

**REMARKS OF FCC COMMISSIONER AJIT PAI
AT THE INTERNATIONAL INSTITUTE OF COMMUNICATIONS FORUM**

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Thank you for this opportunity to address the International Institute of Communications. The IIC has long been an independent, neutral platform for discussing the converging telecommunications, media, and technology markets. And it's a particular privilege to address the United Kingdom chapter, the organization's first. But I must confess that I was little disappointed that the IIC chose to hold today's event at the Riverside House rather than Ditchley Park, the estate where the organization was founded. As a longtime admirer of Sir Winston Churchill, I had hoped to walk some of the halls he had walked during World War II.

So many of Churchill's words ring true today. Indeed, even though he didn't live to see the Internet, his aphorisms aptly describe much of the current discussion about the broadband marketplace: "Some people regard private enterprise as a predatory tiger to be shot. Others look on it as a cow they can milk. Not enough people see it as a healthy horse, pulling a sturdy wagon."

This week is an opportune time to focus on the critical role that the healthy horse has played when it comes to broadband infrastructure and the Internet. Remember, back in the 1980s and 1990s, the Internet was a government-funded and government-led network of networks. The National Science Foundation Network, or NSFNET, was the backbone connecting universities and research facilities using T3 lines. But 20 years ago this week, on April 30, 1995, the United States officially dissolved NSFNET and placed Internet operations in private, commercial hands. To say that transition has gone well would be the understatement of the century.

Perhaps most relevant for today's forum, the Internet is now a virtually unlimited commercial marketplace. Digital goods and services are exploding. Entrepreneurs submit about 460 apps to Apple's App Store every day; that's more than 80,000 new apps in just the last six months. The Internet has leveled the playing field so that consumers can access the best products for the cheapest price, and anyone who wants to compete for their business can do so quickly and easily. I've personally spoken with numerous entrepreneurs who've said that without the Internet, they'd have no business.

The Internet has also created a boom in cultural exchange. Americans are experiencing a second British invasion as shows like *Sherlock*, *Doctor Who*, *Broadchurch*, and *Black Mirror* have crept into our social consciousness. Indeed, my own life as a commissioner at a federal agency sometimes reminds me of a British political satire that can be viewed over the Internet. No, I'm not talking about the political machinations of the original *House of Cards*, but the absurd banter between Jim Hacker and Sir Humphrey Appleby on the timeless *Yes Minister*.

What powers all this digital innovation? Broadband infrastructure—and a lot of it. Almost every part of the communications industry in the United States is competing to offer newer, faster, and better broadband services. Carriers are upgrading DSL with IP-based technology and resilient, high-capacity fiber. Mobile operators have replaced first-generation cellular, second-generation EDGE, and even 3G services with ultra-fast LTE. Cable operators, satellite providers, unlicensed wireless Internet service providers, municipalities, and even new entrants are offering competitive packages in parts of the country that never dreamed of high-speed broadband.

Today, I want to mention just a few lessons that I've drawn from the American experience. First and foremost in my view, the government's top priority should be removing regulatory barriers to private-sector investment and competition. The historic commitment of the United States to these policies has produced unparalleled innovation throughout our entire Internet ecosystem, from the core of our networks

to providers at the edge. These policies—not the heavy hand of government regulation—have unleashed the broadband revolution that is reshaping the world.

I. Reducing Regulatory Barriers

Let me talk more specifically about some of those policies. Historically, the American government's approach to broadband markets has been to foster competition by removing barriers to infrastructure investment and deployment. In the U.S., private enterprise has taken the risks to innovate, build networks, and compete for consumers in the free market. Rather than the government owning broadband companies or directing capital spending, our preference has been to give companies the right incentives to make investments. And that means allowing them to reap the benefits of their investments instead of requiring them to share what they have built with their competitors. As a result, operators have invested over one trillion dollars in building and expanding their networks.

What did the U.S. do to create this environment? Most important was the historic decision in the 1990s that the Internet should be unfettered by government regulation. Instead of micromanaging broadband networks and the data they carry, the U.S. government back then—including the FCC for almost two decades thereafter—focused its efforts on removing obstacles to infrastructure investment. Instead of telling broadband operators where to invest, how much to invest, what technologies to use, or how to run their networks, we let market forces guide these decisions. Regulators made a conscious choice not to apply to the Internet the heavy-handed economic regulations designed for telephone monopolies. After all, rules designed to regulate monopolies will inevitably push the market in the direction of a monopoly. Instead, our policy was a modern, deregulatory one that gave the private sector more flexibility to innovate.

We also removed regulatory barriers to entering the communications marketplace more generally. The business case for broadband deployment becomes easier if operators can build multi-purpose networks—and that means offering voice and video services alongside data. But when providers sought to enter these markets in the early 2000s, they faced many challenges. For example, state regulators were used to having comprehensive oversight over voice services because telephone companies had enjoyed monopoly status before Congress passed the Telecommunications Act of 1996. And cable companies had to get permission from local governments to offer cable service. Those governments often attached costly conditions when they granted cable companies a local franchise.

To fix problems like these, we took two different tacks.

On the telephone front, the FCC recognized that over-the-top as well as facilities-based VoIP services offered an unparalleled opportunity to bring new competition to the voice market. And so in 2003, the FCC exercised its legal authority to preempt states from regulating VoIP services as it had traditional telephone service.

On the video front, the FCC stopped local governments from unreasonably refusing to award companies video franchises. And many state governments helped by making it easier for competitors to offer video services with statewide franchising laws.

Together, these decisions produced big benefits for consumers. Cable operators entered the voice market. Telephone companies entered the video market. Entirely new competitors began plotting their entry as well. All of this incentivized companies to expand their fiber networks and accelerate the deployment of high-speed broadband. Indeed, for all the talk of convergence, it was these governmental actions in the 2000s that helped make it a reality for the American consumer.

