John T. Scott, III
Vice President &
Deputy General Counsel
Regulatory Law

verizonwireless

Verizon Wireless
1300 I Street, N.W.
Suite 400 West
Washington, DC 20005

Phone 202 589-3760
Fax 202 589-3750
john.scott@verizonwireless.com

July 20, 2007

Ex Parte

Ms. Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *Notice of Oral Ex Parte Presentation*
WT Docket No. 06-150

Dear Ms. Dortch:

On Thursday, July 19, 2007, Richard J. Lynch, Executive Vice President & Chief Technical Officer for Verizon Wireless, Charla Rath, Executive Director Spectrum and Public Policy, and the undersigned met with Commissioner Michael J. Copps and Bruce Gottlieb, Legal Advisor to the Commissioner, to discuss issues in the 700 MHz service rules proceeding. Mr. Lynch's presentation was consistent with the positions of Verizon Wireless as set forth in its previous filings in this proceeding. Mr. Lynch specifically discussed the benefits to the public of a 20 MHz block for providing high-speed broadband services, the benefits of a population-based buildout requirement, and the risks that an open access mandate would create for wireless consumers and carriers' networks. Attached are two documents that Mr. Lynch mentioned during the meeting.

Pursuant to Section 1.1206(b)(2) of the Commission's rules, an electronic copy of this letter is being filed for inclusion in the above-referenced docket. Please direct any questions regarding this filing to the undersigned.

Sincerely,

John T. Scott, III

John T. Scott, III

Attachments

cc: Commissioner Copps
Bruce Gottlieb

This story appeared on Network World at
http://www.networkworld.com/news/2007/071607-duke-iphone.html

IPhones flooding wireless LAN at Duke University

18,000 requests per second from iPhones knocking out dozens of access points at Duke University.

By John Cox, NetworkWorld.com, 07/16/07

The Wi-Fi connection on Apple's recently released iPhone seems to be the source of a big headache for network administrators at Duke University.

The built-in 802.11b/g adapters on several iPhones periodically flood sections of the Durham, N.C. school's pervasive wireless LAN with MAC address requests, temporarily knocking out anywhere from a dozen to 30 wireless access points at a time. Campus network staff are talking with Cisco, the main WLAN provider, and have opened a help desk ticket with Apple. But so far, the precise cause of the problem remains unknown.

"Because of the time of year for us, it's not a severe problem," says Kevin Miller, assistant director, communications infrastructure, with Duke's Office of Information Technology. "But from late August through May, our wireless net is critical. My concern is how many students will be coming back in August with iPhones? It's a pretty big annoyance, right now, with 20-30 access points signaling they're down, and then coming back up a few minutes later. But in late August, this would be devastating."

That's because the misbehaving iPhones flood the access points with up to 18,000 address requests per second, nearly 10Mbps of bandwidth, and monopolizing the AP's airtime.

The access points show up as "out of service." For 10-15 minutes, there's no way to communicate with them, Miller says. "When the problem occurs, we see dozens of access points in that condition," Miller says. The network team began capturing wireless traffic for analysis and that's when they discovered that the offending devices were iPhones. Right now, Miller says, there are about 150 of the Apple devices registered on the campus WLAN.

The requests are for what is, at least for Duke's network, an invalid router address. Devices use the Address Resolution Protocol (ARP) to request the MAC address of the destination node, for which it already has the IP address. When it doesn't get an answer, the iPhone just keeps asking.

"I'm not exactly sure where the 'bad' router address is coming from," Miller says. One possibility: each offending iPhone may have been first connected to a home wireless router or gateway, and it may automatically and repeatedly be trying to reconnect to it again when something happens to the iPhone's initial connection on the Duke WLAN.

They're still sorting out what that "something" is. On two occasions, one last Friday and one today, Monday 16 July, both users seemed to be behaving completely normally, yet both iPhones started flooding the net with ARP requests. In both cases, the user first successfully connected to the WLAN at one location, and then moved to another building, where the ARP flood began. "It may have something to do with the iPhone losing connectivity and then trying to reconnect in a new location," Miller says.

