

**Remarks of FCC Chairman Tom Wheeler**  
**As Prepared for Delivery**  
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Good morning.

Thank you to Fabio Colasanti for that introduction. More important, thank you for your decades of leadership at the European Commission and now at the IIC.

Although this is Fabio's show, this is the FCC's back yard, so I want to take this opportunity to welcome everyone, in particular our distinguished guests from around the world.

In recent weeks, Washington has hosted Pope Francis and President Xi of China. I trust that all of you have been greeted with similar pomp and circumstance.

We find ourselves astride an historical development in broadband and the broadband-enabled Internet—the most powerful and pervasive communications platform in the history of the planet. No other major technology has reached so many people in such a short time.

You know the statistics. Mobile networks cover about 95 percent of the world's population and mobile Internet service covers nearly half of the world's population. There are about three billion Internet users worldwide. These numbers represent an enormous accomplishment. But there are more than four billion people on our planet who are not yet connected to the Internet. In the 49 least developed countries, over 90 percent of the population is not online. We can and must change that.

Two weeks ago, the United Nations General Assembly ratified 17 Sustainable Development Goals, succeeding the Millennium Development Goals that will expire at the end of the year. One of those goals has as a target to “[s]ignificantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020.”

In urging the ratification of the goals, President Obama told the General Assembly that “[t]his next chapter of development cannot just be about what governments spend, it has to harness the unprecedented resources of our interconnected world.”

The United States and other governments along with the World Bank, NGOs, and major corporations have sponsored a “Global Connect” initiative that seeks to connect an additional 1.5 billion people to the Internet by 2020. It also seeks to make ICT a development priority equivalent to other forms of critical infrastructure.

All of this recognizes the importance of human capital alongside the capital that pays for fiber, cell towers, and Internet Exchange Points. Capacity building, technical assistance, and the exchange of experience are as important—and very possibly more important—than the transfer of cold, hard cash (not that I am denigrating cash).

It is a source of great personal pride that the FCC staff participates so extensively in these contributions to the increase in human capital. Our International Bureau both engages in and coordinates activities that share our experiences with our regulatory counterparts and with other foreign officials, industry executives, and members of civil society. It provides information on our major regulatory initiatives on a continuing basis and provides expertise through our International Visitors Program, participation in the International Telecommunication Union's Development Bureau, and supplying instructors to the United States Telecommunications Training Institute, USTTI. There is more, but you get the idea.

The exchange of experiences, the conviction that there is significant value in describing and hearing how different organizations have approached similar challenges and opportunities, of course, is what brings us together today. As it happens, the FCC has experiences that coincide very closely with the four themes of this conference:

- Connecting the Unconnected
- The Internet of Everything
- OTT convergence, and
- Competition.

So, consistent with the conviction that the exchange of experience has value, I will very briefly describe a few of our initiatives that would be relevant to these themes in the international context.

Let's start with that last theme – competition -- because that has been the central tenet of the FCC's policy agenda.

Simply put, I believe that competition is the most effective tool for advancing the public interest and promoting innovation and investment across the ICT sector.

Our view on competition is clear. Where competition exists, we will work to protect it. Where greater competition can exist, we will encourage it. Where competition cannot be expected to exist, we will not hesitate to act to protect consumers and advance the public interest.

Some of you may have heard me describe this approach as the regulatory see-saw. It works like this: when competition is high, regulation can be low. Thus, companies can control their regulatory fate based on the degree to which they embrace competition in their markets.

There is no better example of our commitment to competition than our Open Internet rules.

We strongly believe that the Internet's open design is essential to its success. It allows innovation without permission, and it empowers the marketplace to pick winners and losers, not network gatekeepers. Preserving this competition at the edge of the network is linked directly to competition between network operators.

And the simple truth is that competition for wired high-speed Internet access is limited in most U.S. markets. Internet service providers have the ability and the incentives to leverage that market power to their financial advantage by blocking, degrading or favoring content.

Our broadband networks are the indispensable infrastructure of our modern economy and society and they should be subject to fully effective oversight.

