

**TESTIMONY OF**  
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**BEFORE THE**  
**UNITED STATES HOUSE OF REPRESENTATIVES**  
**COMMITTEE ON ENERGY AND COMMERCE**  
**SUBCOMMITTEE ON TELECOMMUNICATIONS AND THE INTERNET**

**HEARING ON "THE DIGITAL FUTURE OF THE U.S.: PART 3:  
SPECTRUM OPPORTUNITIES AND THE FUTURE OF WIRELESS"**

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Good morning, Chairman Markey, Ranking Member Upton and Members of the Subcommittee. Thank you for inviting me to be with you here today and I am honored to be on a panel with many of my distinguished colleagues. I want to begin by commending you for your leadership in bringing attention to the importance of sound spectrum policy and looking ahead to the amazing opportunities wireless technologies and services present to U.S. business and American families. In 2003 as I took the helm at NTIA, I said that spectrum is “the rocket fuel for the next wave of technological innovation.” We are certainly experiencing that today.

I have had the privilege of holding various positions impacting the wireless community—from my position working closely with the Energy & Commerce Committee as chief of staff to Congressman Rick White, managing state legislative and regulatory affairs for leading wireless companies, and serving as Assistant Secretary of Commerce for Communications and Information under President George W. Bush. I can say that never before in my twelve years of professional service have I ever been as optimistic about the health and future of communications services and technologies—particularly wireless—as I am today.

Some key statistics paint the picture—the growth of wireless from an expensive niche product to one that is mainstream and readily affordable for all Americans is breathtaking and is indicative of its continued potential. There are an estimated 235 million wireless subscribers in the U.S. today generating more than 250,000 direct carrier jobs. According to the FCC, the U.S. “continues to lead the world in average minutes of use per subscriber,” no doubt driven by the virtually free long distance and coast-to-coast roaming capabilities millions of Americans enjoy everyday. Analyst data indicates that the average U.S. wireless customer consumes five times as many minutes of use as their European counterparts—and free of the roaming crises that plague

European consumers. And they communicate on some of the fastest commercial networks in the world today.

Wireless is beginning to have a sharp impact on the deployment of broadband as well. The FCC says that 35% of the growth in all reported high-speed lines between June and December 2005 was attributable to mobile wireless. Moreover, 99% of Americans are living in counties where next-generation wireless services are available. The US was the first country in the world to deploy world-leading 3G wireless networks. Following the merger of Cingular with ATT Wireless, the better resourced Cingular was first in the world to deploy HSDPA – the highest evolved state of GSM technology. Today it reaches over 100 cities across the US and offers speeds approaching one megabit per second. However, in contrast to much of the world, the US also enjoys a very competitive market for wireless services. Verizon Wireless and Sprint have deployed the competing CDMA technology—EVDO Rev A—which offers customers similar speeds. By the end of 2008, Verizon and Sprint expect to offer that service to 200 million Americans. To add to the competitive, wireless, broadband mix, the US will see substantial deployments of WiMax technology powered by the investment of Sprint, Clearwire, Motorola, and Intel. WiMax is particularly attractive for its ability to cover large areas with fewer towers.

The future is even brighter. All three technologies have currently achievable, economic evolution paths (EVDO Rev C for CDMA and LTE for HSPA) which will be able to deliver 100 megabits per second to your hand in 2010. However, to achieve those speeds, the carriers will need access to attractive spectrum in blocks large enough to deploy 10 MHz channels (greater than the one to two MHz channels used today). The challenge to the federal government will be to make the resources available to meet the capabilities these technologies are capable of providing.

And the global economic impact of telecommunications is astounding. The Telecommunications Industry Association's (TIA) "2007 Telecommunications Market Review and Forecast" found that telecom revenue worldwide amounted to \$3 trillion in 2006, up more than 11% from the previous year. The U.S. grew 9.3% in 2006 to \$923 billion—the largest percentage growth in revenue since 2000. The global and U.S. markets are projected to reach \$1.2 and \$4.3 trillion in 2010 respectively. U.S. wireless industry revenue reached \$129 billion for 2006, with an expected growth to \$184.5 billion in 2010. As TIA President Grant Seiffert noted, "Technologies like VoIP and broadband video, as well as new mobile data services, are sparking new growth in the telecommunications industry." Unlicensed spectrum has been a catalyst for this growth as well. In just the last three years, WiFi has spread from 11,000 hotspots in 27 countries, to nearly 150,000 hotspots in 131 countries today—with a world-leading 50,000 of those in the U.S. Working with leadership from this committee, the FCC and NTIA provided fuel for the future of WiFi by opening up 240 MHz of additional spectrum for WiFi in the 5 GHz band. Those actions, in addition to first in the world authorization of ultrawideband technologies and opening up 26 GHz of spectrum in the 70 GHz, 80 GHz, and 90 GHz bands provide fuel for wireless innovators throughout the US economy.

