

**Remarks of  
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“A View on Today’s Most Pressing Wireless Issues”**

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[As prepared for delivery]

Thank you for the kind introduction and for inviting me here to be a part of your conference. I always like to speak on the issue of spectrum management for wireless communications systems, because I’m a big believer that our future economic competitiveness and productivity lies in the continued expansion of spectrum-based services. And with our nation’s economy in real trouble, a key part of a long term strategy to restore growth is to promote broadband deployment – including a special focus on fostering wireless solutions.

Clearly, the use of wireless services is increasingly a necessary and integral part of our everyday lives. With over 264 million subscribers<sup>1</sup> of wireless services and estimates that the total value of wireless broadband and mobile voice services may exceed \$427 billion by the year 2016, the impact of our use of the spectrum is undeniable.<sup>2</sup>

This is such a dynamic time for your industry. Looking at the wireless marketplace today, it is remarkable to see the broad array of video, voice and data applications that are beginning to be common place on the latest handsets devices. The two pound cellular “brick” phone of over 35 years ago has shrunken and grown up at the same time. Our cellular telephone is evolving into a sleek “smart” device that enables us to email and instant message, socialize, organize, surf the Net or watch the latest videos, conduct financial transactions, and, yes make a phone call.

With multiple open network platforms for mobile devices taking shape, we are seeing an impressive level of innovation occurring. I attended last week’s CTIA show in San Francisco and saw firsthand how that innovation is driving the development of new applications and novel handset designs which translate into a richer experiences for consumers. Coming at the heels of the Commission’s new approach to spectrum management – specifically, our adoption of a meaningful, though not perfect open access environment on a significant portion of the 700 MHz spectrum, I’d like to take credit for all this innovation. But seriously, clearly the market is moving toward openness.

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<sup>1</sup> CTIA, *U.S. Wireless Quick Facts and Figures* available at <http://www.ctia.org> (last visited Sept. 17, 2008).

<sup>2</sup> Roger Entner, *The Increasingly Important Impact of Wireless Broadband Technology and Services on the U.S. Economy*, Ovum, Sept. 2008 available at [http://graphics8.nytimes.com/packages/pdf/technology/20080521\\_Ovum\\_EconomicImpactReport.pdf](http://graphics8.nytimes.com/packages/pdf/technology/20080521_Ovum_EconomicImpactReport.pdf) (last visited Sept. 17, 2008).

Consumers are demanding it; true innovation requires it; and those companies who do not lead on it will find themselves left behind. In that context, I continue to hear from innovators that the open access conditions on the 700 MHz spectrum is playing a key role in spurring creativity. Our decision represented an honest, good faith effort to establish an open access regime for devices and applications that will hopefully serve consumers well and create opportunities for providers for many years to come.

The main driver of innovation is the rapidly growing consumer demand for wireless communications services and broadband applications in particular. It is most apparent in the success of the next generation of smart phones. We can simply look to the iPhone, a breakthrough and market changing device. AT&T reports that 95% of iPhone users regularly surf the internet and 51% watch videos on YouTube.<sup>3</sup> The limits of mobile broadband are crumbling as handheld devices become more versatile. We at the FCC need to help providers get in a position to accommodate these increasing spectrum demands.

Take, for example, the recent study produced regarding teens' use of mobile devices. It indicates that 79% of all teens have a mobile device, a 40% increase from just four years ago. Fifty-seven% say it's central to their social life.<sup>4</sup> Maybe since I didn't have one as a kid, that explains my lack of a social life. Teens are early adopters — they are quick to embrace text messaging, mobile video content, and ring-tones. Now nine out of ten teens text, and 42% say they can do it blindfolded. These uses have driven innovation in broadband applications. Now content providers and social sites like Facebook are quickly being incorporated into mobile applications to include broader messaging and multimedia content. So it is not surprising that these “Generation M” demands are driving innovation. They are shaping the latest handset designs and applications. This bodes well for the future of the industry, since they will continue to drive demand as they age and the next generation will demand even more innovation.