Most of the W LAN is comprised of Cisco thin access points and controllers. Some older autonomous Cisco Aironet access points tend to uncover the

flooding first, since they try to resolve the ARP request themselves. But Miller's team has seen the CPU utilization on the WLAN controllers spiking as they try to process the request flood passed on to them in control traffic from the thin access points.

"I don't believe it's a Cisco problem in any way, shape, or form," he says firmly.

So far, the communication with Apple has been "one-way," Miller says, with the Duke team filing the problem ticket. He says Apple has told him the problem is being "escalated" but as of mid-afternoon Monday, nothing substantive had been heard Apple.

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COMMENTARY
ANDREW SEYBOLD MEDIA

A Phone For All Networks

Tuesday, July 17, 2007

The Chairman of the FCC, Kevin J. Martin, has stated that he really wants consumers to be able to purchase a phone and then be able to use it on any network. He says that perhaps, for now, it should be a requirement on the 700 MHz spectrum, but left open the option of making it a requirement on all commercial wireless networks.

Yet the FCC appears to be setting up the 700 MHz auctions to include a large number of licenses based on geographic location. Estimates run into the hundreds and beyond, depending on whom you listen to. If Chairman Martin is to have his way, he either has to require every license holder of the new spectrum to employ the same wireless technology or require handsets to include all of the technologies that might be chosen for use on the 700 MHz band.

> **"Can engineers put all of this into a single phone that will sell for a reasonable price and have decent battery life?"**

Today, the choices would include UMTS/HSPDA/HSUPA, CDMA12000 with EV-DO Rev A, and not much more. However, by the time the dust settles on the auction and the spectrum is cleared, the choices will have been expanded to include LTE (Long-Term Evolution-the follow-on to UMTS), UMB (Ultra-Mobility Broadband—the follow-on to CDMA2000 1xEV-DO Rev A and B), perhaps WiMAX (if the WiMAX groups have completed their work on an FDD version of WiMAX) and 802.20, if that technology is still around and has not been combined with the others.

In order for a phone to meet the intentions of Chairman Martin, it will need to operate on the 700 MHz portion of the spectrum and include all of the wireless technologies that will be used on the various networks. Further, if the incumbent network operators end up with spectrum as an adjunct to their existing networks, these devices will need to incorporate all of these bands and technologies as well. If we want a world phone, we will need to add other technologies and frequency bands.

The engineers who develop phones are some pretty amazing people. They have designed and built phones that support all of the following:

- GSM/GPRS/EDGE

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- UMTS/HSDPA
- Bluetooth
- Wi-Fi (some vendors)
- GPS (some vendors)
- MediaFLO/DVB-H, ISDB-T (one-way mobile TV)
- 700-MHz receive-only (for mobile TV on AT&T□s network)
- 800 MHz (U.S. and elsewhere)
- 900 MHz (Europe and elsewhere)
- 1800 MHz (Europe and elsewhere)
- 1900 MHz (U.S. and elsewhere)
- 2100 MHz (Europe and elsewhere)

Each one of these frequency bands requires RF and antenna components, and the different technologies require sophisticated chips that operate on the various technologies.

On the CDMA side of the equation, the phones support all of the following:

- CDMA2000 1X, EV-DO Rev A
- GPS
- Bluetooth
- MediaFLO/DVB-H/ISDB-T
- Wi-Fi (some vendors)
- 700-MHz receive-only (Verizon for mobile TV)
- 800 MHz (U.S. and elsewhere)
- 1900 MHz (U.S. and elsewhere)

And today, to operate in Japan on either the UMTS or CDMA networks, you need a different phone that is configured differently.

Before the ink is dry and the checks have been cashed by the Federal Government, at least one new radio band (U.S), and one new local-area technology (USB 2.0) will also need to be incorporated into the devices that will have the new band and new local-area technologies built into them. So for the GSM/UMTS side of the house, we add 1700 and 2100 MHz to the mix, and USB 2.0 is based on Ultra-Wideband technology, which operates in the above-3-GHZ range spreading its signal over several gigahertz of spectrum.