In short, the U.S. leads the world in the competitiveness, capabilities, and consumption of voice minutes. It leads the world in wireless high-speed offerings and innovation to even faster networks in the years ahead. It provides American consumers and business competitive offerings that boost our productivity and enhance our lives.

So how did we get here?

Congress, and specifically the Energy & Commerce Committee under the leadership of its current Chairmen, can take significant credit for much of the success of this industry. By granting the FCC auction authority in 1993 and setting the stage for flexible use and a deregulatory approach to the auctioned spectrum it provided the roadmap for the development of the industry. In implementing Sections 309(j) and 322 of the Communications Act, the Commission has endeavored to put in place market-driven procedures and avoid the shortages and waste incurred by the “administrative allocation” of spectrum documented by economists in recent years. The unparalleled success of that decision is evident by many of the recent spectrum auctions. As the FCC 1997 report to Congress on spectrum auctions stated, “The FCC auction program has been widely recognized as a success. The FCC has not only met the goals mandated by Congress but also met its primary responsibilities to adopt fair rules, run fair auctions, and rapidly issue licenses to successful bidders. Moreover, FCC auctions have benefitted the American public by recovering at least a portion of the value of the spectrum resource.”

Nearly 15 years ago, the completion of the successful Personal Communications Service (PCS) auction was the first step and a shining example of the policy wisdom of the current leadership of this committee. Each year since Congress granted it auction authority, the Commission has opined on the state of the wireless industry, and each year it describes an industry that is robustly competitive to the great benefit of the consumer. The market, not the regulator, continues to drive carriers to provide service throughout the nation and introduce innovative service offerings. Without any regulatory requirement to do so, carriers have upgraded their digital networks multiple times and are introducing true mobile broadband services in spectrum originally allocated for voice.

Following the leadership of Chairman Barton and Chairman Upton, last year's Advanced Wireless Services (AWS) auction was a huge success. This committee, working in partnership with leaders in the Senate and the Administration, ensured the success of that auction through passage of the Commercial Spectrum Enhancement Act which introduced the power of market mechanisms to assist in upgrading critical government radio systems and opening up vital spectrum to private sector innovation. Under FCC Chairman Martin's leadership, 104 bidders won 1,087 licenses resulting in gross bids of \$13.9 billion—the largest completed auction to date. The AWS auction exemplified the key criteria for a successful auction. Licensing was open, simple, and transparent with no market-impacting conditions. Due to that auction structure, the U.S. will enjoy the introduction of another nationwide wireless competitor -- the cable industry -- who purchased licenses covering nearly the entire country.

Today we have another opportunity to demonstrate the world-leading spectrum policy and deliver more fuel for economic growth: the auction of 60MHz of spectrum at 700MHz. As part of the Digital Television Transition and Public Safety Act (the "DTV Act"), this spectrum is being vacated by television broadcasters and the upcoming auction is drawing significant excitement and interest. It is valuable spectrum that will fuel the U.S. high-speed wireless broadband engine. In addition, the spectrum auction will provide key funds for many critical needs, including \$1 billion to public safety for interoperability; more than \$1 billion for set-top box vouchers; and billions for deficit reduction. Equally important, 24 MHz of this prime, newly-available spectrum is being provided to our nation's first responders to help facilitate interoperability and give public safety the 21<sup>st</sup> century communications tools they have needed for too long.

The potential of this spectrum to build upon recent successes is assured. As many esteemed members of the committee likely remember, the establishment of a clear date certain for the shut-off

of analog television and handing over the valuable spectrum to public safety was very difficult and hard fought. With the recommendations of the 9/11 Commission in hand, we cannot shrink from the commitment to that date. For months, former assistant secretary Larry Irving, my Commerce Department predecessor and I have been publicly advocating the importance of this spectrum and law to public safety and America's wireless consumers. The optimism I have been conveying rests a great deal with the unencumbered completion of the 700MHz auction and process using the PCS and AWS models and success stories as our guide.

In short, the DTV Act serves three vital public interest goals: first, it accomplishes the important Digital TV transition. Second, it helps promote the development of new and very high-speed broadband wireless services. Third, it ensures the availability of effective, interoperable emergency communications for first responders.

I am very concerned when I hear discussions or intimations about delaying the auction or encumbering the spectrum with restrictions such as "open access." This is truly where history should be our guide because I firmly believe anything short of a straightforward, transparent auction would cause far-reaching negative consequences.