In light of this innovation and increased usage, it is of the utmost importance that we make the most efficient use of the spectrum. As I like to say, “God isn't making any more spectrum” – so we need to make the best use of the spectrum we have. With new technology comes an increase in mobile use, and increased use creates rising demands on carrier infrastructure. Meeting consumer expectations requires major increases in the number of radio carriers, towers, cell sites and backhaul. That's why facilitating the deployment of infrastructure for our spectrum-based providers is critical. We have to remember that after the first cell phone was developed, it was 10 years later and nearly \$100 million in development costs before the phone went commercial in light of the need to build towers and the required infrastructure.<sup>5</sup>

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<sup>3</sup> Ralph De la Vega, CEO of AT&T Mobility, Keynote Speech at 2008 Mobile World Congress, Barcelona, Spain, Feb. 2008 available at <http://www.att.com/gen/landing-pages?pid=7728> (last visited Sept. 17, 2008).

<sup>4</sup> CTIA & Harris Interactive, *Teenagers: A Generation Unplugged*, 2008 available at <http://www.ctia.org/advocacy/research/index.cfm/AID/11483> (last visited Sept. 17, 2008)

<sup>5</sup> Associated Press, *First Cell Phone a True 'Brick,'* MSNBC, Apr. 11, 2005 available at <http://www.msnbc.msn.com/id/7432915/> (last visited Sept. 17, 2008).

## **Need For Communications Infrastructure, Spectral Efficiency and Management**

The future success of our economy will demand that we promote the expansion of communications infrastructure, as a start. The construction of communications towers is necessary to achieve the rapid deployment so many people want. Every day, Americans are expecting wider availability of advanced communications services. Towers will not only form the backbone of the transition to digital television, they are used around the clock by public safety and are a critical component of our nation's homeland security efforts. We need to take a close look at CTIA's petition that would set a shot clock on the amount of time local authorities spend reviewing tower applications. Congress intended that the Commission act to prevent unreasonable delays so we need to consider all potential solutions to such delays.

While consumers heavily rely on their cell phone service, many don't want the infrastructure that makes it possible in their back yards. In traveling the country, no matter where I am, people regularly ask me to help them get better mobile wireless coverage, particularly in rural and underserved areas. So it is important that we make vibrant, spectrum-based communications opportunities available to more consumers and companies. We need to do what we can to promote opportunities to expand wireless connectivity, as well as to reach our most underserved communities with broadband access.

In addition to promoting the communications infrastructure, we need to consider and improve upon those technologies that optimize the use of the spectrum. Spectral efficiency is essentially getting the maximum amount of information transmitted over a given amount of spectrum. So that is why, as a Commissioner, I see my job as working to pack as much data – as much communications – over the spectrum as we possibly can. It is our agency's mission to manage the public spectrum in a manner that not only promotes efficiency, but encourages the development and availability of innovative tools and services.

Technology is developing rapidly in this direction. For example, a few companies are beginning to develop smart antennas, which are a practical and economical way of increasing capacity and performance. Unlike their standard counterparts, smart antennas allow network operators to change antenna patterns to adjust to changing traffic or radio frequency conditions in a network. Femtocells, another example an emerging technology, serve as access points and allow for seamless transition between a cellular network and a broadband Internet connection in order to make phone calls. The technology, in addition to providing spectral efficiency, improves indoor coverage and expands network capacity. Similarly, cognitive radio, a wireless communication that can reconfigure itself – changing its reception or transmission parameters to avoid interference - is also a promising means of optimizing use of the spectrum while minimizing interference. These are all important technical developments in spectrum management that you will hear about later today from your distinguished panelists.