That's why the Commission adopted common sense rules of the road to assure the long-held American position that no one – either government or private actors – should interfere with public access to lawful content, applications and services.

The kinds of oversight designated by the Open Internet Order are a new regulatory model designed for new network times. I keep describing this oversight as a “referee on the field who can blow the whistle.” Our job isn't to substitute the FCC for what should be hard-fought negotiation and tough competition. It's up to the players to compete hard against their opponents. But, make no mistake, if they violate the rules, we will blow the whistle.

We are arbiters of last resort, not first resort. We will not micromanage networks as was done in the pre-broadband days. This means no retail rate regulation, no network unbundling, and no tariffs. In short, no “utility style regulation.”

I said all along that the two goals of our net neutrality proceeding were to protect Internet openness and preserve incentives for massive private investment in better broadband networks.

I believe our rules strike that balance.

This point about private investment flows naturally into the second big theme of the conference: connecting the unconnected.

In the United States, the primary means through which we achieve widespread deployment of robust broadband networks is private sector investment. Last year, U.S. broadband providers invested \$78 billion in network infrastructure, and over the previous six years, total private network investment topped \$420 billion. Since 2009, an additional 45 million Americans have adopted broadband. Today, 98 percent of Americans have access to 4G mobile broadband.

Despite this progress, there are plenty of areas in the United States where local demand by itself will not support the deployment of robust, modern, world-class communications networks. More than 50 percent of rural Americans lack access to broadband at speeds of 25 megabits per second. About 10 million Americans can't get wired broadband *at any speed*, even if they wanted it. And while 98 percent 4G penetration is impressive, it still means 6 million Americans are unserved.

To close these digital divides, the FCC has launched a comprehensive effort to modernize our universal service programs from supporting telephone service to cover broadband connectivity.

These reforms are bearing fruit. Just last month, our new Connect America Fund concluded a process that will distribute \$9 billion over the next six years to ten private carriers. This investment will support the deployment of broadband networks to over 7.3 million rural consumers.

But universal access isn't only geographic, it is also economic. We are in the process of reforming our universal service policies covering low income consumers, a critically important effort when you consider that only 48 percent of Americans making less than \$25,000 have broadband service at home.

When it comes to connecting the unconnected, I would like to highlight a too-often-overlooked challenge, which is connecting individuals with disabilities.

A broadband connection coupled with the capabilities of Internet Protocol-based technology has created a magnificent moment when we can apply these technologies to attack the challenges of individuals with disabilities. We must meet this moment.

Accessibility for individuals with disabilities should be considered at the beginning and at every stage of the process by which new communications policies and technologies are being considered, developed and implemented. In the United States, we are continuing to implement a wide range of accessibility policies, including ensuring access to emergency information, closed captioning and video description requirements for television programming and making specialized equipment available for Americans who are deaf and blind.

Not only do we want everyone connected, we are moving toward a time when every *thing* is connected, which brings me to the third theme: the Internet of Everything.

According to Cisco, there are currently 15 billion devices connected to the Internet. By 2020, they project that number to grow to 50 billion. Here's a really crazy number. Cisco estimates that the Internet of Things will generate \$8 Trillion – with a T – in economic value over the next decade. We will see \$2.1 trillion come from innovation, \$2.1 trillion from better asset utilization, \$1.9 trillion from supply chain and logistics enhancement, \$1.2 trillion from improved employee productivity and \$700 million from enhanced consumer experiences.

If you're thinking those Cisco numbers sound crazy, McKinsey did their own analysis of the Internet of Things, and they are calling for \$4 trillion to \$11 trillion in economic benefits by 2025.

When you are talking about trillions, you are talking about a HUGE opportunity. Not surprisingly, seizing this opportunity will require tackling a number of challenges.

Cybersecurity is a critical one. As the head of the FCC's Public Safety Bureau once said to me, you can think of 15 billion connected devices as 15 billion threat vectors. That's a pretty daunting prospect.

