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BROADBAND CONNECTIVITY

COMPETITION POLICY WORKSHOP

DAY 2

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U.S. Federal Trade Commission Conference Center

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A G E N D A

A G E N D A (continued)

A G E N D A (continued)

P R O C E E D I N G S (11:05 a.m.)

CURRENT AND FUTURE STATE OF BROADBAND COMPETITION

MS. OHLHAUSEN: We are going to start in a moment.

MR. SCHMIDT: Thanks very much, Maureen. Thanks everyone for braving the weather and coming out this morning. We have a great panel on a very, very interesting and challenging topic, so we want to jump right into it.

I am just going to introduce each of the speakers as they get up to speak and give a brief presentation. I think our hope is to keep each of the panelist's individual presentations to somewhere in the 10 to 15 minute range. That should leave us plenty of time for some questions at the end of that time.

Also, in order to shorten the introductions and the like and to get more into substance, I am going to refer you all to the bios that are contained on the website for the detailed biographies of each of the speakers. I will just give their current affiliations.

With that, let's start off with our first speaker, who is Michael Altschul. Michael is the Senior Vice President and General Counsel of CTIA Wireless Association.

PRESENTATION OF MICHAEL ALTSCHUL, CTIA WIRELESS ASSOCIATION

MR. ALTSCHUL: Thank you, Jeff. First of all, we were joking earlier, instead of the last mile problem, I think this morning many of us experienced the first mile

problem in getting out of our homes and getting here. We have made it and these are important issues.

On behalf of CTIA's members, who are the nation's commercial mobile radio service providers and their suppliers, I want to thank the Commission for the invitation to speak on this panel.

As we heard yesterday, wireless communications are now being provided over licensed and unlicensed spectrums, and they are providing broadband connectivity to the Internet, along with wire line carriers, cable companies, satellite providers, and others.

What I want to do this morning is to demonstrate some of the speeds and capabilities of these different kinds of services to show you how we really are all in the same ball park.

There is a lot of information on this slide, but it demonstrates that the various alphabet soup of wireless services compete with cable modem and DSL services in speeds.

There is no duopoly. Instead, there is alphabet soup of services. I apologize for the acronyms. As somebody recently pointed out, these technologies, these wireless technologies, have been named by engineers, not marketers.

What they do illustrate is that consumers have a broad range of competitive choices to choose among. I think this also rebuts those who claim that the broadband market is

a cable/telco duopoly unaffected by a wireless oligopoly.

In fact, wireless broadband technologies offer competitive speeds and capabilities. The range of speeds and technologies that are now being provided also show the rapid pace of innovation that characterizes the wireless industry, but is inconsistent with an oligopoly market.

You will see that we have circled some of the speeds. The dial up and dial up equivalent is not considered broadband by the FCC. It is less than 200 kilobits per second.

The 3-G equivalent is a group of services that are equivalent to DSL service. The Wi-Fi and WiMAX services, which are characterized by fourth generation services, are equivalent to cable modem and at least some of the tiers being offered by Verizon's FIOS service.

For those of you who are not familiar with the terms "3-G" and "4-G," they are used in the wireless industry to describe broadband technologies. The first generation was analog, which the FCC mandated for cellular carriers. While this allowed an uniform build out when the service was new, it also ensured that carriers could not compete on technological innovation, since all carriers had to provide the same service.

Second generation services were the first digital technologies. At the time, they were called TDMA, GSM, iDEN

and CDMA. Their introduction represents the beginning of rapid technological innovation and product differentiation in the wireless industry.

Features of these third and fourth generation services are identified in this slide, which begins to describe the various kinds of applications and features that are supported in wireless today.

Some critics of the wireless industry expressed a preference for a single standardized air interface, much like the FCC's approach to the analog cellular standard of 25 years ago.

Technological innovation is a major driver of competition. New wireless technologies enable new services. They drive down costs through more efficient use of spectrum, and they allow carriers to introduce features and services that differentiate service offerings in a competitive market.

Cellular carriers are still required to support the AMP standard, and it is no more spectrum efficient than it was in 1982, and it does not support text messages or pictures, just like you can't get messages or pictures over wire line telephones that connect to the LEC network through the RJ-11 standardized interface.

This slide begins to demonstrate the wide variety of broadband devices that are available at your local Best Buy or Circuit City store. It also illustrates the wide

range in screen size, keyboards, memory features and functions that consumers can choose among.

There is a website, Phonescoop.com, that lists more than 800 hand sets and wireless enabled devices that are available in the U.S. today.

Carriers and aggregators must work together and with third party content developers to ensure interoperability, of quality user experience for consumers across the wide range of these devices, and to block objectionable content, such as spam and malware.

In an oligopoly, one would expect stable or rising prices and a lack of innovation. That is precisely what is not happening in wireless. You can go to CTIA's own website, CTIA.org, or the FCC's annual CMRS competition report, or your own experiences as one of the nation's 230 million wireless subscribers, for proof that prices are falling. The number of subscribers are growing, and consumers are using wireless for more and more of their communication needs, including voice, Internet browsing, text messages, and other data services.

This slide is taken from the FCC's 11th Annual Report on CMRS competition. It illustrates the roll out of 3-G technology by county throughout the United States.

It has already been overtaken by events, I must add. It is about a year old. The aggressive deployment by

the nation's wireless carriers has expanded the scope of these services.

This slide has a lot of words, but it is a snapshot of the 3-G services deployed by the nation's five largest wireless carriers. Unlike in an oligopoly, we are seeing new entry and ramped up investment and build out.

Last Summer, as many of you know, the FCC conducted the Advanced Wireless Spectrum Auctions, and awarded more than 1,000 new licenses to 104 bidders.

The number one winner in this auction, T-Mobile, essentially doubled its spectrum holdings across the country, enabling it to impact the status quo significantly. T-Mobile has announced plans to spend $2.7 billion by 2008 building out a 3-G HSTPA network using the spectrum, enabling it to offer more and faster services to its customers.

The third largest winner of licenses was a new entrant, the Spectrum Co-Cable Consortium, which was the highest bidder on licenses totaling 267 million POPs. This will enable cable companies to explore mobile or wireless options and threatens to disrupt any postulated equilibrium.

Two wireless carriers which have been using alternate business models, Metro PCS and Leap Wireless, were also winners in the AWS Auction.

Metro PCS was the fourth largest bidder, winning licenses covering 144 million POPs. Leap was the sixth and

seventh largest bidder, because they participated through two entities, and won licenses of covering about 170 million POPs.

Once the AWS licenses are issued, Leap will have licenses in 36 of the top 50 markets.

These companies, Leap and Metro PCS, are among the fastest growing wireless companies. They demonstrate that not all wireless carriers have the same business model.

In addition, the wireless industry includes carriers with a significant regional presence, such as Alltel, U.S. Cellular, Dobson and SunCom, and we have seen the emergence of successful MVNOs, an acronym which stands for mobile virtual network operators.

The most successful of these MVNOs have designed their service offerings to meet the needs of specialized markets by providing exclusive content and wireless devices tailored to their customers' needs.

While perhaps not the traditional principles of common carrier obligations, consumers benefit from this type of product differentiation.

For example, EarthLink's Helio MVNO promotes its exclusive drift handset and its self proclaimed one of a kind buddy beacon for location based social networking and mobile MySpace service.

While Helio advertises in Wired Magazine, and I

brought a little prop here, because it is such a compelling ad, there is an MVNO named Jitterbug that is advertised in the AARP Bulletin.

I bought one of these Jitterbug phones for my 82 year old mother because Jitterbug's service was developed to meet the needs of older persons. Their handset features large buttons and easy to read text, and there is live operator service and even a dial tone to confirm service.

There are dozens of MVNOs offering differentiated services to all types of users and demographic groups.

Virgin Mobile has a music based service called Textones, which is based on an exclusive deal for content with a major record label and available only on Virgin's Cyclopes phone.

We have seen MVNOs with a Hispanic orientation where users press one for Spanish and two for English.

Disney Mobile's MVNO service is designed to meet the needs of families, and is uniquely Disney from end to end, with exclusive handsets.

We have MVNOs like AMP, who offer content and handsets geared to the young and hip, according to them, which certainly rules me out.

This slide just summarizes an important announcement by Sprint, which is deploying the nation's first 4-G network using WiMAX technology with data rates of two to

four millibits per second.

Today's Wall Street Journal has a story that describes how we in the U.S. through this Sprint build out, which is going to invest more than $1 billion this year, has put us ahead of Europe and the rest of the world.

Finally, if you are looking for empirical evidence that wireless broadband access service has really been deployed and that consumers find great value in these services, the FCC just released their high speed services report for the first six months of 2006.

According to the report, while total high speed access lines grew 26 percent during the first half of the year, 59 percent of all new adds were mobile wireless broadband access customers. In other words, wireless carriers added more new customers than cable and telco combined.

Based on this record of competition and innovation, wireless should not be subject to any net neutrality rules. Policy makers should allow the market to continue to work and regulate only in the event of a market failure.

MR. SCHMIDT: Thanks, Michael. Continuing our distinguished panel on the current and future state of broadband competition with Harold Feld. Harold is the Senior Vice President of the Media Access Project, a non-profit public interest law firm.

PRESENTATION OF HAROLD FELD, MEDIA ACCESS PROJECT

MR. FELD: Thanks. Because of the time limits, I am going to have to blow past these slides real quick.

My key point here is to raise a whole bunch of questions and then based on the uncertainty it will produce, to make some policy recommendations.

Paul Klemperer, one of the more renown economists in Europe, once remarked that it was a lot better for policy people to have only an undergraduate understanding of economics rather than Ph.D.s, because at the Ph.D. level, you can be very seduced by theory and by a large number of elegant models, but if you are an undergrad and you don't get that stuff, you do a gut check and say does this stuff make sense.

Having had some very enlightening Ph.D.s yesterday, I'm hoping to do the Econ 101 gut check here, and part of that is we have this panel backwards. What we really care about are the goals when we are talking about policy here, and how do we best achieve those goals.

In that setting, we only care about competition as a means to an end, not an end in itself, and defining what "competition" means and how it works and whether it will in fact emerge on its own is very difficult, because sometimes, it is not enough to just say, oh, competition and let's deregulate, you have to look out there and say what am I

going to do to make competition happen, and if I have competition, how is it going to work right to achieve the policy goals.

Congress has set some specific policy goals. I am going to blow by the various statutory provisions I have cited here and translate into plain English.

Goal number one is cheap broadband for everybody. Number two is the Internet is open and diverse as it exists today or better. When I say that, I don't just mean on the consumer side, which is actually bullet number three.

Everybody should go back and read Reno vs. ACLU, that case on the Communications Decency Act, and see what people were excited about. It was an Internet as diverse as humans thought, where anybody could get out there and say whatever the heck they want, and things like the growth of social networking and all these other great services that people now want to sell, are all about what Joe Farrell and Gigi Sohn were talking about yesterday and the pleasure to communicate.

The First Amendment cares about this stuff. Our democracy depends on this stuff, and Congress has told us to protect it as part of the policy.

Any policy that doesn't protect that, even if it is more economically efficient, is a failed policy.

We want lots of competition for all goods and

services related to Internet access or available on line, and finally, I did not want to forget good old Section 230 for the de-regulatory types, the unfettered by Federal or state regulation, whatever that means, and as we will discuss, that is a little hard to define.

What do we mean by "competition?" That is a very hard question. Everybody here from the FTC understands that it is not just an issue of counting noses. Sometimes you need to worry about how comparable the service is, market share may or may not matter, potential market share may or may not matter, lock-in disclosure, other things that keep people from switching.

For my money, competition only works if you have enough people who can switch to discipline bad behavior. Otherwise, who cares if you are a provider.

One of the things that means is you have to ask whether these services are substitutable, as economists like to say.

My example here is soda. Does it compete with bottled water? Yes, probably. Does soda compete with tap water? Well, maybe a little bit because the presence of tap water keeps soda from getting too expensive, but I think we would all agree that soda does not compete with mud puddles, even though they are both liquid, and if you are really desperate, you can drink both.

Competing products. Are they available in sufficient numbers to affect discipline. Do we care about whether they are available nationally, regionally or locally.

Bottled water may compete with soda, but even free soda 100 miles away doesn't make a difference.

Lock-in, convergence, sticky features, these are all things that have not been really discussed in the debate. We like to think about broadband as just this independent stand alone product, but it's not, and it's not being marketed that way.

To go back to my water example, if you have a Poland Springs or whatever cooler in your water cooler service, and you want to switch, but in order to switch, there's a termination fee of $1,000. It will take five days out of your time. You need to buy new glassware in order to be able to drink the new water. You also have to switch from oil to natural gas heat because that was a bundled service.

You are a lot less likely to switch. That is important as we move forward into how this is being marketed.

The other thing to keep in mind is users cannot use a potential service. Bottled water, even if it competed with mud puddles, does not compete with "it looks like rain."

The problem with a lot of what I'm hearing is don't regulate because it looks like rain.