Add in the 700 MHz band, add in WiMAX (if it is, indeed capable of FDD by then), add in UMB for CDMA networks and LTE for GSM/UMTS networks, and we have a real challenge for the engineers. If we wanted a true world phone, we would have a list that looks like this:

- GSM/GPRS/EDGE
- UMTS/HSDPA
- CDMA2000 1X and EV-DO
- LTE/UMB
- WiMAX
- USB 2.0
- Bluetooth

CTIA Wireless I.T. & Entertainment 2007

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TELL IT LIKE IT IS™
BLOG OF THE WEEK

July 15, 2007 - Bits and Pieces
In New Zealand they have a saying, "bits and pieces," meaning a little of this and a little of that. Since this blog entry is about several different things, I thought I'd borrow the expression I heard so often when I was in New Zealand.

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- Wi-Fi (some vendors)
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- 700 MHz (U.S. only for now)
- 800 MHz (U.S. and elsewhere)
- 900 MHz (Europe and elsewhere)
- 1700 MHz (paired with 2100 MHz)
- 1800 MHz (Europe and elsewhere)
- 1900 MHz (U.S. and elsewhere)
- 2100 MHz (Europe and elsewhere)
- 2500 Mhz

Can engineers put all of this into a single phone that will sell for a reasonable price and have decent battery life? Remember that each frequency band requires an antenna (although antennas can be designed for multiple bands-within limits). Remember too, that each technology has to be accounted for, that the radio portion of the device has to be full duplex (being able to listen and talk at the same time) and most of the new handsets will be able to receive data and voice simultaneously. Meanwhile, GPS, Bluetooth and USB 2.0 all need to be functional. And this does not include a camera and/or video camera, MP3 player or any other technology that needs to be jammed into these small form factor devices.

Even if you decide to build a phone for a specific network, for example, T-Mobile, you will still need 1900 MHz, 1700 MHz, 700 MHz, Wi-Fi, GSM/GPRS/EDGE/UMTS/HSPDA/HSUPA, whatever TV system is chosen, and then all of the other features and functions including Bluetooth and USB 2.0 as well as a GPS receiver for location-based services.

An AT&T phone would be the most complex, especially if it is to be a world phone, and not far behind is a Verizon Wireless phone. What if you are a small operator and cannot buy these phones in large enough quantities to get a decent price? And what about the cheap phones on the market today? In parts of the world, without phone buy-downs, we are seeing sub-$50 phones on both GSM/UMTS and CDMA systems. But they have limited capabilities beyond the markets they are designed to serve.

Under Chairman Martin's plan, I could go into a store and buy a phone, any phone I wanted, and activate it on the network of my choice. If I have learned one thing over the years in working with handset vendors and network operators it is this: Just because a phone has FCC type acceptance does not mean it will work, even on the network for which it was designed.

Think back to the first time you tried to make a PC work on a network or attach to a Wi-Fi access point. If all of the pieces and parts were not perfectly aligned, you weren't able to make a connection and troubleshooting the problems took a long time, usually requiring the intervention of someone else to help troubleshoot the problems. There is a good reason why phones, today, have to be FCC type accepted AND approved for use on a given network.

Chairman Martin, I have one question for you: If you do require device open access on a portion of the 700 MHz band, and that requires someone to build special phones in order to comply (700 MHz-only with multiple technologies embedded), how much do you think that phone will cost at retail, and how many of them do you think would be sold?

Andrew M. Seybold

Share your comments, feedback or voice your opinion! Log in to andrewseybold.com and let us know your perspective on this *Commentary.*

ANDREWSEYBOLD

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Testimony of Richard J. Lynch
Executive Vice President & Chief Technical Officer
Verizon Wireless

COMMITTEE ON COMMERCE, SCIENCE & TRANSPORTATION
U.S. SENATE

The 700 MHz Auction: Public Safety and Competition

June 14, 2007

Good morning Chairman Inouye, Co-Chairman Stevens, and Members of the Committee. It is a privilege to be with you this morning to discuss "The 700 MHz Auction: Public Safety and Competition." Thank you for affording me this opportunity to share with you the views of Verizon Wireless on this important topic.