In a free-market democracy where our broadband networks are privately owned, we believe leadership on cyber must ultimately come from the private sector. But government has a role.

Under President Obama's leadership, our National Institute for Standards and Technology (NIST) led development of a business-driven, proactive framework for voluntary cyber risk management. This is a tool designed for companies of all sizes that operate in diverse sectors of the economy and in a variety of dynamic risk environments. It provides a common language for identifying, assessing, and responding to cyber risks and threats. The Framework also represents a substantial commitment from the private sector.

Guided by the NIST Framework, the FCC has initiated a series of individualized, face-to-face meetings with members of the communications sector to discuss each company's cyber risk management priorities, methods to address them, and the effectiveness of these methods. The FCC's role is not to second-guess a company's business judgment or to micromanage its implementation of the NIST Framework. We simply care about one question: Are the cybersecurity protocols on which we jointly agreed working? It is a shared responsibility that

must be a first priority for those who build and operate networks as well as those who oversee that activity.

Of course, when you talk about ubiquitous connectivity: the most obvious policy issue that comes up is spectrum.

Spectrum is the lifeblood of mobile broadband and new approaches to spectrum management are needed if we are to meet the ever growing demand for spectrum that has resulted from the widespread use of mobile technologies.

The FCC has been working to develop a number of new tools in the spectrum toolkit, including expanded unlicensed use, flexible use policies, spectrum sharing, new bands for mobile broadband (including higher frequency bands and the digital dividend spectrum resulting from DTV transitions that are ongoing in many countries around the world), and of course, the upcoming incentive auction.

This month, the Commission will initiate a proceeding to spur the next generation of mobile technology. The fifth generation of mobile networks – or 5G – could leverage both low-band and high-band spectrum to redefine wireless broadband, not only with greater speeds, but also the ability to handle the multiple inputs of an IOT world with minimal latency.

Global harmonization is critical to getting the greatest benefit out of the available spectrum. Harmonization fosters global roaming and helps manufacturers to take advantage of the economies of scale available in a global marketplace, resulting in lower prices and a wider range of broadband services and devices. Harmonization also helps prevent interference and facilitates coordination with neighboring countries.

At the upcoming World Radiocommunication Conference, we will support adding additional international allocations for mobile broadband, while allowing individual administrations the flexibility to design spectrum policies that meet their domestic requirements.

I'll close with a few thoughts on the final theme – the OTT (Over The Top) convergence.

As of the end of last year, more than 40 percent of U.S. households subscribed to online streaming services like Netflix, and this number is only expected to grow in the immediate future. Legacy content providers are aggressively getting into the game with their own services like HULU. The explosion of online video raises a number of policy concerns, some of which I've already touched on.

Go back to spectrum. People aren't just streaming video to their TVs and computers, they are increasing watching video on their phones. Americans look at their mobile device 2.8 hours a day, up from less than half an hour in 2010. One wireless carrier recently told analysts that 60 percent of all their mobile traffic is video. If you needed more convincing about the urgency of repurposing spectrum for broadband, there you have it.

The shift to OTT has become a major consideration in our merger review process as well. Our general counsel recently published a review of the considerations that emerged in the course of our examination of major media merger proposals. Two takeaways include: 1) competition between new OTT and traditional video distribution models was central; and 2) access to programming on competitive terms was seen as a critical factor if OTT entrants were to be successful.

There is a line of new OTT providers queuing up to expand video choice – and increase consumer demand – for broadband. The FCC wants to facilitate the development of that content, notably local content that’s high-quality and serves the public interest.

New communications technologies are central to new 21<sup>st</sup> century economies. Effective communications policies will help promote a virtuous cycle of innovation, creating an environment where investment, competition and innovative products and services all continue to grow and reinforce one another, creating a healthy and growing communications ecosystem. It’s been my honor to share some of our experiences, and I have benefited from the opportunity to learn from so many of you since I’ve been in this job. Working together, we can harness the power of broadband technology to expand opportunity and improve the lives of billions across the globe.