How much competition is enough? That is a very

good question, and it is very hard to determine. Even just saying duopoly is not enough. Economists can tell you and we see it in the real world, sometimes a duopoly is enough and a lot of times it isn't enough, and we don't know anything about how this market is functioning at the moment -- let me rephrase that.

We know some things, but we do not have nearly detailed information enough about how this market is functioning, whether there is going to be conscious parallelism, how the upstream market takes place in this, the complex relationship, vertical integrations, not merely with content but all the way up to things like backbone and transport.

These are hard questions that are obscured in the debate over well, there are five cellular guys, a satellite guy, a cable guy, and a telephone guy. Okay.

Is this market really unfettered? People love to portray this as being all about maintaining the pristine non-regulated state. Bunk. There are a lot of laws that impact both the direct service providers and the related markets, and it has to be recognized that these laws impact how competition is going to unfold.

If you are saying broadband over power lines, BPL is going to compete with telco's and cable, but you need to take into account that under the pole attachments law, one of

the great negotiating chips for the BPL guys is utterly thrown out the window.

If we are going to talk about cable and telco competition, we have to recognize that program access takes an arrow out of the quiver from the cable guys, and going head to head on their bundled services, and similarly, mandatory interconnection, termination of calls favors the cable companies over the telco's because they can have their telco service be completed and terminated and sell an effective bundle, whereas it may not be as easy for the telco's to offer a genuinely competing video service.

That difference matters for the emergence of the broadband market and broadband competition.

Federal laws in other areas certainly make a huge difference. You can't talk about wireless without recognizing the fact that without a Federal license, you are not going to be doing WiMAX.

If you are relying on unlicensed, you have to take into account the different laws that govern that space as well, state and local. It also makes a big difference that it is not just about franchise.

There are a wide number of things, patents and other extraneous laws. They make a huge difference in how competition is actually unfolding on the ground and the presence or absence of government access also makes a huge

difference to the reality as it unfolds, divorced of the theory when you chop it into different bits.

How does the real world stack up today? Well, broadband is not wicked fast. In fact, especially when compared to other countries, it is wicked slow. It is not available everywhere. I am sorry, that is true even in satellite and these other services.

To take just one example. If I'm in an MDU in some place downtown in a less than nice neighborhood, I need a clear view of the southern sky in order to get satellite Internet.

That knocks out three-quarters of the people who happened to be facing the wrong direction in that building, and probably knocks out the first half of the building on the south side as well, because they can't see past the building next to them.

The notion that any one of these at the moment really is a complete national competitor everywhere on the ground is simply not true.

The other thing I do have to point out, when we do these comparisons, we tend to care about the people in the world. If we forget about fly over country, poor people, Native Americans, those neighborhoods that we are asking to be relieved of build out requirements so we don't have to see them, then yes, things are looking up.

If you want to say I can switch to four or five different folks in Montgomery County and Arlington and screw the people out in Montana, that's great. That is not our national policy.

How does this stack up in the real world today? We are talking 95 percent, even under the FCC's best numbers, where we are only talking about 200 BPS, so we have lowered the bar as far as we can, but even so, 95 percent of residential subscribers, according to the FCC's latest report, are still taking DSL or cable as their primary home service.

That's huge. Again, on the policy stuff, on the things we care about, we want residential broadband because residential broadband has a huge impact on people's behavior, what they say, how they think.

Bluntly, there is no evidence of substitutability for other services. People view the Internet available on this as a substitute -- not as a substitute rather, but only as a supplement.

Internet content and service is still competitive and diverse, but the ability to tier is relatively new and for all we know, it may be happening. This is all going to be MVA'ed. We are never going to know until it starts having really bad consequences.

On the other hand, I also point out it is going to

take a couple of billion dollars of investment, which is why Cisco is so hyped on this stuff, because they will sell that equipment in order to make it possible, so we have to figure it will probably be a little while to get these things to happen.

Is competition going to emerge on other platforms? Excellent question. Again, have to take into account these realities. You can't just ignore the reality and wave this stuff away, the technological challenges, the market forces, potential presence in the market, all these things make it uncertain.

We don't know about how the lock-in is going to work. How is duopoly shaping up then? We seem to have duopoly in residential space. Is that working? Well, the problem is not really -- after an initial period where DSL was trying to capture new subscribers, because we had an immature market, we had people out there who weren't subscribing to either service, so we had a brief period of DSL trying to catch up and cut its prices, but now we are seeing a slow down.

We are seeing conscious parallelism. These guys are looking at each other and trying to be just a little bit better so that they can keep people.

In this uncertain environment, what do we do? Do we intervene or do we say don't intervene? This is to my

mind the question of the health inspector versus the restaurant critic.

Restaurant critics come in after a restaurant has been open after six months so they can it time to work, you know, and then make a recommendation to diners. Health inspectors come in before a restaurant is allowed to open to keep people from getting sick.

In this particular case, we need to worry about what economic theory tells us about the incentives and the potential dangers, which I think weigh heavily in favor of preserving openness through a network neutrality requirement, betting on cartelization historically and based on the natures of the market is certainly the way to bet.

We might get more competition, but we will see. Discrimination. All that plays the odds.

Other countries, by the way, with more intrusive regulations are whipping our butts, so the notion that intervening now is going to delay deployment is somewhat suspect.

Finally, this is critical infrastructure. This is not turnips or tulip bulbs. If we are talking about betting everything about our economy and our democracy on well, maybe this will all work out and we shouldn't intervene, I think that ought to give us a lot of pause.

My recommendation is network neutrality, not just

for the reasons I've said but because for democracy, civic engagement is absolutely critical.

I am terribly worried about just people not being able to afford to do the stuff they are doing now if they have to pay for differential tiers.

All of these guys will tell you they have a duty to their shareholders. That's great. I do not want to see free speech be the collateral damage to economic efficiency. That is a very real problem if our policies are only structured around producer incentives.

Finally, if we are going to look at this, we need to figure out how competition is actually going to work and be prepared to intervene on a regulatory level to make competition work.

We need to get rid of these shibboleths of level playing field and technological neutrality. This is not a football game. Reality matters. Technologies are different. People use and access this stuff in different ways, and it is important how they do so.

If you are going to rely on competition, you have to ask do you want actual competition or not, or are you just in love with the theory.

Finally, we need to recognize that we may need to encourage other potential broadband delivery forms directly. The main system of the Internet was built on government

subsidy and contracts and volunteer labor. The first backbones were built through government subsidy.

A lot of this stuff has been built using different types of economic models that encourage volunteerism and mutual cooperation, and we ought to start thinking about what are we going to need to do to make it possible for those things to happen and not just worry about the incentives for the players that we all recognize as the biggest players in the room.

Thank you.

(Applause.)

MR. SCHMIDT: Thank you, Harold. Our next speaker will be Christopher Putala. Christopher is the Executive Vice President of Public Policy of EarthLink.

Christopher?

PRESENTATION OF CHRISTOPHER PUTALA, EARTHLINK

MR. PUTALA: Thank you, Mr. Schmidt.

Thanks for the opportunity to participate in this panel today. Happy Valentine's Day to all.

I have a brief written statement I would like to submit, but let me summarize.

Again, I'm Chris Putala, Executive Vice President for Public Policy at EarthLink. By way of introduction, EarthLink is the nation's largest independent Internet service provider and a publicly traded company based in

Atlanta, Georgia.

We are proud to provide Internet access to more than five million customers around the country. We provide these services through a wide variety of methods, DSL, dial up, cable modem, commercial wireless, Wi-Fi, broadband over power line, and anything else we can come up with, to bring the Internet to consumers.

We are the leading owner and operator of musical Wi-Fi networks offering service on networks that we own, built and operate in Philadelphia, New Orleans, Encinitas and Anaheim, California. We have service coming soon to Alexandria, Virginia, at Atlanta, Georgia, Houston, Texas, Pasadena and San Francisco.

We partnered in 11 markets to rent unbundled loop from the incumbent telephone company, and then combined those with our own electronics to provide a wicked fast DSL product, up to eight megabits per second, faster than DSL offerings at 1.5 and 3.0.

We also buy broadband from cable and incumbent telephone companies where they will agree to sell to us.

We are an investor in broadband over power line technologies, and Helio, as Mike pointed out, is our mobile wireless joint venture with Korea's SK Telecom, which is on the cutting edge of wireless data offerings.

In short, we are well positioned to comment on the

current and future state of competitive alternatives for consumer broadband.

I want to start by pointing out, we are all parties to the net neutrality debate and agree, and that is the willingness of all of us to invoke regulation when we are on the short end of someone else's market power.

Unfortunately, we are having this debate because some of us say hands off when they have market power. For example, when the Bells go to enter television markets, they recognize they need access to content if they are to have a fighting chance to compete against cable. No TV offering in Philadelphia would have much of a chance without being able to offer Phillys games.

So, they take advantage of non-discriminatory television neutrality rules, also known as program access rules.

Last year, for example, Verizon filed a complaint at the FCC under these rules to get access to broadcast the Yankees in New York. I'm a Red Sox fan, but I still think the folks in New York should be able to see the Yankees on as many competitive alternatives as the market can provide.

Similarly, when cable provides telephone service, they recognize they are not going to have very good luck starting a new telephone service if their customers can't send and receive calls to the millions of Bell Company

telephone customers.

Wireless came to the same recognition more than a decade ago. Cable and wireless take advantage of laws requiring non-discriminatory telephone neutrality, also known as interconnection rules.

I respectfully suggest that these same open access, non-discrimination goals guide policy makers as they consider appropriate policies for Internet access. Incumbents with a strangle hold on vital inputs should not decide who can sell television, telephone, or Internet services.

This is the fundamental point of television neutrality, telephone neutrality, and Internet neutrality.

This brings us squarely to the first key question addressed to this panel. Is this market still a duopoly? In other words, are there anti-competitive strangle holds on vital inputs?

The answer to this foundational question, as it was when the FTC examined the AOL/Time Warner merger, is yes.

An especially resounding "yes" when broadband is evaluated, as it must be, not as a single product market, but as multiple product markets.

Let's just look at the FCC's recent broadband report as of June 2006. Over 93 percent of all broadband is provided by a cable company or an incumbent telephone company. That is 60 million out of 64 million lines

nationwide.

The much heralded independent alternatives are still tiny. EarthLink and others filled with optimism are working hard to make them from tiny to small to medium to big. They are still tiny.

Broadband over power line service, for example. Nationwide, 5,208 lines. Fixed wireless is only about 360,000 lines nationwide. Mobile wireless, not affiliated with an ILEC, serves less than two million total broadband lines nationwide.

The numbers are even worse when broken down by speed, which is a crucial ingredient for consumer Internet access. For lines between 2.5 megabits per second and 10 megabits per second, just 19,802 out of more than 29.5 million are served by fixed or mobile wireless satellite or broadband over power lines.

That means that 99.93 percent of this fast category, 2.5 to 10.0, almost all of those 30 million lines are served by DSL, cable modem, or fiber.

Not enough evidence? Let's look at some pricing data. One hallmark of a duopoly is duopolists do not compete vigorously on price. We see that today, too. You don't have to take my word for it.

Investment analyst Sanford Bernstein has written that Comcast cable modem average revenue per unit has not

declined, and in fact, has slightly increased over the past two years, increasing from $42.91 per month up to $43.14 per month.

The Sanford Bernstein report goes on to observe "The broadband market has proven less price sensitive and less cross elastic than once imagined, as consumers have, at least up to now, been willing to trade price for speed."

In English, this means we can't just look at all broadband as being equal. Even really competing with one another.

For example, this is why, as Mike pointed out, commercial wireless broadband offerings appeared actually to be competitive. We are seeing price decreases. We are seeing a robust wholesale market. It's one of the reasons our joint venture, Helio, can exist.

That does not mean that we are seeing that same kind of competitiveness, in fact, we are seeing the opposite, in the high speed broadband residential market.

For EarthLink, this means as we go to compete with Comcast and Verizon in Philadelphia, we are going to try to offer both our municipal Wi-Fi broadband service with speeds of about a meg up and down, as well as our eight megabits ADSL two plus or wicked fast broadband service that requires us to have access to Verizon's unbundled loops.

The point remains because we have a Bell/cable

duopoly market, there is a need for equal access protections, non-discrimination rules, so that powerful incumbents cannot put their thumb on the scales of Internet competition.

When a few control key inputs, regulatory action is justified, to ensure these inputs are supplied on reasonable and non-discriminatory terms. That is what holds for television neutrality. That is what holds for telephone neutrality. That is what ought to hold for Internet neutrality.

Unfortunately, and as a frustration of anyone seeking comprehensive, effective and competition based answers, the Internet neutrality, some actually want the FCC to run head alone down a path of reinforcing duopoly, particularly in the higher speed broadband offering by forebearing from loop unbundling, which is critical to EarthLink and many other innovators' access to using new electronics on old wires to provide faster, better and competitive broadband offerings.