Introduction and Summary

Congress, the Administration and the FCC have all declared that the deployment of broadband services to the American public is a critical goal. The 700 MHz auction has the potential to make a major contribution to expanding broadband and to delivering the many benefits of broadband to consumers, businesses, and America's leadership in the world economy. I say, however, the potential – because to achieve these benefits, the auction needs to make the spectrum available in ways that will promote, not cripple, broadband. My years of experience in building wireless networks tells me that the 700 MHz auction can unlock even more benefits – but only if it's done right.

I thus want to discuss what I see as two critical actions the FCC should take to help deliver on 700 MHz's promise for broadband.

First, the FCC should adopt a band plan for 700 MHz that will enable rapid deployment of next generation wireless broadband networks.

Second, the FCC should not impose eligibility, wholesale, open access or net neutrality requirements on the 700 MHz band. Those requirements are unwarranted, would deter innovation, and would not benefit consumers.

The 700 MHz Band Plan Should Promote Broadband Deployment While Making Available a Mix of License Sizes, and FCC Proposal 3 Does That

The upcoming auction will enable the development and wide deployment of new fourth generation – or "4G" – wireless technologies and services that will yield tremendous benefits to consumers, businesses, and first responders alike.

In 1997, when Congress adopted the DTV transition plan, wireless data services were very limited – typically providing only about 15-20 kilobits per second. Today, broadband wireless technologies like CDMA EV-DO have been widely deployed, supporting data rates of hundreds of kilobits per second and a wide variety of mobile applications. Verizon Wireless' mobile broadband network, the first in the nation, is available to more than 200 million people who can access broadband services on their laptops, e-mail on their PDAs, and V-CAST Video and Music on their wireless phones. We are now deploying the latest enhancement to CDMA technology, EV-DO Revision A, which will increase data speeds further and support new broadband applications.

New "4G" technologies are being developed that will support mobile data rates of tens of megabits per second. They will unleash a host of new broadband applications that will rival anything available today on wired broadband networks. Doctors will be able to access medical records and CAT scans wirelessly; firefighters will have wireless access

to images of building interiors and floor plans. These wireless broadband technologies promise to improve the lives of American citizens in many ways.

Verizon Wireless believes firmly in the broadband future envisioned by Congress, the FCC and the Administration. We have spent billions of dollars over the past several years to bring wireless broadband to the nation, participating in spectrum auctions and investing many billions more on technology and infrastructure. We believe we are the most efficient spectrum user in the nation – and perhaps the world – and proud of it. We serve more customers with less spectrum than any other operator.

However, the ability of Verizon Wireless – and the entire industry – to continue to deliver on this broadband vision requires access to additional spectrum, auction rules that are open and competitive, and service rules that are flexible and market-based. The 700 MHz spectrum will enable qualified and committed operators to make a real difference in expanding the reach of broadband services, if it is auctioned in ways that will facilitate, not hamper, deployment of those new 4G technologies.

The FCC has offered a variety of band plans for auctioning the 700 MHz spectrum. Verizon Wireless supports FCC Proposal 3, with regional licenses in the upper band. A copy of this band plan is attached to my testimony. We believe this plan is the only one that meets the Government's goals for this spectrum.

- By using regional area licenses in the upper band, coupled with smaller area licenses in the lower band, it makes available the right mix of license sizes and creates opportunities for a variety of applicants, business plans, and technologies. More than 900 licenses would be available for auction.

- It provides adequate contiguous spectrum – 22 MHz – to support very high data speeds for 4G broadband deployment.

- It accommodates public safety's need for useable narrowband spectrum along the Canadian border.

Let me elaborate on why this band plan should be adopted. First, it is important to keep in mind that the entire 700 MHz commercial band should be considered as a whole. With the DTV transition, Congress provided a total of 84 MHz of new commercial spectrum, including 24 MHz that has already been auctioned. This leaves 60 MHz – 30 MHz in each of the upper and lower bands – left to be auctioned. Thanks to technical rules the FCC already put in place, both bands are well suited for mobile broadband services. Any band plan should reflect what has already been auctioned.