Another way we've removed barriers to infrastructure deployment is by lowering the actual cost of deployment. On the wireless side, that's meant streamlining the process for constructing and siting towers, antennas, and other physical infrastructure. And it's also meant liberalizing our rules to allow for greater and more efficient secondary market transactions for spectrum. On the wireline side, the FCC has

historically tried to promote fiber deployment by giving companies the flexibility to retire copper plant. The basic concept is simple: Running two networks is expensive. You cannot induce carriers to maximize fiber deployment if they have to maintain copper. Under the FCC's rules, carriers do not have to maintain their copper networks once they've been replaced with fiber and once the carrier has notified customers about the reconfigured networks. It's this regulatory certainty—the knowledge that investing in fiber means no more maintenance costs for aging copper infrastructure—that has spurred fiber deployment throughout the United States.

II. Investment and Intermodal Competition

Collectively, these policies have produced immense levels of investment in broadband infrastructure. Over the past 15 years, companies spent over \$1.3 trillion to lay fiber, upgrade cable systems, launch satellites, build towers, and deploy broadband infrastructure.

One way to think about broadband investment in the United States is to compare it to Europe. Data show that wireline ISPs in the United States invested more than twice as much as their European counterparts (\$562 per household versus \$244). Mobile operators followed the same pattern (\$110 per person versus \$55). Over the last 15 years, American companies reinvested 26.3% of their revenues into broadband infrastructure; for European companies, that number is only 16.9%.

Consumers in the United States reaped the rewards of all this investment. Since the turn of the century, the percentage of Americans with broadband at home increased more than tenfold while prices dropped precipitously. A recent study shows that fiber deployment to commercial buildings quadrupled over the last decade. On the wireless side, nearly 92% of American consumers now have access to three or more facilities-based providers. And 4G LTE now covers 86% of Americans.

Turning back to the comparisons, 82% of Americans and 48% of rural Americans now have access to 25 Mbps broadband speeds. In Europe, those figures are only 54% and 12%, respectively. In the United States, broadband providers deploy fiber to the premises about twice as often (23% versus 12%). And with respect to mobile broadband, 30% of customers in the United States subscribe to the fastest technology in wide deployment, 4G LTE, but in Europe that figure is only 4%. Moreover, average mobile speeds are about 30% faster than they are in Western Europe.

What is more, facilities-based, intermodal competition in the United States is thriving. Almost every segment of the communications industry has been competing to offer newer, faster, and better broadband service. Traditional telephone companies, cable operators, mobile phone companies, satellite providers, wireless Internet service providers, and others compete vigorously against each other. Indeed, the FCC has estimated there are 4,462 ISPs in the United States.

Government fiat didn't bring about this broadband investment. Unbundling mandates didn't create this competition. It was the commercial marketplace, liberated by fewer regulatory barriers to investment and competition, that wrote this story.

III. A Cautionary Note

I would be remiss if I didn't mention recent developments that have added an unfortunate chapter to this American success story.

First, there's been a dramatic change in policy over the last few months in the United States with respect to Internet regulation, one that casts a shadow over future broadband investment. I'm speaking of course about the FCC's recent net neutrality decision—a decision to apply public-utility laws from the Great Depression era to today's broadband providers. I disagreed with that decision for several reasons. It fundamentally reversed our historic and successful approach to broadband Internet access. It will lead to less investment, less competition, slower speeds, and higher prices for consumers. And it was entirely

unnecessary. The Internet was open and vibrant before the FCC acted. Or to put in another way, the Internet wasn't broken. The U.S. government didn't need to fix it.

Second, there are increasing calls in the United States to slow the transition from an analog world to a digital one based on the Internet Protocol—something we call the IP Transition. There will always be those who see technological progress as something to be feared rather than welcomed. For example, recall the Dowager Countess's reaction to the introduction of the telephone on *Downton Abbey*. "Is this an instrument of communication or torture?"

Today, some have begun to romanticize the copper loop. Copper has allowed telephone service to be affordable, they say. They point out that copper lines are independently powered and can survive a power outage. And they argue that consumers must be protected from new technologies like fiber and IP.

To borrow some slang I picked up on this side of the pond, that's barmy. Over the past decade, American consumers have been dropping their traditional copper landlines for VoIP and wireless alternatives at a dramatic rate—almost 12% each year. The number of residential lines has dropped from 118 million to 35 million. Why? Because they recognize that copper doesn't offer the same value as newer alternatives.

But those who cling to yesterday rather than embrace tomorrow are unlikely to be convinced by hard data. And it remains to be seen what influence they will have with other policymakers. Already, these same naysayers have convinced a majority of the FCC that pervasive regulation of the Internet is costless. If the FCC goes even further—if it reregulates markets previously found competitive, like those for enterprise broadband services, or if it reverses our longstanding copper retirement policies—then the business case for new infrastructure investment will diminish substantially. And the consumer benefits we've come to take for granted in this broadband age will diminish accordingly.

But notwithstanding these ill winds, I am optimistic that the United States will return to the successful, light-touch approach we have taken to the Internet. After all, it was Churchill who said that "You can count on Americans to do the right thing—after they've tried everything else." And make no mistake about it, removing barriers to infrastructure investment is the right thing to do. The private sector remains the key to expanding digital opportunities not only in America but throughout the world. Government's foremost responsibility is not to stand in the way.

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Thank you again for hosting me today. I look forward to hearing from the other panelists about the future of copper, the deployment of next-generation networks, and the transformational impact the Internet has had on the United Kingdom's communications marketplace.