Any solution to net neutrality must expand and certainly must not shrink the full range of competitive alternatives to the cable and incumbent telephone companies across the full range of broadband markets.

That is why municipal Wi-Fi broadband is a critical part of net neutrality solutions. Similarly, any solutions of net neutrality must continue to allow companies such as

EarthLink to get access to unbundled copper loops so we can provide the super fast, wicked fast broadband services to more and more consumers.

If competitive offerings are not encouraged and developed, this Commission will almost inevitably be drawn into regulation of the duopoly.

As this Commission has set forth, it has jurisdiction over broadband connectivity, and everyone should be aware and watch very closely. This agency has already testified twice before Congress, to oppose measures that would effectively extend the common carrier exemption to broadband.

Finally, as this Commission is also well aware, even competitive markets only can function well if consumers are well informed. Consumers need to know what they are buying.

Thus, any broadband connectivity provider that limits access to or prefers specific Internet applications or content should be required to disclose those limitations or preferences clearly to consumers.

Just yesterday, Commissioner Leibowitz commented, and I quote "The fourth freedom is particularly important to us at the FTC. Some of the most critical issues regarding the Internet involve transparency and disclosure. Will carriers slow down or interfere with applications or

services? If so, will consumers be told about this before they sign up? To my mind, failure to disclose such material terms or conditions should be considered unfair, deceptive, and in violation of the FTC Act.

Does anyone disagree with that? Okay. We have unanimity."

(Laughter.)

MR. PUTALA: The fourth freedom. Let's just recall what the fourth Internet freedom is, consumers are entitled to competition among network providers, application and service providers, and content providers.

I hope the unanimity of yesterday continues today.

In closing, robust competition and full consumer disclosure can break the duopoly, and to paraphrase Chairman Majoras, protects consumers through the market, but those robust competitive alternatives have to be allowed to exist.

Thank you. I look forward to your questions.

MR. SCHMIDT: Thank you, Christopher. Our next speaker will be John Thorne. John is the Senior Vice President and Deputy General Counsel of Verizon.

PRESENTATION OF JOHN THORNE, VERIZON COMMUNICATIONS

MR. THORNE: Jeff, thank you. It's a pleasure to be here. I welcome all you who braved the ice and those who are at home by your warm fires.

In addition to working at Verizon, I also am an

adjunct professor at Columbia University, and last Fall, I had a chance to teach at Georgetown Law Center, across the street, which gave me a parking place this morning. I'm grateful for that.

If I sound a little bit academic, I apologize in advance for that.

Over the past ten years, the policy of Congress and the Federal Communications Commission has been to encourage investment and innovation in broadband networks. This policy has been wildly successful.

We have witnessed over the past decade one of the largest infrastructure deployments in history. Competition has proliferated. Prices have dropped. Service quality has improved, and new technologies have been deployed.

The future will bring even more, unless policy makers reverse course by adopting pro-regulatory approaches that have been labeled variously as net neutrality.

It is no accident that the broadband revolution started on cable TV systems. They began life already lightly regulated with their new services, and in the 1996 Telecom Act, they were relieved of some additional regulations that had constrained them.

This enabled cable operators to gain Wall Street's backing for rough numbers, $100 billion, of investment to convert their one way pipes into two way broadband pipes.

For a while, cable had the field to itself because phone companies and others were subject to a regulatory regime that imposed sharing obligations and price regulation on their networks.

Lifting those regulations in 1996 and the subsequent years at the FCC has led to accelerated phone company broadband investments, DSL deployment, in particular, has ramped up sharply in the years following deregulation of DSL, and is now catching up to cable.

The DSL challenge in turn led to the cable companies investing more in their networks to offer faster speeds. Comcast about two weeks ago announced it is going to invest $5.7 billion in infrastructure for 2007, which exceeded the analysts' expectations for that company.

Now the phone companies have moved to the next generation of their products. Verizon is spending $18 billion to deploy a fiber to the premise network called FIOS, which will eventually reach 18 million customers by the end of 2010.

If you look, for example, at the Consumer Report that came out, I think it was last month's, it urges you, if you can get it, to get FIOS. It is the best product available.

FIOS provides over ten megabits per second with new versions to come that will exceed or offer up to 100 megabits

per second.

AT&T and the other telecommunication companies are spending $4.6 billion over three years to deploy a fiber to the node network to 19 million homes.

Meanwhile, you heard a little bit from Mike, but it is a clear thing that wireless companies are now accelerating their offerings of 3-G broadband technology. Verizon's EVDO broadband wireless network now reaches 200 million people with broadband Internet access speeds of up to two megabits per second.

The FCC's most recent report to Congress on wireless competition said that for the first time in years, America's wireless networks had caught up with and surpassed the European wireless networks in terms of speed and coverage.

Fixed wireless. You heard Chris talk a little bit about his company's efforts. Fixed wireless has now become a viable broadband alternative. WiMAX provides speeds up to 155 megabits per second, with a range of up to 30 miles.

Clearwire-Intel, not on the panel, but they easily could have been, is offering WiMAX in 30 cities and expanding.

Tower Stream is offering WiMAX in six major metropolitan areas. Last August, Sprint, as Mike mentioned, announced that by the end of 2008, it expects to spend $3

billion to build a nationwide WiMAX network to provide customers access in a range of two to four megabits per second.

Some estimates are that there are now 40,000 Wi-Fi hot spots in America today, which is more than in any other country on the planet.

There are several hundred U.S. municipalities in the process of installing city-wide Wi-Fi networks, already 65 cities have such networks. Some of the municipal Wi-Fi networks include the ones that Chris' company is deploying, Google is deploying.

Those often now are supported in part by vertically integrated content, such as advertiser supported search, in Google's case, in order to make the service more affordable to consumers.

In San Francisco, for example, Google will be the exclusive provider of content on the advertiser supported services that it and EarthLink plan to offer.

There are now three satellite companies investing substantially to improve their nationwide broadband coverage. They offer speeds comparable to the most widely purchased DSL offerings.

Recent technology advances have allowed broadband over power lines, which has become in many places a feasible access alternative. Google backed current technologies is

rolling out BPL in Texas and Ohio. The current speeds are in the range of three megabits per second, but the next generation is offering speeds as high as Verizon's FIOS, 100 megabits per second. Other power companies have started their deployments as well.

Cumulatively, this is a massive program of private investment and innovation. Verizon alone for the past three years running has become the number one capital spender in the country. This actually amazed me. I put it on a slide so you could see it, too.

If you go through, who would you think was spending the most in capital in America? General Electric. The big oil companies. GM. Ford. Intel. This is a list of the biggest. Verizon for three years has been the number one capital spender in the United States.

There is no more cutting edge technology than the broadband networks we are building today. My friends watching this in California will say to themselves that they are the ones that are high tech and that the Verizon guys are the ones that wear the hard hats and get the dirt under their fingernails, digging trenches in the streets.

The science and engineering that we are deploying in our broadband networks, networks that enabling universes of video data and voice with the reliability of the old phone system, the science and technology is truly leading edge whiz

bang stuff.

I took over at Verizon the intellectual property group, and we have so far to date been awarded 2,500 patents on the innovations that go into this network. We have another 1,000 patent applications pending.

Unlike most historic infrastructure projects of this scale, when we make these huge investments, we are not being granted exclusive franchises, and we are not being publicly funded.

We are rolling out these networks in the teeth of fierce competition and extraordinary technological risks.

When Verizon puts its fiber down a street, it costs us, in round numbers, $800 per home. It costs us again, in round numbers, another $840 to connect the home that actually takes the service. We spend the money to pass the home, but we don't know whether the customer is going to buy broadband service at all, or buy it from us.

Competitors make these large and risky investments for the opportunity to earn a return commensurate with the risks. That includes having the freedom to innovate, differentiate, and make commercially sensible decisions needed to compete and to win in the market.

The core element of the net neutrality advocacy campaign, the central premise of the whole theory, is that phone and cable companies have a choke hold on the last mile

of Internet access, and that we are really talking about just a duopoly. You have heard that a couple of times this morning.

The net neutrality advocates claim that cable and phone companies can and will use this alleged choke hold to limit the ability of upstream content and application providers to reach end users, and thus, skew competition by favoring some and disfavoring others.

I hope I have stated the case for the other side correctly.

MR. FELD: Not quite, but we can talk about that during the Q&A.

(Laughter.)

MR. THORNE: That case isn't true. We have made clear when consumers buy Internet access capacity from us, they should be able to reach any lawful website they want to get to with that capacity, and we do not and will not block, degrade, or interfere with consumers' access to any website.

No phone company or cable company has the market power to injure competition among content and application providers.

In the first place, the assertion that this market is a duopoly is a gross misrepresentation. The broadband market is fiercely competitive today, and is on a trajectory, clearly, on a trajectory to an ever more competitive market.

Consumers have multiple choices. You have heard some this morning, of access providers, and the choices are not going away, they are expanding.

According to the FCC's numbers, 87 percent of the zip codes, that is almost nine out of ten, have three or more broadband choices. Two-thirds have five or more choices. One-fifth and increasing have ten or more choices.

Broadband prices do not reflect market power. Prices are falling even as speeds are increasing. The DSL average prices have fallen by nearly 30 percent in three years, and by nearly 50 percent for a given speed.

Cable modem prices have decreased 70 percent in three years on a megabit per second basis.

More importantly, and this is probably the most important novel idea I have that I want to impress upon you, regulation advocates, when they talk about a duopoly, are engaging in a sleight of hand about what the relevant market should be, when you think about this.

The question is not what's the range of choices for an end user in a particular locality. That is the power that the last mile owner has over some local -- that is not the question.

The broadband regulation argument hinges on the power that the last mile owner can exert over the upstream content suppliers. That is not just a national market, that

is a global market.

Let me show you a picture on this. The top U.S. websites generate much more traffic from outside the U.S. than from within the U.S., Google, Wikipedia, MSN, Yahoo!, eBay, Amazon. They can reach anybody who uses the Internet in the U.S. or in the world.

Verizon, for its part, to take an example, is only providing consumer broadband access in the fraction of the country where it has local phone facilities.

Whatever Verizon's market share might be looked at from the point of view of an end user in a particular locality, it's no more than about 12 percent on an U.S. basis or two percent on a U.S. basis of the broadband lines that are looked at from the point of view of the content providers.

Does Verizon have the ability to prevent Google or eBay or these others from reaching end users, when the most we could do is temporarily shut off a couple percent of the end users they can see?

The bottom line is, due to the fractured structure of this industry, no last mile provider has any power over the market for distribution of content and applications. There is no single broadband provider that has that kind of power.

Maybe more important, no broadband provider has an

incentive to limit their end users' experience on the public Internet.

What we are selling is precisely the capacity to reach all lawful content and applications. Broadband providers are motivated to maximize the content and applications available to our customers because doing that maximizes the value of our network and the sales we can make.

As we have seen over the past decade, regulation deters competition and innovation, but removing regulatory barriers and thus creating the freedoms to invest, differentiate and earn a profit, encourages competition and innovation.

The de-regulatory policies adopted by Congress and the FCC are working. I urge this Commission to support those policies.

Thank you.

MR. SCHMIDT: Thank you, John. Our next speaker will be Scott Wallsten. Scott is the Senior Fellow and Director of the Communications Policy Study with the Progress & Freedom Foundation. Scott?

PRESENTATION OF SCOTT WALLSTEN, PROGRESS & FREEDOM FOUNDATION

MR. WALLSTEN: Thanks very much for having me here. I do have a Ph.D. in economics. I hope my comments are still relevant, although as a Ph.D. economist -- Harold, I think you might have missed a few days from your Econ 101 class.

I'm sorry. That was completely uncalled for. You should have equal opportunity to take a dig at me later.

(Laughter.)

MR. WALLSTEN: I'm sure you will follow up on that.

I'm going to talk about broadband competition in the United States. Often, these debates start with this comparison showing the U.S. looking relatively bad compared to OECD countries in terms of broadband penetrations. Sometimes people talk about speeds, too.

Right now, I guess the current ranking is 12. I think these statistics are actually completely misleading, and they create a false sense of urgency which leads us ultimately to really bad policies.

The real question we should be asking first is, is there a market failure, and if so, will intervention yield net benefits.

That is where this discussion should start. What is the evidence on that? Well, going from the most recent FCC data, which was released just at the very end of January and goes through June 2006, we see that the number of high speed lines increased by 26 percent in six months, so this trend is just continuing, sort of evidence of good investment.

We know about the problems with the FCC data, that broadband is defined as at least 200 kilobits per second,

which few people would actually call "broadband."

OECD has exactly the same problem. They define theirs as 256 kilobits per second.

The evidence suggests that investment is continuing and the FCC is beginning to collect data on speeds, and I think now it is something like 65 percent of all these lines have at least 2.5 megabits per second. I'm not exactly sure, it's around 60/65 percent.

More important is to look at the number of platforms that are being offered. All of the economics evidence, the empirical research on the question of determinacy of broadband build out, show the importance of competition, and especially facilities based/platform based competition, in encouraging build out and investment.