Second, we agree with the FCC that the 700 MHz band should include a mix of different license sizes. The FCC has already achieved part of that goal by licensing a significant amount of 700 MHz spectrum in the lower band in small blocks to smaller wireless companies, and it plans to license all remaining "paired" spectrum in the lower band based on smaller markets, including another 700-plus licenses in the smallest areas, cellular market areas, which can be as small as one county. The lower band will thus provide 36 MHz of spectrum licensed on a small market basis, providing ample opportunities for smaller carriers.

What the FCC has not done to date is to auction larger 700 MHz licenses. It can accomplish this by including a 20 MHz paired block of spectrum, to be licensed across wide geographical areas, such as the Regional Economic Area Groupings (REAGs) used by the FCC in last year's auctions for the Advanced Wireless Services ("AWS"). This band plan will help ensure the near-term deployment of next generation wireless broadband networks and to provide the best opportunity for the United States to lead the world in 4G wireless development and deployment.

A contiguous 20 MHz block is important because it will encourage optimized use of that spectrum for 4G technologies and the services it can provide. It is essential that the 700 MHz band plan include at least one spectrum block of at least 20 MHz in total bandwidth, as it did in the band plans for cellular, PCS and AWS.

Larger regional licenses such as REAGs are important because, for over a decade now, we have witnessed the benefits of wide area licenses in promoting nationwide deployment of new technologies. Consumers demand nationwide service and carriers must meet that demand. History has shown, almost without exception, that smaller-sized licenses wind up becoming aggregated so that carriers can achieve economies of scope and scale and operate as viable businesses, enabling them to compete and deliver better products at lower prices to consumers. Aggregating spectrum post auction takes many years and is expensive to carriers and costly to consumers. If Congress wants next generation wireless networks to be a near-term reality, the FCC must auction and license sufficient spectrum on a REAG basis.

The 700 MHz Rules Should Provide Spectrum Opportunity for All, Without Unjustified Constraints That Will Undermine Innovation and Harm Consumers.

Beyond questions of technology lies the critical need to maintain integrity in the auction process. The Commission should set auction rules that allow for full and fair competition by qualified bidders, without artificial and unwarranted constraints.

Spectrum auctions for commercial spectrum licenses have been one of the great success stories of communications policy. Over the past ten years, these auctions have raised many billions of dollars for the U.S. Treasury and accelerated the roll-out of new and innovative services for consumers. The resulting competition in the mobile marketplace has provided a broad range of digital offerings, extensive coverage, high

quality, and low prices. In short, competitive spectrum auctions have been a good deal for American consumers. The Government should not depart from that success.

*1. **Auction Eligibility Restrictions.*** Some parties have sought to game the auction process by proposing to exclude or restrict local exchange carriers, cable operators, and wireless carriers from eligibility for licenses in the 700 MHz band. Such discriminatory eligibility restrictions are aimed at the companies most ready to deploy next generation broadband networks. Restricting participation would depress revenues needed by the Treasury, and delay introduction of new services.

The FCC has repeatedly found that open competitive bidding will ensure that scarce, valuable spectrum resources are put to the highest and best use. Restricting bidding to a limited class of entities strongly suggests that the license may not be granted to the highest and best use. It increases the risk that spectrum would go to entities incapable of putting it to timely, effective use. The Commission should maintain its policy of rejecting all calls for closed bidding.

Restricting eligibility would unquestionably reduce the economic benefits of the auction. Proceeds from the 700 MHz auction will fund multiple programs for the DTV transition and the deployment of interoperable communications systems for public safety. By limiting eligibility, the resulting reduction in competition will ensure that the spectrum will be auctioned at a price lower than its true market value. As a result, the viability of these valuable and necessary programs will be at risk.

Existing carriers have proven track records of designing and deploying highly sophisticated networks. Every year in its CMRS competition reports, the Commission has pointed to vigorous competition in the CMRS market through the competing

networks built by Verizon Wireless and our competitors. There is no basis for barring current providers from the auction; doing so would deprive companies of the additional spectrum they would want to acquire to expand their offering of high quality, spectrum-intensive advanced services.