The NextWave example comes immediately to mind. When compared against the successful AWS and PCS auctions other than the C block, the NextWave experience shows how any policy changes to a straightforward and fair auction devalue and delay spectrum and ultimately cost the American taxpayer. In its efforts to steer licenses to particular constituencies and employing such notions as designated entity requirements, bidding credits, and federal government financing all met with failure. Indeed, the end result of the Nextwave experiment was a sale of the encumbered

licenses to Verizon and Cingular. The social result was wasteful litigation and nearly a decade of political, economic and policy failures that took years to recover from.

“Open access”, which many would call Wireless Net Neutrality, has no business in wireless today. Wireless carriers need to manage their infrastructure and delicate, high-speed ecosystems to provide the most reliable service and capabilities to their subscribers and the communities they serve. Unlike the traditional landline system which can provide substantial capacity to individuals over the “last-mile” connection, wireless systems provide a shared connection for all users operating in a certain geographic area. Forced open access policies create networks in which a few users can dominate the shared spectrum resource, thereby diminishing the quality and accessibility of service for other customers. Indeed, all handsets sold by U.S. carriers today undergo rigorous testing to ensure that they are extremely efficient with the scarce spectrum resource available, and that they do not impair the network experience of others or the health and safety of the customer.

In the wired world, the notion of Network Neutrality is a bitter policy debate which is devoid of a consensus today. Very few have stretched the notion to encompass the wireless market—and for good reason. Today, the handset market is defined by the sharpe edge of the consumer electronics marketplace. Large, sophisticated enterprises like Samsung, LG, Motorola, Sony, Blackberry, Treo, and today, Apple, compete for the favor of carriers—and their scores of millions of customers. The “in” handset of today becomes the “give-away” handset of tomorrow, and the “old school” handset of the day after that. In addition, the admittedly competitive carrier market where carriers compete on network quality, price, coverage, data capabilities, entertainment services (including this year, “television on your cell phone”)—and handset availability—is serving customers enormously well. Aside from the technical immaturity of “open access” mandates, it is difficult to see, much less believe, the policy question that proponents of such conditions are trying

to answer. Moreover, creating “open” networks, in which users decided what to attach or run on the network, makes it more difficult for the network operator to meet the mandates of the Federal Communications Commission for socially beneficial programs like wireless location-capable E911 services and other priority messaging services. As I noted above, in today’s wireless market, fierce competition has brought product and price differentiation for wireless services, unlike any other communications services. Open access restrictions on the spectrum slated for auction will do nothing more than stifle future innovations and significantly devalue the spectrum itself.

When we talk about wireless broadband innovation, we are not talking about “Buck Rogers” or pie-in-the-sky concepts. It is very much here today. The high-speed broadband technology path ahead of the country’s wireless carriers (those in market and those about to enter) represents the true convergence between wired and wireless existences via an advanced IP-based integrated system. The infusion of valuable spectrum at 700MHz is a key catalyst for expanding new technologies and building next-generation capabilities. For the good of our economy, the competitiveness of the American worker, and to maximize the connections amongst American families, we must keep 700 MHz policy train on track . Not a single hertz of the spectrum should be wasted either on inefficient, analog voice public safety systems, nor on value-destroying, market-evading conditions. Anything short of a clear, transparent, straightforward auction will leave us short of our policy goal – and one successfully supported by this committee on multiple occasions in the past.

The allocation of new spectrum for both commercial and public safety use in the same band provides a unique opportunity to promote public-private partnerships. However, to promote such partnerships, Congress should ensure that the full force of the competitive marketplace is brought to

bear on the problem. That means that public safety should have the flexibility to negotiate with any wireless provider to obtain the best arrangements that will help it accomplish its objectives.

Nearly four years ago on June 11, 2003 members of this esteemed committee met for another hearing titled “The Spectrum Needs of Our Nation's First Responders.” At this hearing every witness focused on the critical need to free up the 24MHz in the upper 700MHz band. While nobody asked for more spectrum, funding was a key issue. Representative Stupak said “If I have heard anything today, it has been money, money, money. I understand that, but we have to identify some sources. Do you have any other auctions coming up that might be able to provide some source of funding?” The upcoming 700MHz auction will provide that kind of key funding.

In conclusion, I cannot emphasize enough the optimism I feel today about the future of the U.S. wireless communications. We are on the cusp of many amazing innovations and economic impacts. The U.S. is—and must continue to be—the world wireless leader. Keeping the 700MHz spectrum auction on track and unencumbered is critical to maintaining that leadership position. I welcome any questions you might have and thank you again for inviting me to be with you here today.