When you look at the breakdown, you begin to see some really good things happening. It is still dominated by cable and DSL. There is no question about that.

But we begin to see wireless as its own platform coming up, 11 million lines now, as of June 2006. It has to be a lot more now. Mobile wireless. We begin to see fiber coming out. I think in the June 2006 data, there were only about 700,000 fiber lines. I think Verizon has about that many by itself now, so that number has to be much bigger.

The other piece of evidence, or one other piece of evidence from the FCC data on the state of the market, is the

share of zip codes with at least so many providers.

We all know the problem with the zip code data. The problem being basically that if one provider has one customer in a zip code, that zip code is counted as having a provider. It is hard to know exactly how many people are served in the zip code.

It's a big problem. People at the FCC are aware of this problem. It is still right now the best information we have. I wouldn't use it to give a specific number, but it gives you some general trends about availability.

You see the share with zero providers has gone almost to zero. The number of share zip codes with three or more keeps going up and up. This is evidence of investment, even if you wouldn't take this to say that 90 percent of the population has access, although it might.

In general, what we are seeing in this market is huge amounts of investment. Nearly every speaker has talked about this. Verizon has pledged $18 billion. T-Mobile has pledged $2.7 billion. $5.7 billion by Comcast. There were lots of these numbers being thrown out.

We see lots of investment in broadband infrastructure in the U.S. That's what is key to improving broadband service.

Nothing can happen without investment. When you are looking for market failure, that is one of the things you

might look for.

In looking at what would be the optimal sort of supply and price of broadband, or quality, however you want to describe it, we have been talking mostly about supply of broadband, and what technologies are available, and what it takes to put them there.

There is also demand. People don't talk about demand very often. Demand obviously is a critical part of broadband. Not everybody wants blazing wicked fast Internet because they are not willing to pay for it. There is no reason why they should have to.

Lots of things actually reduce demand for broadband. One of them is dial up connections. A lot of people still use dial up. When you hear lots of people say that, they say oh, this is such a terrible thing, so many people are using dial up.

To the extent that people use dial up and they want broadband and are willing to pay for it and can't get it, that could represent a problem.

Most people who have dial up say they have no interest in broadband connections, according to the Pew Internet American Trust Foundation in a recent survey they did. Sixty percent have no interest in broadband. Obviously, that's going to change as prices continue to come down and content available on line increases. That market is

going to slowly disappear, but it's still there. It's pretty substantial.

That is actually a good thing. That reduces demand for broadband because there is another choice that people who love broadband, who want wicked blazing fast Internet for everybody don't like, but this is an option for some people who have currently no interest in broadband.

To the extent that they could have broadband and don't, and that 60 percent, for example, that's fine.

AUDIENCE PARTICIPANT: (Inaudible.)

MR. WALLSTEN: Another way, because people are stupid, it's a market failure --

MR. SCHMIDT: Let's give the panelists the courtesy of not interrupting.

AUDIENCE PARTICIPANT: This is the second time the Progress & Freedom Foundation has had a speaking slot.

MR. SCHMIDT: Thank you. I'm asking you to give the panelists the courtesy of not interrupting.

MR. WALLSTEN: I would be happy to talk to you afterwards, if you would like.

I believe allowing consumers to express their own preferences and purchase what they want is actually a good thing.

Local franchising for Internet television also means the difficulties in getting franchises, and also

reduces demand. It makes it more costly to supply the services because it's hard to get those franchises, but it also reduces demand for those services, and that reduces it in a bad way.

One of the comparisons that people like to talk about is Japan and France, for example, these days, as examples of very good broadband service.

One thing that people don't often mention is that broadband providers were allowed to provide television service over those lines right away. There is enormous demand for television. People like to watch TV.

The more content you can get over those lines, the more demand there will be for that service. By making it difficult to provide television over those services, it reduces demand, and that also helps keep broadband penetration and investment down.

There isn't an obvious market failure here, but policy support still matters a lot. The objective that we should be going for is of course competition. All of the evidence, all of the empirical evidence shows the importance of competition in broadband build out.

One of the things we should do is continue to reduce entry barriers, and one of the most promising ways is through wireless competitors, and the FCC should continue to release spectrum into the market.

The AWS Auction was hugely successful in terms of both the existing providers getting more spectrum and with new providers who hadn't yet been able to either provide voice service or 3-G service, getting more spectrum to be able to provide these.

There is an upcoming Megahertz auction, which the 700 megahertz band has an especially good propagation characteristics for broadband. We might expect to see a lot of broadband coming out of that.

We should continue to move spectrum into the market because we don't know what firms don't exist yet that would want to provide services. We don't know what sort of services they would provide.

That's one way to continue to promote entry into this market. Of course, you want to remove demand barriers. That is where franchise reform gets to be very important.

I'm not advertising the break.

Basically, in these questions, when you are looking at a regulation, the first thing you want to do is see whether there appears to be a market failure. If there is a market failure, you want to target your policies or your regulations very, very clearly at that problem, and make sure that you at least expect that the net benefits would exceed the costs.

In this market so far, given this huge amount of

investment, the increasing speeds, prices that continue to come down, it is hard to see where there is a market failure.

The key to going forward is to ensure that all these firms face robust competition.

Thank you.

MR. SCHMIDT: Thank you, Scott.

QUESTION AND ANSWER SESSION

MR. SCHMIDT: I think we have some written questions that we have asked you to pass up to the front here. I am going to ask that the questions be written, and we are not going to recognize anybody from the audience, just as a courtesy to those who have taken the time to write down their questions.

Let me start while we are gathering those from the audience with just a quick question for each of the panelists. Michael, starting back with you.

Would net neutrality regulations have any unique effects in your view on the provision of wireless broadband service?

MR. ALTSCHUL: We think they would have unique effects and they would be negative effects. The whole nature of a neutral sort of a common carrier system is really inconsistent with the way consumers are choosing their wireless broadband services today.

The examples I mentioned and others as well, there

are multiple facilities based broadband networks. There are multiple MVNOs that offer a wide range of specialized content, unique content, and specialized devices and handsets that are differentiated and allow them to focus on meeting the needs of very specific segments of the market.

Instead of making everybody drive a Chevrolet, we have Cadillacs and Volkswagens, to use an old example.

We also have a much wider range of devices, screen sizes, operating systems, keyboards, all that sort of thing, which requires customization of content for applications to run.

Many of you will have downloaded Google maps and perhaps Google Gmail, regardless of what your wireless carrier is, it can be done by the applications developer to make the user experience the same over all platforms. It also can be done through aggregators.

We also have and I have on my Blackberry Pearl, a choice of open Internet web browsers. There hasn't been any lack of choices, any market failure, and with regulation always comes consequences.

MR. SCHMIDT: Harold, let me turn one over to you. In your view, how does media consolidation affect the net neutrality issue?

MR. FELD: See, now this is, of course, problematic, because I'd love to respond to this one, but I

should actually answer the question that was asked, so I'll try to do both.

I recognize we have limited time and we can't have the fun debate that we'd love to have if we were doing this in a bar.

(Laughter.)

MR. FELD: The media consolidation issue goes into one of the factors that I tried to highlight earlier, which is very much about you can't just segment out a narrow bit of the market, and you have to look at all of the interrelated factors that are impacting the negotiations among these companies, what's going on among them, not just in terms of where the subsidies are, because I will tell you that cable is a great example.

They are able to raise their rates every year, despite having the most profitable -- every year, their per subscriber numbers go up, and they can still raise their rates. I may have skipped a few days of Econ 101, but that doesn't sound to me like they live in a competitive video market.

That level of consolidation helps them to subsidize other things like their broadband competition. That is one factor that needs to be considered, but there are two other things about the media consolidation issues that are important here.

One is that people are looking to broadband, and again, this comes from the touchy-feely First Amendment, civic engagement guys, not from the econ market failure world, but a lot of people are excited and interested about broadband because of its potential to allow real communication with each other.

If you look at the Pew study, the Pew Project on Internet American Life, on the 2006 election, you will see that particularly where people have broadband in their homes, that really affects the way they behave. That is not something that is dealt with as a means of provider incentives, and it is something that is severely impacted if we allow the carriers to tier and replicate the mainstream media environment, which so drives up the cost of political advertising and direct contact with one another, in this broadband environment that is being driven, because people see it as an antidote to that sort of consolidation.

Finally, there is one other point about media consolidation here which is significant to make, which is the level of huge deals that becomes necessary in order to attract the attention of the larger carriers.

Absolutely right. There are these differentiated deals being made all the time. One per customer, which I'm glad they think is enough for me to have.

Cingular makes a deal with MySpace and in no small

part because Rupert Murdoch is a big fish and can get their attention, and can cut a deal for MySpace.

I happen to use a social networking site called LiveJournal, which is a much smaller open source shop. They are never going to be able to get the same kind of deal.

That is in no small part because when Cingular is negotiating with Rupert Murdoch, it's not just because they are negotiating for MySpace, they are also talking about access to video content and all these other things.

To just ignore all these external factors and pretend that we can segment this without any regard to the rest of the media environment is going to produce very bad policy results and ignore evidence of market failures.

MR. SCHMIDT: Let me try to switch over to some of the questions that we received from our audience, to make sure we cover as many of those as possible.

Some of these are not directed at a particular person. I will try to spread them out a little bit.

Christopher, maybe if you could take a shot at this time. Why can't consumers get cheap, super high speed broadband from Verizon, EarthLink or other companies like Japanese consumers can? What is the problem? What is taking so long to deliver super fast access?

MR. PUTALA: I think one of the important policy deals struck in the past at the FCC is the new wires/new

rules, old wires/old rules concept. Some would argue that the new wires/new rules allowed greater incentives for investment in fiber. All well and good. It might have happened anyway, and this was just the regulatory frosting. It seems to me that is sort of a decision that is water over the dam.

The crucial thing that I try to focus on is holding to the old wires/old rules. In essence, EarthLink, as other companies, are in the process of making their own investments in technologies that you put into the central office, that still require accessed unbundled loops from the central office back to the home.

With this new electronics, we can in fact, using old wires, bring wicked fast broadband to consumers. We are rolling this out now in 11 cities around the country. We believe that with this new electronics, DSL 2+, that we can offer a DSL service that's up to eight megabits, a significant fast product.

This is the kinds of combination of regulatory scheme and investment plans that have worked in Europe and Japan.

This entire panel has talked about more competition is better. We differed about how much competition is there, but the entire panel and many panels yesterday, discussed that more competition is better.

It seems to me that the last thing we could do as we try to advance this debate forward is go back on the old wires/old rules deal, try to unscramble that egg, and in effect, limit the ability of competitors to put more wicked fast broadband options out there for consumers.

MR. SCHMIDT: John, you did receive a couple of specific questions. What will net neutrality rules stop Verizon from doing? In other words, how will those rules limit Verizon's incentive to invest?

MR. THORNE: There are so many flavors of proposed network neutrality rules that this would be a long answer to go through even a few of them.

Let me give you an example. Suppose Verizon and Johns Hopkins University wanted to roll out a medical product that required some network upgrades. It runs on the basic FIOS, fiber platform, connects people who have FIOS to the University and some of the medical facilities, and allows new medical technologies to proceed without bringing the people back and forth to the hospital and making them wait in the waiting room for long periods.

To make that work, Johns Hopkins might be willing and interested in helping to fund the technology. Verizon, for its part, would be very eager to engage in a cooperative venture. We would strike a deal to get this started. We would install additional infrastructure and Johns Hopkins

would install stuff on its part, and it might pay for part of this, or maybe there would be a joint grant that helps to pay for it.

Some of the flavors of net neutrality proposals would say oh, no, you can't do that, only consumers may pay for this and not until you have done it for all consumers, may any consumer have the benefit of an improved service.

Again, I have trouble. You have to start with a view of what is net neutrality require and then what might it inhibit.

It is certainly true that when telephone companies were strained in the pre-1996 Act period, you saw a lot less investment, a lot less development of the fast infrastructure.

Cable companies, when they were afraid of whatever they dedicated to broadband access, they were afraid it was going to be subjected to similar rules. There had been a decision in the Ninth Circuit in the Portland case that said maybe when cable dedicates part of its capacity to broadband, that it would be seized with common carrier like obligations. That seemed to deter cable investment.

You lift the restrictions and you see people investing in this space. If you want faster service in more places, and I think we all do, then net neutrality is just the wrong way to go.

MR. SCHMIDT: Scott, one from the audience for you. Where do you stand on designating white spaces in TV band as unlicensed?

MR. WALLSTEN: I haven't thought a lot about the white spaces' issue in particular. In general, I believe that licensed uses are better. Companies seem to be much more willing to invest when they purchase a license and they know they can use that spectrum.

That's an interesting question. I don't want to say anything about white space in particular, but in general, I think the evidence shows the huge value of licensed spectrum.

I would like to take this chance to talk about one of the uses of Wi-Fi, which is unlicensed spectrum, on the muni Wi-Fi question, just to take a different controversial one.