2. Wholesale Only Requirement. Frontline Wireless has proposed that a portion of the 700 MHz spectrum be licensed subject to several onerous conditions. The first of these is that the licensee cannot use the spectrum itself but must operate as a wholesale-only provider. This is, frankly, an absurd requirement. It makes sense only if you are trying to foreclose any existing carrier from acquiring the spectrum. Verizon Wireless provides both wholesale and retail services, as do many other carriers; and the FCC has consistently found that the industry is robustly competitive. There is simply no credible basis for the FCC to accept Frontline's proposal to strip the very carriers who have built a competitive industry from serving retail customers in the 700 MHz band.

3. Open Access Requirement. Frontline also proposes something it calls "open access." This term has been the subject of much discussion but little or no definition or specificity. Frontline provides almost no meaning to this concept, other than vague requirements that the licensee permit any wireless device to connect to the network, and that the licensee operate solely as a wholesale service provider. Frontline claims that these requirements are important components of its proposal to build public safety a broadband network. However, many public safety agencies have raised doubts about how Frontline's open access requirements would impact them. Moreover, saddling the spectrum with these obligations would reduce interest in the spectrum at auction, positioning Frontline to acquire the spectrum at a price substantially below market value.

Frontline's request for "open access" should be viewed as defining requirements for *physical* access to existing networks. These requirements disregard the way wireless networks are designed and operated to meet the needs of subscribers. On Verizon Wireless' and others' networks, the cell phone or PDA is in fact part of the Network. It is constantly communicating with the network, and we are responsible for its operation under our FCC licenses. This is why we put all wireless devices through rigorous quality testing. Further, and just as importantly, customers see their service as inclusive of the device they use and have come to expect the carrier to ensure its performance.

Imposing physical access conditions would risk harm to the network and undermine the quality of service provided to our customers. Moreover, experimenting with such an uncontrolled regime for a system that is specifically designed to be used for public safety communications, as Frontline proposes, would be particularly dangerous. Frontline's plan contains no safeguards to ensure that customers' untested devices and novel uses of spectrum would not reduce the quality of service provided to public safety or commercial users, or cause harmful interference to other users operating within the licensed spectrum or others operating in adjacent spectrum. For example:

- E-911 Service could be compromised. A mandate that carriers allow customers to attach any device to the network would make it more difficult for carriers to comply with their E-911 obligations. The handsets that customers would attach to the network would not necessarily be E-911 capable; and even if they were, the network might not be able to communicate with the handset to determine the caller's location.

- Handset prices will likely increase. Handsets designed to operate with multiple, or all available, wireless networks will require additional hardware and software to ensure basic operability. Some applications may need to be loaded in multiple formats. Think of a computer that has to be both Apple and Windows capable and must support game-playing on Playstation, Xbox, Game Boy, and Nintendo platforms, etc. Interoperability has a price, with very few practical benefits. You generally use only one network at a time.

- Harms to wireless users would occur. Because wireless devices share a network's spectrum resources, every device has an impact on the spectrum available to other users. An unapproved device can impact the network and its capacity to serve the maximum number of customers. It can also cause interference to other users, blocking their access to the network. Wireless operators today ensure that every device is subject to rigorous testing and meets certain quality standards to guard against these risks. An open access regime would deprive operators of that ability and thereby protect their customers.

4. Net Neutrality. Perhaps encouraged by Frontline's proposal, several groups want to seize on the 700 MHz auction as a way to impose broader "net neutrality" rules on wireless carriers. They are demanding that the FCC somehow dictate net neutrality, even though each of these groups would appear to define it in different way. I have the same concerns about a broader net neutrality mandate as I do for open access. Generally, proponents of the concept focus on issues involving traffic routing and management along proprietary networks. If what the proponents are talking about are the rights of users to access the public Internet and applications of their choice, wireless customers can already do just that. If, however, they want to preclude wireless carriers from offering their own value-added products and services, or to require wireless carriers to permit customers to download any application they want onto their handsets, I have the same fundamental disagreement. On a wireless network, applications have the potential to cause serious harm. For example:

- The user experience could be compromised. In the wireless context, air interface signal-to-noise conditions vary by user with time. More packets can be delivered to the user when the signal-to-noise ratio is good than when it's bad. The wireless industry uses sophisticated queuing and scheduling algorithms at each base station to optimize throughput by sending packets to users during times of good signal-to-noise conditions. Would these practices be precluded? These practices improve the user experience for all subscribers.

