, just being here together at the National Press Club is a terrific start. But an even more powerful statement comes from the sheer diversity of your members. From retailers to equipment manufacturers, Internet companies to chipmakers, software developers to public institutions, you represent so much of what is vital in the modern economy.

So what force has the power to bring this diverse group together? The power of unlicensed spectrum. And how powerful is it? Let me answer that by asking a single, simple question: Did you use unlicensed spectrum today?

The odds are that you did. It might have been the shiny new tablet or laptop you used to go online with Wi-Fi this morning. Or maybe it was the old cordless phone you dusted off to make a quick call. It could have been the baby monitor you used overnight, or perhaps it was the remote control you pressed to get out of the garage for your commute to work. It could have been the traffic application you checked on your smartphone before hitting the road. And it could have been the errand you ran at the store along the way, where RFID sensors help keep what you want on shelves and what you need in stock.

Every day, in countless ways, our lives are dependent on wireless connectivity. In fact, they are getting more dependent every day. Last year alone, we connected more than 500 million new mobile devices to the Internet.

All of this means that the demand for our airwaves is growing at a blistering pace. Indeed, the need for more licensed spectrum—the airwaves that can be controlled by a single wireless operator—has been widely recognized. In fact, this led Congress to direct the FCC to hold a series of auctions for licensed airwaves that will take place over this year and the next. But what is less well known is that demand for unlicensed spectrum—airwaves open to all under some basic technical rules—is also growing. So the spectrum that powers Wi-Fi and a slew of our daily activities and devices is also getting more congested.

So why does this matter?

First, the unlicensed economy represents economic growth. Residential Wi-Fi has been estimated to contribute between \$16-37 billion to our economy annually. To put that in perspective, that is more than Americans spend on milk and bread each year, combined. But even this understates the extraordinary power of unlicensed spectrum. Because more recent economic studies that add up the broader impact of unlicensed spectrum on the economy

estimate its annual value at more than \$140 billion. By any measure, that number is really, really big.

Second, the unlicensed economy represents innovation. The power of unlicensed is the power to innovate. That's because unlicensed airwaves are sandboxes for experimentation. Already countless technologies that make our lives easier and more convenient each day—from your garage door opener to your smartphone traffic application—were developed using unlicensed spectrum. Keeping airwaves open and available for unlicensed experimentation could yield a new world of gee-whiz devices and wireless services.

Third, the unlicensed economy represents Internet connectivity. Wi-Fi is an essential onramp to the Internet. But more than that, nearly one-half of wireless data connections are now offloaded onto unlicensed spectrum. This helps manage the flow of traffic on our licensed airwaves. Most of this Wi-Fi traffic uses the 2.4 GHz band. But the 2.4 GHz band is the home of countless other devices, including Bluetooth, wireless speakers, and video game consoles. While this unlicensed spectrum continues to serve Wi-Fi well, it is getting mighty crowded.

So I think the FCC should do something about it.

Let's start by leaving behind the tired notion that we face a choice between licensed and unlicensed airwaves. Because good spectrum policy requires both. Moreover, I think this kind of division is a simplistic relic from the past.

Just last week I had the privilege of being in Barcelona and being a part of the GSMA Mobile World Congress. I was able to speak to representatives of the wireless industry from across the globe. I got a good look at the future—and I saw wireless technologies that amaze. Cars that warn you even before they break down. Wearables that monitor your health down to the microsecond. Systems that monitor crops and predict problems with livestock. These devices do not rely on a single spectrum band to function. Instead, they overcome spectral and physical challenges by moving from frequency to frequency, sometimes on spectrum that is licensed and sometimes on spectrum that is unlicensed.

So I think we should take a page from this future. We should move beyond old dichotomies that pit licensed versus unlicensed spectrum. Because across the board we need to choose efficiency over inefficiency and speed over congestion. Because we can take steps that inspire innovation and meet the growing demand for wireless services—or we will fall behind.

And to help meet this demand for unlicensed services, we have a terrific near-term opportunity in the 5 GHz band.

It was in February last year that the FCC began to consider new opportunities in the 5 GHz band. The 5 GHz band already has a lot of players and already gets a lot of use. In fact, the Wi-Fi routers you may have in your home probably use part of the 5 GHz band, at 5.725-5.825 GHz. But there is more potential here for unlicensed, so we decided to take a fresh look. At the direction of Congress, and in conjunction with the National Telecommunication and Information Administration, we specifically asked about the 5.35-5.47 GHz and 5.85-5.925 GHz

bands. But at the same time we also noted the possibilities of expanding Wi-Fi in the lower portion of the 5 GHz band, namely 5.15-5.25 GHz. We pointed out that this could be done using an existing Wi-Fi technical standard known as 802.11ac.

Now fast forward several months. In July of last year, our counterparts at the Department of Defense penned an important letter about ongoing efforts to make the 1755-1780 MHz band available for licensed service in an upcoming FCC auction. But in some ways, this letter buried the lede. Because in it our federal colleagues noted that they do not need access to the 5.15-5.25 GHz band for telemetry—and acknowledged it could be made available for Wi-Fi use.

We should seize this opportunity right now. We can take the flexible Wi-Fi rules that have already been the script for an unlicensed success story in the 5.725-5.825 GHz band and expand them to the 5.15-5.25 GHz band. If we do, we could effectively double unlicensed bandwidth in the 5 GHz band overnight. That will mean more unlicensed service—and less congestion on licensed wireless networks. That's win-win.

But expanding unlicensed service in this band should not be the end of the story. Because we can seize unlicensed opportunities across other spectrum bands, too. For instance, we can explore the possibilities of using unlicensed bandwidth in the 3.5 GHz band. We also should find lawful ways to use guard bands in the 600 MHz spectrum now used by broadcasters.

So if we get our unlicensed spectrum policies right, we can seriously expand Wi-Fi opportunities. We can grow the future mobile economy. And we can give a jolt to the Internet of Things and the innovative possibilities of machine-to-machine communications.

But above all, the time to act is now—and expanding unlicensed service in the 5 GHz band at 5.15-5.25 GHz is a great place to start. Given the multiplying number of wireless devices in our lives and the growing demand on our airwaves—licensed and unlicensed—now is not a moment too soon. I think the members of Wi-FiForward know this. I think all of us who used unlicensed spectrum today know this. And I, for one, can't wait to make it happen.

Thank you.