It seems to have become different than what people thought it would be a couple of years ago. It has turned into a business model, as we see now. EarthLink, for example, and Google, trying to do this.

One thing that I wonder with this is if we are going to do this, why would you grant a license -- why would you allow only one company to do this? Why would you allow only one company to have access to the telephone poles or whatever it is that you need?

Competition is good. I don't know why you would want to create or allow only one firm to operate in this space now.

MR. PUTALA: If I could add a comment on that. EarthLink is in the process of going to cities around the country and partnering them to build Wi-Fi clouds to cover entire municipalities. We then offer a variety of services within that, some free tiers, as well as some paid tiers.

I will note that in many of these cities it is in fact not an exclusive deal. We have an arrangement that if we build up the entire city, you know, we get to do it, but this does not stop another provider from coming in and also building out. I'll note that for one.

The other important thing that EarthLink has committed to as we talk the talk and walk the walk is that we have committed to an open access wholesale market.

We are committed to offering to as many local ISPs, to AOL, to anyone else who wants to sell capacity on our Wi-Fi networks, the ability to get the same non-discriminatory, very reasonable wholesale pricing, so they can make an offering. They can go out to consumers, use their creativity to bring customers to our network.

I think that sort of is the penultimate form of net neutrality, to have a robust wholesale market that you make your network available to, and that is what EarthLink is

executing today.

MR. SCHMIDT: Harold, let me ask you a specific one that came from the audience, but then at the end, I think you indicated an interest in maybe responding to one or two of the comments the other panelists have made. Let me give you an opportunity to do that as you please.

The question from the audience is many panelists have argued that two wire line broadband providers plus four wireless providers offer any inadequate choice and should be regulated under a net neutrality rubric, but there is practically no U.S. city that has more than two daily newspapers, and most have fewer.

Why shouldn't newspapers be subject to similar regulations?

MR. FELD: Let me take this, since this is what my slide show was somewhat about. I wish it were this easy. I wish we could just compare different things together and say newspapers are like the Internet and we can ignore all these other factors. It's not.

All of the side shows that we are having about newspapers and search engines and this and that, are all frankly side shows.

I am not terribly happy with all of the information that I've got to make a decision. It's just in balancing out all of the factors, including frankly, something we have not

talked about much, which is the danger of regulating too late, that there is billions of dollars in investment, explicitly into this technology to differentiate, as we saw when we tried to re-regulate cable in 1992 to cure the market failure, there was not a lot that we could really do other than tweak the edges.

You can't just say oh, well, six, that sounds like a good number, let's see how this is going to work out. You can't ignore the fact that wireless is different from what you got residentially in your home. It's at different speeds. It works in different ways.

The reason why a lot of people get both is because they like the mobility of wireless and are willing to live with the lack of certain access and certain functionalities in wireless for the mobility stuff that they like, but they also really want the existing openness in the wire line world so they also subscribe at home, especially if they care about things like going upstream, not just downstream, which is another one of these things that we haven't talked about.

I'm about to switch, just to take my own personal example, that will illustrate switching costs and a few things, my wife so does not want to have to change her e-mail address that we have stuck with really bad DSL connection, but will do it when FIOS is deployed in our neighborhood, because speed is really important, and explicitly upstream

speed.

One of our big uses right now for video is not to do tier to tier downloading of movies, but to send my mother-in-law with MS and my mother with Parkinson's video clips of our son.

The fact that it takes forever to upload those means that I'm very reluctant to make videos that are more than a minute or two, in order to send them, because it takes forever.

I'm glad that you think that you're offering me enough on here that I should consider that to be equivalent. I'm glad that you all think that offering asymmetric products is good enough for me to want to do that, but frankly, I'm sitting here, I can't vote with my feet on the right product because there is no right product out there.

While I'm sure that doesn't look like a market failure because I'm actually buying DSL, you know, I'm kind of stuck. I'd like other things. I'm not getting them. Nobody else can provide them because of all of these other market factors and all of these other things that figure out, including the need to license Federal spectrum, access to these lines, all of these other factors.

To pretend that this is the same thing as brands of soup or cereal or even unrelated newspaper issues, where frankly we care a great deal about who owns what in the

newspaper world and how that impacts our democracy, is at best to miss the point and at worse, to come up with incredibly bad policies based on deliberate and willful blindness.

AUDIENCE PARTICIPANT: (Applauding.)

MR. WALLSTEN: Can I just ask you a follow up question? All these things, of course, take money, and lots of investment. Even you said investment incentives matter.

MR. FELD: Yes.

MR. WALLSTEN: With all the investment that is going on now, where is all the extra money going to come from? Who is going to spend it? Who would you like to spend more? Who is not investing --

MR. FELD: Let me answer that. I'd love to answer that. Thank you very much. That is a great question.

Where is all the extra money going to come from to do all this stuff? We all know, we live in a world where this takes money; right?

There are a couple of different answers to this question. One is that it turns out there is a lot that can be done to provide really good broadband, especially at the residential level, that doesn't take a lot of money.

Some of it has to do with unlicensed spectrum, of which I am a huge fan, and what is going on under the surface at the community wireless level, not just municipal, but

where you have individuals who are coming in and unwiring neighborhoods on a volunteer basis, where you have these project non-profits coming in and doing that, where people are coming in and putting in 45 megabit per second symmetric dirt cheap or free.

There are costs to that on another level because -- I'm not saying that is the ultimate answer because there are problems in that deployment model, too.

I'm just saying if you only focus on producer models and you go back to this notion of oh, well, we have to have companies to invest in this because that's the only way that this stuff gets done, I say hogwash because I see it happening at other levels, and maybe it will not ramp up ultimately, but I'd sure like to give it a chance to do that.

The other option, of course, is always in other forms of incentive. You know, this is universal service, which nobody wants to get away from, but the plain fact is one of the reasons why we have an USF and one of the things we have always hoped to do with that is to say okay, fine, we recognize that regulation is going to reduce producer incentive at some level, so as a society, we will make up for it because we care about the people in fly over country, the Native Americans, the people in those neighborhoods that you don't want to serve, and as a country, we care about that, and the decision to do that has impacts and does not have

impacts.

Then I want to flip the question on its head. It's basic Econ 101, and again, you can tell me if I was nodding off that day. It seems to me it's basic Econ 101 that producer incentives work when the incentive is actually aligned with the revenue stream, that it is only worth it to invest in delivery of more speed where that is the direct payoff.

When we are talking about things like differentiation, you have in fact created a counter-incentive. There is an incentive to maintain scarcity because I will sell that scarcity. We see this all the time.

This is how political advertising works on TV. Advertising time is scarce. I can charge people who desperately want to communicate through that channel an awful lot of money. As elections and other things come around, I raise the price because I know those guys have to buy the advertising in order to reach people.

That has a collateral effect. That really means we end up with a particular sort of electoral system that puts a great emphasis on the ability to raise money, and all of the collateral effects that entails.

That is not in economic terms a market failure. I do argue that it is a societal failure, and as a broadband issue, particularly where we are looking at this as an

antidote to this kind of stuff, we need to be enormously concerned and be prepared to make a tradeoff that maybe Verizon will be less likely to invest in certain areas in exchange for maintaining a vibrant and healthy democracy.

But that's just me.

MR. SCHMIDT: Let me combine a couple of questions, both of which came from the audience, and then ask any of the panelists who would like to jump in and give a shot at a response to do so.

The first question is is the net different from IPTV? The second one is, is broadband a single product market or are there multiple product markets?

Does anyone want to take a shot?

MR. FELD: I just had a long one!

MR. WALLSTEN: I'm not sure if the broadband market is a single market or a cluster of markets. I'm pretty sure that if you tried to define it today, a year from now it would look very different.

When the FCC defined "advanced telecommunications capabilities," their jargon for broadband, they said 200 kilobits per second was the dividing line.

I think if you asked today, people would say 200 kilobits per second is kind of slow, and you want something more like 10 megabits per second.

If that is what it is today, then tomorrow, it's

going to be faster. The speeds are going to increase and the capabilities are going to change.

There was a regime put in place first by the FCC and then by a Stanford law professor in 1982, Bill Baxter, that tried to codify what was basic telephone service as of circa 1980/1982.

They drew a line and said these kinds of connections would be what you called telephone service, and the Bell system said what if you're not there and you can't answer the phone, can the phone system take a message for you.

Judge Green and the FCC said no. If you keep the phone company out of taking a message, 1,000 flowers will bloom. Community networks. All sorts of wonderful things will take messages and instead you will have more competition and it will be a better world.

The better world was $40 a month. Only doctors could afford those sorts of answering services.

Finally, in 1986, a few years later, the restriction on taking a message when you didn't answer the phone, when that restriction was lifted, it was available then cheap, for a couple of bucks a month, and everybody bought it.

It was a great thing and it held the cost of telephone service down because it was another thing telephone

companies could sell, and it was a lot cheaper, and people were able to soak it up.

In terms of features or speed or however you define this market, it is going to change constantly. We have had enough experience now in telecommunications to know better than to try to lock in place today's technology.

Instead, you should be encouraging the next generation of technology, and you do that by letting lots of people try lots of things without restrictions.

MR. SCHMIDT: Anyone else want to give that a shot?

MR. ALTSCHUL: Just to amplify that, it is sort of a false choice. We are seeing, and what this panel has been discussing, a lot of different approaches, a lot of public, public/private, private enterprises going out and deploying broadband, in all flavors, speeds, capabilities, and those that succeed are going to succeed precisely because they come closest to meeting consumers' needs for the services.

That's the coop based community networks, they are being built now. There is spectrum available because it's unlicensed, it's available throughout the country. If it's cable, if it's telco, if it's wireless, the most successful technology and enterprise succeeds.

MR. WALLSTEN: I just want to say something else. I think that's an excellent question. Maybe we should even have started off with that, what exactly is this market and

how do you define it.

I'm sure this is something that the FTC and the DOJ and the FCC are going to be debating, not among themselves, but for years.

Right now, there are lots of different parts of the market that might matter for different types of products, depending on what it is you are talking about.

I don't think it has any particular easy answer. You might have somebody in the future who wants to offer one service over broadband, and then are they called part of the broadband market. I don't know.

I just want to say it's a good question. I think the diversity of opinions on what exactly is this market and what's available to consumers is a good thing right now. People should have choices.

MR. FELD: Let me tackle the first part of the question, because it will lead into the rest of that, which is on the question of is IPTV different than the Internet?

Who knows. In no small part because these terms have different meanings and again, in no small part because of Federal regulation.

It's not only net neutrality advocates or whoever who are accused of wanting things two ways or whatever. The fact is that the telco's understandably would like IPTV to be an unregulated information service for certain purposes,

including not having to get local franchised, and they have arguments over there, and they would also like it to be a cable service for purposes of getting access to programming.

God knows I understand that. They are not in the business of being consistent or protecting fundamental principles of law, economics or anything. They are out there trying to make money, and they have good arguments with both, which again boils it down to me that some of these questions start with the wrong premise.

I hope people will agree, yes, the market definition question is critical. It is murky. It is unclear, the nature of the markets or the related markets, and the question is what do we do now when we have to make a decision not merely in the absence of perfect data, but in the absence of critical data.

Here is where you get to your evaluations. Those who think that regulation is inherently a bad thing and should only be done where it is necessary will tell you that the best thing to do is to do no harm and not regulate.

Those of us who perceive that there are things about the current system that are extremely at risk in the absence of regulation given the current environment, and which cannot be recovered once they are gone, and therefore fear regulation coming in too late argue the opposite.

It's very easy to go from a non-discriminatory

system to a discriminatory system. If it turns out five years from now that was the wrong choice, you will lift the regulation and you let people go play.

By contrast, once the discrimination starts and gets into the system, once that becomes the acknowledged reality, once there are billions of dollars in investment, in particular structures, history tells us that it is impossible to roll it back.

Again, my argument is, you know, it's funny, I don't think a lot of us are disagreeing on some of the fundamentals, I think a lot of us are disagreeing on both the lens to view this and on what we should do with our uncertainty.

MR. SCHMIDT: Does anyone else want to jump in on that one?

MR. WALLSTEN: I'll add one more point. In talking about these markets, one thing that people haven't really mentioned yet is the multi-sided nature of this market, that there are content providers and there are infrastructure providers, then there is also a backbone and so on.

Each side of the market affects the other. Each side needs the other. The thing that we know about two-sided markets is that pricing isn't always the same on both sides. It's not optimal how these things should be priced.

Consider the classic example, credit cards, where

you have to have consumers and you have to have merchants, but you're not going to charge them all the same things. You have to induce one to participate in order to get the other.

That complicates any analysis as well, because the market, even as complicated as it is to define, as we have been saying, it's even more complicated because whatever you do on one side of the market is going to affect the other.

MR. FELD: I absolutely agree. Here is again what I think we should favor network neutrality rather than disfavor it because to take the two-sided market example and the example I had earlier from the mobile phone, Cingular striking the deal with MySpace, in an universe where each carrier will strike one deal, or maybe two deals, or offer one of its own services, that is possibly five, possibly ten providers on the two-sided market side.