- Users could find network access more difficult. In the wireless broadband context, users on-line within a certain geographic area share the available

spectrum resource; therefore, the bandwidth requirements of one user can affect those of all users in the same geographic area. A few users operating "bandwidth hog" applications can actually prevent other users from obtaining access to the network. If the wireless operator cannot manage the bandwidth hog applications in some principled way, it cannot achieve a fair allocation of the available resources for as many subscribers as possible.

- Just as Internet content and applications vary in size, they also vary in their sensitivity to latency, or delay. Email delivery and web searches are generally not overly sensitive to latency. On the other hand, certain applications are very sensitive to latency, and require "fast lane" delivery of packets. An operator must have the flexibility to provide priority transmissions if the quality of service requires.

- Security risks would increase. Hostile content and applications are common on the Internet in the form of viruses and denial of services attacks, among others. Network operators address and deal with such risks by filtering them out, thereby ensuring improved user experiences for all subscribers on-line.

- Beneficial content filters could be jeopardized. Broadband networks can establish filters that protect children from adult content, or some computers from any specified content. There is no reason why consumers should not be able to subscriber to filters of their own choosing, whether by subject matter or size or point of origin, if the technology is available. Again, the network operator would have to manage against certain packets to benefit consumers.

Having spent many years building and operating wireless networks, I strongly believe that open access and net neutrality requirements would do a huge disservice to wireless industry and our customers. Wireless companies have delivered enormous benefits to the economy and consumers by being free to innovate and differentiate their products. It is bad enough that there is no problem that could justify such regulation. Worse, imposing open access and net neutrality would cause real harms to one of the nation's most successful industries, to innovation, and to our customers.

Conclusion

Verizon Wireless urges that the 700 MHz auction be held as soon as possible, without rules that foreclose bidders or impose unfounded and ill-advised requirements.

The 700 MHz auction, if conducted fairly, and without the sorts of risky and counterproductive conditions discussed above, holds the promise of raising billions for the U.S. Treasury while delivering the benefits of the most advanced wireless technology to the American public. There will be plenty of winners, in the form of innovation, job creation, economic growth, and increasing U.S. global competitiveness. But if we get it wrong, and use this auction as a platform for forcing unjustified and risky spectrum policy onto the wireless industry, the only losers will be the American public.

FCC 700 MHz Band Plan "Proposal 3"

with REAGs in Upper Band

Lower Band

(698-746 MHz)

A	B	C	D	E	A	B	C
Ch 52	Ch 53	Ch 54	Ch 55	Ch 56	Ch 57	Ch 58	Ch 59

Block	Frequencies	Bandwidth	Pairing	Area Type	Licenses
A	698-704, 728-734	12 MHz	2 x 6 MHz	EA	176
B	704-710, 734-740	12 MHz	2 x 6 MHz	CMA	734
C	710-716, 740-746	12 MHz	2 x 6 MHz	CMA	734
D	716-722	6 MHz	unpaired	EAG	6
E	722-728	6 MHz	unpaired	REAG	12

Already auctioned

Upper Band

(746-806 MHz)

C		D	A	Public Safety		B	C		D	A	Public Safety		B
Ch 60	Ch 61	Ch 62	Ch 63		Ch 64		Ch 65	Ch 66		Ch 67		Ch 68	Ch 69

Block	Frequencies	Bandwidth	Pairing	Area Type	Licenses
A	762-763, 792-793	2 MHz	2 x 1 MHz	MEA	52
B	775-776, 805-806	2 MHz	2 x 1 MHz	MEA	52
C	746-757, 776-787	22 MHz	2 x 11 MHz	REAG	12
D	757-762, 787-792	10 MHz	2 x 5 MHz	REAG	12

Already auctioned