We are also hearing from Congress on the importance of spectrum efficiency and management. Earlier this month, Senator Byron Dorgan sent a letter to Chairman Martin regarding the FCC's existing spectrum management practices. Senator Dorgan is requesting detailed information on licensed spectrum under the FCC's jurisdiction saying that there is a need to ensure the efficient use of the nation's airwaves. I agree. We'll also need to collaborate with our colleagues at the NTIA for this common goal. That means coordinating with the agency and the Commerce Spectrum Management Advisory Committee to identify more public spectrum the government can make available for commercial use, and to develop and implement smarter spectrum policies to better manage this valuable resource. Charging agencies for use of the spectrum might just get their attention enough to free up some spectrum, and rewarding them with part of the auction proceeds might add some tasty carrot to the stick.

### **Role of Wireless in a National Broadband Strategy**

We are witnessing much faster revenue growth for wireless services relative to traditional landline service. As we consider our ever-increasing ability to access any number of broadband services and applications from mobile devices, the role that wireless can play in our nation's overall broadband deployment strategy is apparent. Any effective national broadband strategy will rely heavily on wireless broadband as the wave of the future, and a key element to reach hard to serve areas. This makes even more pointed the need for focused efforts on spectrum efficiency and management.

One of the best options for promoting broadband, particularly in rural areas, and for providing new competition all across the country, is maximizing the potential of spectrum-based services. Through innovative use of the spectrum, instead of the "third pipe to the home," our mobile devices hold promise as the "third channel to the consumer." To get there, I am continually evaluating the FCC's service and construction rules to ensure that our policies do not undercut the ability of wireless innovators to get access to new or unused spectrum. I have advocated a carrot and stick approach. We want to promote flexibility and innovation, but since the spectrum is a finite public resource, we want to see results as well.

And while we've made progress, the FCC must do more to ensure that we push the leading edge of spectrum policy. As you will hear over the next two days, the Commission is considering a number of significant items on the topic of spectrum allocation and policy. For example, we are continuing to assess approaches for the unlicensed use of white spaces. We are carefully exploring the cognitive radio, spectrum sensing and geo-location based technologies that are available to see how they can enable spectrum facilitation in the unused television bands, or so called "white spaces." Of course, broadcasters have used the public spectrum for many years to serve rural and urban areas alike in providing news, civic information, education and entertainment. I fully support our efforts to ensure that harmful interference is not caused by the operation of unlicensed devices and look forward to reviewing the testing results from our Office of Engineering and Technology.

We are also considering rules for the allocation of spectrum in the Advanced Wireless Services band. There is intense debate on both sides on the proposed rules, both as to interference concerns as well as to the concepts of a “free” broadband service and content filtering requirement. As I have made clear, this band holds great promise for operators to introduce new offerings of innovative wireless broadband services to American consumers. But unused spectrum is a lost opportunity. The Commission has to do what it can to promote opportunities to expand wireless connectivity and to ensure that available and desired spectrum is put to use in a timely fashion. So I look forward to resolving the outstanding issues raised in this proceeding.

And of course, we are now considering a further notice and auction rules for the 700 MHz band D block, a critical opportunity for a nationwide, interoperable public safety network. This spectrum gives us a new opportunity to come to grips with our country’s public safety dilemma. But the first attempt at auctioning it fell flat, and the assessment and implementation challenges remain daunting. As we’ve learned during our summer public hearing on this issue in Brooklyn and throughout this proceeding, the breadth and complexity of the technical issues and cost elements that play a role in assessing the various parameters of a nationwide interoperable public safety network are enormous. Though I continue to believe that direct Federal funding for building a national public safety broadband network is preferable, I am working diligently with my colleagues to consider the draft rules before us.

### **Conclusion**

So we certainly have our work cut out for us. All of the challenges make these exciting times for the spectrum-based services industry. What seems clear is this - if we are going to see real broadband competition, it probably has to come from wireless. Without a doubt, spectrum-based services ultimately will be the next driver of competition and innovation in the broadband space. So, we all will play an important role in promoting the further deployment of spectrum based services for the benefit of our country and economy. I wish you the best of luck with your conference, and I look forward to working with you to make America the world’s leader on spectrum policy and deployment.