It's not a market failure. There was a negotiation. Certain guys won in that market. Certain guys lost in that market.

On the other hand, right now, we have thousands of these choices. Thousands of possible social networking sites. All of these things made possible by the fact that they do not have to go through those negotiations, because of the environment that exists now.

I see the danger of losing that as something extremely important and is not covered by models of economic

efficiency or definitions of market failure.

MR. WALLSTEN: Let me just follow up quickly. Actually, I believe a two-sided market issue points to a reason to not impose network neutrality.

This is not the point of this panel. Network neutrality proponents assume that the current set up we have right now is optimal for innovation. That it's optimal for creating innovation on the contents side and that innovation on the infrastructure side basically doesn't matter or they will think of something to make sure there are incentives for investment, and we don't really know what.

In reality, we don't know what the optimal set up is. We just don't know. Anybody who says they know what the optimal pricing structure is is wrong, because we don't know it.

There may be other systems that promote other types of innovation. We don't know what types of products haven't emerged because companies can't set up particular links to particular places.

What we have is one model. There are many, many others. To say that the one we have is optimal is not based on any particular analysis.

MR. FELD: First of all, there are analyses. One could disagree with them. I do feel the urge to say one, I personally think the question of optimal means to maximize

which sorts of consumer welfare and which sorts of innovation, and absolutely true, you will get certain types of innovation will appear in a market that allows the network provider to do these kinds of negotiations that would not appear otherwise.

One of the points that Jon made and Bill Lehr made yesterday that was very critical was it's not about pretending that you could capture all the benefits under one regime, or all the harms under another regime.

It is a question about balancing. It is a question about where are we maximizing the values that we care about. That's why I keep coming back to values, not just markets.

I can say that something does introduce a certain amount of economic inefficiency and it is still extraordinarily valuable for the contribution that it gives to us as a society, as a democracy, as a people who all come together and work together and have access to each other in a very real and fundamental way, that introduces economic inefficiency.

I would argue that is something we should be willing to consider.

MR. THORNE: If I could jump in.

MR. FELD: One last sentence. My problem is not that we might ultimately reject that as saying well, I don't think the benefits are necessarily worth it, but the problem

is that the framework that we are putting this in right now prevents that critical conversation.

MR. THORNE: I just want to quickly make clear that the specialized arrangements that say MySpace may have with Helio or with Cingular, in no way prevents their users from getting to any website in any social networking site they wish.

I'll be happy to wager our lunch, Harold. I'll buy you lunch if you can't get to your preferred social networking site using my Cingular device. You can.

There is no harm when you can go anywhere you want using your wireless device.

It seems like we have two very different problems, and it would be helpful to distinguish the two. One is the question of do content and application providers have trouble reaching consumers through broadband now or broadband to be built.

I don't hear any of that. I think it's just an irrefutable fact that there is no broadband provider that has power, because they don't connect enough, compared to the scope of what the content providers are trying to reach.

On the other hand, the Feld family needs faster access. The Feld family wants fast Internet access. Verizon wants to supply that. EarthLink wants to supply that. There are a bunch of other people who want to supply that.

If you impose regulations designed to solve a problem upstream that doesn't exist and we are not talking about, you're going to do something not good for the Feld family. You're going to deter people from building to the Felds, and then I think you should just let us loose.

MR. PUTALA: One of the problems with that, John, is that Verizon is in fact seeking to get out of the unbundling rules which allow another competitor to add its own electronics, its own new electronics, to bring more competition in the higher speed space using the old infrastructure.

I hope you go back and take a hard look at your petition, recognize your words in favor of competition. You spoke of the trajectory of competition. This is a way that we can move forward.

MR. THORNE: Chris, you're confusing things. I am talking about building multiple networks so the Felds have choices. You're talking about we all want to share Verizon's network so the Felds just get one network with different name plates on it.

MR. PUTALA: That's not true.

MR. THORNE: You have a separate network you're rolling out through the cities using unlicensed spectrum. That's a good second network. I encourage you to work on that.

MR. PUTALA: Wi-Fi networks are able to do about a meg symmetrical up and down. It is not just simply re-branding or re-selling your Verizon networks. What in fact it is doing is taking the infrastructure that was built under a monopoly structure, old wires/old rules, the old copper loop built under protected pricing, guaranteed return on investment, that old copper loop from the home to the central office, and then we go and put in new electronics, new DSL technology. It is not your DSL technology.

You have restricted DSL technology, go no faster than 3.0. We want to pull out the latest technology that is DSL, up to 8.0, and then take it from the central office back to the cloud.

That is not simply re-selling any service that Verizon is putting on the marketplace. That is simply taking advantage of the adage that you all came up with of old wires/old rules.

MR. WALLSTEN: I'd like to say one more thing just to respond to what Harold said. By the way, whoever asked that question, that was great.

Harold said that he wants to maximize something different. This is a key point. One thing you hear people say all the time, not Harold, one thing you hear people say all the time is they want to maximize X and Y. I want to maximize this and that. You can't. If those two things are

related, you can maximize one thing subject to certain constraints, and that is going to reduce these other things.

What Harold said is he wants to maximize something else and recognizes there may be a cost and the cost is inefficiency. I think I'm basically saying that right.

What I'd like to know exactly is, you know, what exactly is it that you want to maximize, and what is that cost? When you look at the presentation that he gave, what he wants is blazing fast Internet for everybody, and yet he wants to maximize something else.

It sounds to me like he actually wants to maximize multiple things and you cannot do it.

MR. SCHMIDT: Can you respond in 30 seconds? We need to wrap this session up.

MR. FELD: It's tough to respond to that in 30 seconds. I won't try. I'll just say for this panel, my point is my concern is about how the debate has progressed.

I would like to see the debate pushed beyond maximizing producer efficiencies or two-sided markets, and that it must encompass other things, such as diversity of voices, which is in Section 257 as one of our national policies and which has been the bedrock of communications policy in this country for 70 years.

MR. SCHMIDT: Okay. With that, I think that is probably the last word we have time for from the panelists.

I just think we can all agree that having the kind of robust discussion from experts in the field as we have heard today is extraordinarily valuable for all of us.

Thank you.

(Applause.)

(A brief break was taken.)

CONSUMER PROTECTION ISSUES

MS. RICHARDS: Good afternoon. Thank you, everyone, for braving the weather to get here.

This panel will focus on consumer protection. I like to think of it as the reason that we are holding the hearings.

I analyze the consumer protection issues to throwing a party. If you throw one, no one comes. Why bother. Well, we have a party in full swing.

Most of the country has gotten an invitation from at least a couple of providers, and we have millions of people already there, but some of the issues, and I think those we are going to talk about today, are what is the price to get in the door, and are there charges once you get inside.

Is there a fee for carving the roast beef at the beef station. What's on the name tag that you wear. Is it "My name is Mary Beth" or more. Is someone taking down that information on the tag and going to provide it to another

party planner that you know about or don't know about.

How long is it going to take you to get through the room. Does the answer to that depend on how much you are carrying and might you be denied access to the room based on what you do have.

We have a great panel today to talk about the consumer protection issues. We are going to start and just kind of go down the row with introductory statements.

Tim Muris is joining us by telephone. I'll do brief introductions, more fuller introductions or bio's are in your packets.

We will start with Phil Weiser. Phil is a Professor at the University of Colorado where he has a joint appointment with the School of Law and the Interdisciplinary Telecommunications Program.

Phil founded and continues to serve as Executive Director of the Silicon Flat Iron Telecommunications Program. They hold terrific regular seminars on issues that talk about the intersection of information technology business and law.

He lectures and writes widely on these issues, and previously served in the Anti-Trust Division of the Department of Justice.

Next is Dan Brenner. Dan is Senior Vice President for Law and Regulatory Policy at the National Cable & Telecommunications Association.

I first met Dan when he was Senior Legal Advisor to Chairman Mark Fowler at the FCC in the 1980s. He also has served as the Director of Communications Law Program at UCLA Law School, and was a Senior Fellow at the Annenberg Washington Program.

Jeannine Kenney. Jeannine is the Senior Policy Analyst for Consumers Union, publisher of Consumer Reports, where she covers telecommunications and media policy for the organization, representing consumers on Capitol Hill and before Federal agencies.

Prior to joining Consumers Union, she served as Vice President for Public Affairs and Member Services at the National Cooperative Business Association, a membership organization for consumer owned cooperatives.

She also worked on the Hill as a staffer.

Ron Yokubaitis, in 1994, along with his wife and son, founded Texas.net, the first ISP in San Antonio, and one of the first 50 ISPs in America, renamed Data Foundry, Inc. in 2003. The company is one of the largest operators of Internet data centers in Texas.

As a global provider of managed services, Data Foundry maintains and monitors a scaleable redundant and available network infrastructure.

Ron practiced law in Houston and Austin after serving in the Peace Corps in Brazil.

Finally, Tim Muris is the Foundation Professor at George Mason University School of Law. He has extensive experience including in anti-trust, consumer protection, privacy regulation, and strategic counseling.

Tim has served in numerous capacities at the FTC, including chairman from 2001 to 2004. In fact, Tim probably could have single handedly moderated each of the panels in this two day session based on his prior experience and former job.

He's currently of counsel at O'Melveny and Myers and co-chairs the firm's anti-trust competition practice.

With that, we will start with Phil.

PRESENTATION OF PHILIP J. WEISER, UNIVERSITY OF COLORADO

MR. WEISER: Thanks so much. It is great to be here, and it's very important that the Federal Trade Commission has embarked on these hearings in a new frontier for broadband's regulation.

In a great Yiddish tradition, I want to say a few words before I speak.

(Laughter.)

MR. WEISER: I'll try to follow Bill Kovacic, master of the metaphors. He came and spoke at our recent conference. It was a tour de force on different metaphors, all used effectively.

The party metaphors, not one I came prepared for,

but the best I can say is part of the telecom policy party wars do leave many of us with a hangover type feeling, and I think unfortunately the FTC has gotten a little sense of some of those wars, although I think what is valuable about this forum is it provides a chance for sober analysis.

It's difficult to do sober analysis getting off of a hangover, but if the Commission can take the time, and I know they can, they can invest in some valuable analysis, and I'll mention a few words on that, but I really do think there is an opportunity here, and I'm very glad you are moving forward on it.

The opportunities that I'm going to talk about are going to be twofold. The quick one will be the planting trees. One comment that Commissioner Kovacic made is in Washington, there's a focus on picking the low hanging fruit, which are some quicker wins.

I think there is some very important quick wins here, which I'll talk about. There is also broader questions about how to invest to build new trees, to help develop this area.

Before I get to the low hanging fruit and the planting trees, I want to talk a minute or two about something Harold Feld said, which is this idea of the free speech and egalitarian Internet.

I just think the Commission should look at that and

note how challenging those aspirations are in the following sense. The Internet is not today and will not be egalitarian. It's very important to start from that premise.

There are very well heeled companies who have the ability to pay for service level agreements that ensure quality of service that pay for services that ensure quicker delivery of their content.

If I start a company in my garage, I can't do that. That is okay, because in most sectors in our economy, those who are well heeled have advantages, but those who are starting companies in their garage have other advantages.

What is critical about this issue is that we need to make sure there is always room for people starting new types of applications from their garage.

However, they don't need to be on an equal playing field. They can't be and they shouldn't be for some of the reasons John Thorne mentioned. You wouldn't want to stop enhanced sources that people can buy who have the money just because there are some people who might not have the money to buy them.

That is a very challenging idea about the egalitarian Internet. There are some, I think, maybe moments in time when the Internet was close to that. Right now, the Internet is an incredibly important part of our commercial infrastructure and is and won't be that. I just want to

start with that by way of a little background.

In terms of the low hanging fruit, I want to suggest that there is a lot of laboring on the competition policy issues, the price discrimination concerns, issues around rent extraction and two-sided markets are not the sort of discourse you will hear in Congress.

By bringing some of those analytical tools to bear, this Commission can do a great service, although I don't think it is necessarily going to solve those issues.

The consumer protection issues, however, I do believe can be solved and addressed very effectively, and that's where the low hanging fruit lies. Let me spend a couple of minutes on that.

First is there is a jurisdictional Neverland today because of the questions around the classification. In particular, consumer protection in telecom was largely the bailiwick of state public utility commissions. We have Phil Jones in the audience from the great State of Washington.

Right now, Commissioner Jones doesn't necessarily know what he could or should be doing on broadband because it appears to be subject to only Federal regulatory oversight.

However, the FCC has never been active or all that effective in consumer protection. It is generally left to the states. Thus, there is a critical role for the Federal Trade Commission to play in effect the counterpart to what

the states used to do as to broadband. How they should play that role is something I want to spend a few minutes on.

The first point is it is very important that consumers be given clear understandable explanations on the product they may purchase. Many providers today do just that. They have websites where they offer broadband usage policies.

There is a value to having that standardized, and I think some form of guidance, and it could be informal, like a speech or like a report from this investigation, can give providers a sense as to what they should explain.

Many people focus on the level of bandwidth or speed, although that's really just a starting point.

In explaining what your level of bandwidth is, it's important that you explain what the effective bandwidth is, not what the theoretical bandwidth is. Many people know that their advertised services might be up to two megabits, but they only ever could get two megabits at like 5:00 in the morning on a Sunday. That is not exactly fair advertising in the sense that consumers might have some expectation they would get that on some reasonable basis.

There needs to be some explanation as to what they are actually getting not merely on speed, but also on performance. The performance point would get to what can you do with it.

What type of applications would work, and that gets into some of the more technical issues alluded to previously, is there a lot of latency or is there a lot of jitter on the network. If so, that could undermine the ability to use voice over IP, for example. That's okay. There are some networks that might have that, but consumers need to know what the limitations are up front.

The other things consumers need to know is is there prioritization available. Prioritization would say yes, there might be latency and jitter as a default matter, but firms can pay for enhanced service, prioritized quality of service.

That's important because if I'm a consumer and I'm looking at an over the top voice over IP product, I know that some companies may have access to that prioritized service and may be able to overcome the latency that others might not.

That means I can complain to those companies, wait, why is your service not buying this higher quality service, or if they are not buying it, then I can switch away from them.

It also tells those application companies that there is an opportunity to buy prioritized service, so they are able to compete fairly as well.

Finally, there needs to be disclosure of network

management policies. Estimates suggest that maybe 50 to 60 percent of total Internet traffic is peer to peer video file sharing. That is probably about 90 percent on college campuses.

Every Internet provider needs to manage their network somehow so that people can get e-mails through or can use voice over IP over the top connections. Those are necessary for any provider.

However, they should be disclosed, so if I, for example, like Harold Feld, would like to share movies and those might be subject to these sorts of network management policies, I can look at who has better policies for what I want. That is part of, I think, a vibrant marketplace and should be part of any disclosure regime.

Let me get to a couple more points on the planting trees' front that I think will come from this. The first one is in addition to the basic disclosures, I think there is a valuable role the Commission can play as a little more of a kicker.

This is described in a paper with Rob Atkinson called "The Third Way on Network Neutrality." It's on the ITIF website.

The idea here is when consumers think they are getting broadband, they think they are getting best efforts, you can do whatever you want with it, broadband.

When a level of broadband is out there, I would suggest that level of broadband needs to be best efforts. There can and should be room for prioritized broadband above and beyond the best efforts made available, but our basic claim is that as a matter of giving consumers what they expect, it's vitally important that when a provider says I'm selling broadband, they be held to their requirement to sell best efforts broadband of some reasonable connectivity.

What makes this issue hard for the Federal Trade Commission is the FCC set the reasonable level of connectivity, as John Thorne mentioned, in 1998, at 200 kilobits per second. I think people laughed the first time that was mentioned, because it is laughable. Very few people would call that broadband today.

What should be done about enforcing a commitment to best efforts broadband of a reasonable amount of connectivity in the absence of that role being played by the FCC, puts the Commission in a little bit of a quandary, and I think there are ways they could come up with another reasonable level through surveys, consumer expectations and the like.

The best of all worlds would be if the FCC would be willing to re-visit what is clearly an anachronistic amount because after all, they are the expert agency on this.

That is the second major prong. I would say a third prong would be that there has to be eventually some

model of self regulation here. In other industries that have grown up, there are systems, for example, in advertising, like a national advertising review board, where they refer the worse cases to the Federal Trade Commission.

The FTC could be besieged with complaints and this could pose an institutional challenge. One area of investment of planting trees, if you will, is how to manage the challenges of the cases that could come in. Both consumers and applications providers are going to be concerned parties. Application providers, maybe the ones with a little bit more on the resource front.

They are both going to bring violations. That is a firm says my policy says X and then in practice they are doing Y. They will bring that to the attention of the FTC and over time, I think a more effective regime will be one where there is some self regulatory forum that can handle such matters in the first instance, again, referring the worse to the FTC.

Why does all this matter? The reason it matters is because in many markets, the type of robust disclosure and consumer awareness doesn't necessarily happen on its own.

In nutritional information, for example, or restaurant hygiene, the value of regulatory oversight actually brings more consumer awareness and more effective consumer choice, and has shown to actually increase output in

those markets.

My full testimony which I have posted will give you the citations on that.

It is worth knowing that this is a constructive role that will make the industry better off and the industry can rely on consumers knowing what they are getting, be more confident with what they are getting, and overall, being more satisfied as a result.

Finally, consumers can play a role that Chairman Majoras talked about, which is being their own best activist. One very healthy part of the Internet is consumers are activists about telling providers hey, I don't want this.

Chairman Majoras pointed to in her speech with connection to the Tech-ade hearings that Facebook rolled out some feature that was thought to be anti-privacy and they complained and Facebook changed their policies.

When you live in a world where policies are more notorious, open and known, people can complain about them. The problem is if those policies are less known, more opaque, it's harder to have that sort of dynamic take hold.

I would encourage the Commission to move forward in this area. There is a lot they can do. It is going to take some work. I think this hearing is the beginning of building the institutional confidence and capabilities.

It is going to require cooperation. There is a lot

to learn from the FCC, from state commissions. There is a vacuum here, and there is an opportunity, and I look forward to seeing the Commission move forward on this front.

Thank you.

MS. RICHARDS: Thank you. Dan?

PRESENTATION OF DAN BRENNER

NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION

MR. BRENNER: Thanks very much to everyone here for coming in. I think it is an important topic and one that I think is one that the Federal Trade Commission is right to take a look at.

Let me make several points about the cable broadband product. Many of you know this, but how did we get here? Well, cable invested more than $110 billion since 1996 in private risk capital for a number of reasons, to upgrade its network, but not the least of which was to roll out hybrid fiber coaxial networks that led to the broadband infrastructure we have today.

We were first to market residential service. You all know the story of how DSL followed cable in terms of residential service.

We validated what was a questionable business at the beginning. Could you have broadband in the home, and the answer is a resounding yes. Today, it's available to more than 94 percent of the United States, with speeds from five

to 15 megabits per second.

About 29 million residential cable customers at the end of 2006, so we are probably coming up on 30 million by now. There are almost 19 million DSL customers. That, too, gets close to 20 million. Nearly 50 million DSL and/or cable customers. That's a pretty good record for the United States, I think.

This raises in a product that's new and different and sometimes very complicated and sometimes very simple, regulatory questions.

What are the material terms of the relationship between the customer and the broadband provider? Pricing, purchase and installation, privacy, and I think what has been the focus of this panel, speed and what are the representations for speed, how can it be measured, can it be measured. Is there a way to do that in a meaningful way that is meaningful for the customer.

Most of the providers have links on their home pages directing subscribers to not only the subscription agreement that people tend to sign quickly when they are getting the service because they want to start it right away, but also to their acceptable use policy.

Going to Phil's point about disclosure, it's there. I don't know how many people on the panel or the audience have actually gone to the Web and looked up Comcast or Time

Warner Cable or Cablevision's acceptable use policies. They are all there in black and white. There is no mystery about what is and isn't permitted.

What you won't find in those agreements is typically a guarantee of speed. That's because not only has the speed changed all to the better and typically without an increase in price, it's one of the nice things -- one of the good stories about cable broadband, that we have increased speeds without increasing prices over the years, at least several of our companies have.

Because it is changing, and we will get into how you measure speed in a moment, it's not something that's actually in the user agreement.

There are some restrictions on user agreements. They are to be used for private residences, for non-commercial uses, to be used only by the signer. You are not supposed to buy one subscription and then use Wi-Fi to share with all your neighbors in the apartment building.

Those policies are out there. You are not supposed to use your computer as a server or as an e-mail junk mail server, sending millions of e-mails using your residential subscription. That is not what we are selling for residential customers, and they should talk to the cable company, and I'm sure the same is true for the DSL company, if they want a different kind of product.

Let's talk about pricing. Unlike I assume my friend, Mike Altschul here, I have to say pricing of cable broadband is a pretty simple affair. It's one price. For speed sometimes, they have tiered service. It's pay one price and generally speaking, it's all you can eat within the terms of the acceptable use policy.

That is a whole lot different than a typical wireless plan, or even some cable video plans, which are more complicated in terms of tiers and optional offerings.

Pricing is very straightforward in the broadband product, and I think the same is true for DSL. It's even better in some ways than the traditional telco pricing, where if you want class features like call waiting or call forwarding, those are add-on's. The bill gets a little bit more complicated.

Fortunately, pricing is not a complicated issue for the consumer.

Privacy. While the cable industry generally recognizes Section 631 as applicable to its cable service, although there have been some cases that raised questions about that, that's a very, very strong, perhaps the strongest privacy regime in any of the media today, in terms of disclosure to the customer whenever information is passed onto a third party.

Purchase and installation. Again, I think we have

really good news here, no market failure. We have a separation of equipment from service. You can buy your modem. You can buy it from hundreds of authorized manufacturers. Cable does not link equipment and service here, as some of you know from the FCC docket, this is a very complicated issue on the video side because we have not been able to achieve the retail marketplace that we had hoped for in terms of set top boxes.

Here in the cable modem world, the retail market is alive and striving. You can go down and buy your modem and that's the end of it, or you can rent it if you choose to from your cable company.

Let's talk about speed a little bit. Typically, the representations by cable, and I would imagine the same is true again for telephone companies and other broadband providers, is that it's claimed up to a certain amount.

In every one of the ads that I've looked at on the Web and in disclosure documents to the customer, it is always statements like "speeds will vary," and "it's up to a certain amount."

Anyone familiar with the Internet knows speeds can and will vary depending on the kind of download that you're doing and other things that are happening on the Net at a certain time, not the least of which is how many customers are on your node and are active at that time and what they

are downloading.

If you're downloading the front page of the Federal Trade Commission website, that is going to be at the very highest speed and very likely at the speed, the highest speed guaranteed, or even higher than your provider offers.

If you're downloading a movie with lots of bits over a fairly long period of time and there are others on the same node, that speed may vary. It may not be the same speed that you will get for a quick download of a single Web page of text.

How do you test for speed? Well, with regard to on line speed tests, there are ways for consumers to check speeds, but they are not always accurate. There are these speedometers, if you will, broadband speedometer websites that measure it.

They may not tell you as much as some consumers would like because they vary in terms of how they measure and you probably have to do many, many tests on the same website to get kind of an average speed, to get an adequate sample size. That is a challenge for actually measuring it.

Needless to say, there are many points between the key strokes of the customer and the download in which the speed can be affected.

Does the website that you're seeking a download from have Acama, where they have local server farms that make

the download faster. Are there other complications at the server where you're seeking it quite apart from any server farms that bring it closer.

We all know the famous story of downloading the Victoria Secret streaming video when so much demand was placed on it, nobody could get a download.

Are there other people on your node at the same time you are trying to download? All those things can affect the speed of the download.

It is almost impossible to do a real time diagnostic. Sometimes, you seek a website and you get a failed page response. You do it again and the page comes. We have all experienced that. That has probably nothing to do with speed and everything to do with other things in the Internet.

The customer solution there is to go back and try again, and when you refresh, you get it, rather than trying to analyze the speed.

The most important and overarching point, I think, from a regulatory standpoint, particularly given Chairman Majoras' speech on this, which I think is launching this very useful inquiry, is is there a market failure? Are customers routinely finding that the speeds promised are not being delivered to the effect that they are not getting the product they want?

Everything tells me that isn't the case. The ever increasing number of people who elect to go from dial up to broadband, this product is a desirable step up in service and quality.

The amount of time spent in the home using broadband. During the last four years, home broadband usage per person has risen 30 percent, from 25.5 hours per month to 33 hours per month.

All that, of course, requires investment by telco's, cable, wireless networks, because the greater usage obviously means greater demand on the network.

We have kept up because customers have found this product to be not what they had in mind or giving them speeds that were inadequate. I think customers would find they wouldn't be buying this.

There is obviously competition for some, lots of competition for broadband in some areas. The FCC has surveys that show sometimes more than a dozen broadband providers in some areas, if you add all the wireless providers in.

In any case, a lot of customers have at least two choices and maybe more with wireless.

By and large, I would argue that at this point, there is not a market failure due to the difficulty customers may have from time to time in establishing what their exact speed was on a particular download.

You might want to compare it to mile per gallon claims by companies like Honda. I know it's slightly different because those measurements are established by Honda. You know, Honda gives you an "up to" number of miles per gallon, and most customers of their vehicles, if they have problems with their cars, it is not because the cars aren't quite measuring up, they really do the job for most people who buy those cars that they expect, even if the number doesn't quite always match.

Is that a Federal Trade matter? I think to some degree, you have to ask are customers basically happy with this service and are there things that we can do to improve that in terms of explaining the product better.

I think it is incumbent upon all providers of broadband to communicate with customers who are having a problem or who do find something not working in their broadband service, and I think our companies are committed to doing that and to doing more of that as this product rolls out.

We are probably beyond the nascent period of broadband in this country, the early days of it, but we are still at a point where many, many homes don't have it, and we hope as a nation that all homes eventually have broadband at a price they can afford.

I would just say to conclude that while this is a

question that bears watching by the Trade Commission, we welcome that, there is just no market failure here.

Because of the increasing interest in broadband, we should allow networks that are providing it to continue to grow and expand and to avoid complicated monitoring or reporting requirements that I think would do nothing, going back to Phil's analysis, add more trees and then cut them down.

MS. RICHARDS: Thank you.

MR. WEISER: It's a good thing that Dan and I can see the forest from the trees.

MS. RICHARDS: I can say one example when people weren't able to access a website was yesterday at Ten of 2:00 when every Federal employee was trying to look at the OPM website to see if in fact we were closed for the day.

We will move to Jeannine.

PRESENTATION OF JEANNINE KENNEY, CONSUMERS UNION

MS. KENNEY: Thank you. Thanks to all of you who have braved the weather to come here today.

I'm going to take a slightly different tack here and hopefully it won't be one that is unexpected by our FTC's conference organizers.

I've made it pretty clear that I think the most important consumer protection issue in terms of the net neutrality to debate is the anti-competitive impacts, the

anti-consumer impacts of network discrimination.

I think these disclosure issues are important, but I don't think that's the issue here today. In fact, the elephant in the room is whether or not disclosure of prioritization practices is sufficient to remedy the harm.

I don't think there is any question that disclosure is an inadequate remedy and in fact doesn't even address the issues at stake.

I think the other major consumer issue here, and I'm not going to touch on it much, I hope Ron does, is privacy and the technology that broadband providers will use to facilitate tiering and network discrimination poses some substantial privacy issues.

Privacy is a top concern among consumers. It always polls number one in every survey that we do at Consumers Union. I don't think anyone has a full understanding of what sort of security and vulnerability issues are at stake with deep packet inspection technologies. No one wants to talk about it.

It's a complicated issue and stems far beyond what we can address here on this panel, and in fact, there are no privacy experts represented on this panel today, so my recommendation on that issue is that FTC take that up separately and give it some pretty serious concern.

First, why do I think the biggest consumer issues

are the anti-competitive impacts of network discrimination?

It's pretty clear. We have seen this kind of behavior in every other marketplace where telecommunications or media providers have network power. They use that market power to exclude rivals, to exclude competitors.

That's because in the broadband market, there is not competition. The notion that there are 12 broadband providers providing substitutable services in any market in this country is laughable, and the data show that.

The notion that if you disclose your prioritization practices, consumers will simply walk with their feet elsewhere, is pretty ridiculous, if you think about it.

If I don't have another alternative, where am I going to go? The notion that if consumers don't like the practices, they will complain to their provider, and the provider will change the practice, is also pretty suspect when you consider that 75 percent to 80 percent of the public would prefer to have a choice of cable channels.

Mr. Brenner's members refused to provide that choice. Why is that? Because consumers can't walk with their feet. There aren't substitutable services for that particular product market.

Our concern, from the consumers' standpoint, with network neutrality, is what happens to innovation? What happens to competitive services that consumers currently have

access to via the Internet that will be foreclosed in a non-neutral network world.

I think those implications are pretty significant.

Let's talk a little bit about consumer disclosure. FTC's own principles recognize that disclosure is not always an adequate remedy. It's advertising principles recognize that.

If you look at the harm of network discrimination as anti-competitive effects on on line service and content providers, then you have to look at this issue entirely differently.

What I'm going to recommend is that FTC take a look at its retail slotting allowances' report back in 2001, and if you substitute a few of the words in that report, you have the network neutrality debate. That report was a result of a process, much like we're going through here today, where I think there was an adequate consumer representation and adequate representation of all the stakeholders in the debate.

But the issue in that report was not disclosure. The issue of disclosure as to the anti-competitive impacts of slotting allowances in the retail grocery industry wasn't even mentioned.

The issue was the impact on smaller manufacturers and the access of alternatives to consumers.

In the broadband market, we simply don't have those alternatives.

I don't think the issues here are as clear in terms of the remedies as disclosure. I'm raising this issue as a significant one because I've been asked repeatedly what if we just disclose.

Let's talk just briefly, in the few minutes that I have remaining, about how consumers might react to that disclosure. Say they are really unhappy with the fact that their broadband provider prioritizes, and they want to switch.

Let's say they buy a bundled service and they got a packaged deal for that service, and if they drop one of those services, they are going to pay the full price for the other two. Are they going to switch because Amazon loads faster than Barnes and Noble? Or are they just going to buy the new Danielle Steele novel from Amazon.com, putting Barnes and Noble at a disadvantage?

Are they going to want to change their e-mail address simply because some services load faster than others? Probably not.

The point is that the abuses have to be pretty severe for a consumer to go through the hassle of switching their broadband provider, particularly in a bundled world, which is where the competition is at this point.

At the end of the day, it isn't realistic to expect that mere disclosure of discriminatory practices does anything to police the anti-competitive discriminatory effects of a non-neutral world.

I'm happy to address some of the other issues that the panelists have raised in terms of whether disclosure is even adequate now, and obviously, I don't think it is. I think it's incredibly unclear, and all you have to do is read one ad for bundled service in the Washington Post on any given day of the week.

We can get into those issues. That's not the issue here today. We have been talking about network neutrality for two days, and suddenly, we are going to have a discussion about broadband disclosure policies.

You can't have that discussion without recognizing that disclosure as a remedy to non-neutral anti-competitive harms is completely inadequate, and frankly, shouldn't be on the table.

MS. RICHARDS: Ron?

PRESENTATION OF RONALD B. YOKUBAITIS, DATA FOUNDRY

MR. YOKUBAITIS: Thank you. Could I step up to the podium?

MS. RICHARDS: Sure.

MR. YOKUBAITIS: Can everyone hear all right? Get a little closer? Good. I'm going to pull it down here. Good

afternoon, all. I'm glad to be here. Thank you to the FTC for putting this on and letting us all get our say. We have come from Texas, Austin, Texas, with Data Foundry.

We are a data center company. We can house the servers and adequately provision them to where they don't go down. We have plenty of capacity. We put multiple carriers in there to where you've got plenty of bandwidth and plenty of redundancy to where there is capacity.

We grew out of an Internet company. One of the ones you -- a lot have forgot about. We started out in dial up in San Antonio, Texas, as my wife said, who is one of my business partners, we got so early on the Internet, we got the name "Texas."

What we did was bring it when you didn't have it. There was no Internet. You couldn't get on the Internet prior because I tried to get on the Internet. We are talking about the open ended Internet, not this thing they call "broadband," which is a broadband private Internet protocol network, but it's not open. I'll touch on that later.

But this was the open Internet, go anywhere, do anything. Couldn't wait to get on it. Found out about it in 1976 from Stewart Brand's book "Cybernetics From Tiers Two."

I tried to get on in 1984. That's when I found out it's a closed deal. I'm a small business guy, pay taxes, create jobs, run a small business, support my family. I

couldn't get on. I wasn't a member of big Government, big education, university, military, or a big defense contractor. Because that's the way it grew up. It was a closed network. It wasn't open.

When did it get open? It got open right around 1993/1994. I will say 1994, because it was the NSF ran the backbone, non-profit. There was a router out in Palo Alto run by CIX, a commercial Internet exchange, which had a few members, Sprint was among them, BBN. If you were a member of CIX, of which they were, it had a pretty high entry level, you could route commercial traffic, very limited.

Well, I tried to get into CIX. It was $12,500 a year up front. Well, you know, we were founded with the down payment on our house. We deferred the house, rolled the $10,000, started the Internet company. I'm married to that kind of entrepreneurial lady, thank God.

So, $12,500 was more. I asked if we could make payments. No. Long story short, Sprint let us hide behind their IPs. We bought connectivity to Sprint and Sprint started promoting an IP network, and we opened up in October of 1994 on Sprint. Hey, it was people lined up to buy Internet. There was such a pent up demand. It went from there.

And there were quickly cropped up like mushrooms within the next year, two, three, dial up Internet providers.

We started pushing it out of the big city of San Antonio, Austin.

Sorry? Well, maybe I should have sat down. Why am I saying this? This is how the Internet grew. This is the open public Internet. It wasn't public. It was closed before that time. It really grew fast after that. Within three years, and I don't know where history ever comes that it is just broadband started with the cable companies. No, it didn't. It started with ISPs like us with DSL. I'll get to that.

What happened? What happened was in three years, 90 percent of this country was covered with dial up Internet and Internet providers, without the subsidies, without the promotion, without the national plan, basically without Wall Street.

What happened during that period, too, is we started broadband. How did we do it? You know the old burglar alarm, that you had a place of business and you'd get a telephone line over to the security company and it would ring there, mostly false alarms. Well, that was copper, straight copper.

You could put DSL equipment on that and it was tariffed, which is a word of art meaning the telephone companies asked the regulator a price they want and the regulator makes it and it sounds like the regulator made the

price. The telephone company made the price.

These prices were often under $10, maybe $13. You could get that line, put your own physical equipment, your own investment, and a number of small ISPs like us started doing that to move broadband because we were technical people. We could build and run servers through all that.

That is difficult, I must say, with all due respect to the cable companies. That is not their shtick.

What happened was as soon as the telephone companies found out we were doing it, withdrew the tariff. You couldn't do that any more.

I'll say between that time and when the cable companies started doing it in the late 1980s because Time Warner Road Runner started in Austin, so we got to see that. We got to see it up close. So, I could see that. And then the DSL came on.

That was open Internet. We didn't have access to it. We tried to get access under open access at the FCC. We are the ISP called Texas.net that sued the FCC to enforce its own order to have open access.

Well, it's kind of like the U.N. They have a resolution and don't enforce it. So, they dismissed our petition, didn't enforce their own order.

We may have a market failure but we got a regulatory failure. They can go down there and withdraw the

tariff. We also were moved out in the rural areas with Verizon, and I brought this up with Mr. Thorne and this gentleman here.

We moved out in the rural areas with dial up. We were doing that with remote call forwarding. As soon as Verizon started seeing what we were doing and serving these smaller towns out of the larger areas that didn't have any Internet, they quadrupled the price of the tariff, and we could no longer offer $20 a month all you can eat out here in these small communities that wanted it.

And this has been the -- so when you are trying to do it, and we put our own capital up to do this. This wasn't, and we didn't pay our shareholders 3.9 percent, 4 percent dividends like Verizon and Southwestern Bell do. We invested that money back up. We didn't ask to have that investment protected and our profits forever protected. We got a market.

Anyway, I wanted to put that, but I referred to broadband. We have a truth in packaging problem here. Because we've had this conflagration, this "broadband" term. When they say "broadband," they really don't mean broadband Internet. That's why when we had the example, last one, of well, we want to have Johns Hopkins and this and that, I don't have any problem with that. We'd do that, too. That is a circuit running IP private deal.

When you use the word "Internet," it is not this little private closed club that you prefer some and you don't. It's open. That's what the customer wants. They want access to it.

I think there ought to be some truth in packaging, some consumer fraud. It's been pushed together. I think intentionally pushed together to confuse the public. It's not the Internet. It's broadband.

Now there is a broadband Internet, but broadband IP private networks head on it.

I wanted to mention that. We also have this term "content." Where did this "content" come up? We just talked about packets and bits and all of a sudden "content."

We have the cable companies who are content providers. Google is a content provider now. Okay. Well, I would say that all the people looking at us on the Web today worldwide are content providers, too, that aren't brought into this two dimensional economic model the Ph.D.s and economics are talking about.

There is another one besides content and access. It is all of you all out there. All the kids that are swapping content. They don't care to go through the cable company. They don't care to show up on their radar. It's MySpace to something or other or just straight peer to peer.

In the Amsterdam Internet Exchange, I heard a

figure of 60 percent was peer to peer. I don't know that figure. I can know there are published figures on the Amsterdam Internet Exchange, which is very open, which is surpassing anything in the United States, that 19 percent of the traffic is Usenet traffic. You may not remember Usenet, but that was the open network before the Web and is still here and it's very broadband.

In Europe, 19 percent of the traffic is Usenet, a whole bunch of American companies are over there running servers and providing it.

Thirteen percent is P to P. That is all user generated, all the folks that are out here and not represented in this room, barely talked about. They don't know your dog on the Internet. That's who we are talking about.

I say when we opened up in San Antonio, we were bringing Internet to the unwashed. We weren't a part of the closed clique that got to be on it. This was out to all of you all. This was in your underwear back home. This was nobody has the Internet, got the power of this global network.

All of us are talking over it today. People are participating. It isn't just this room. This isn't the closed conversation among the folks that all know each other here in Washington. It's everybody.

I hope some of those Dutch customers of ours are running their bikes around there can ride into the FTC and say right on, you know. We're sitting on a high broadband network, we're kicking your guys in all the video games, and we are laughing at you. The Japanese and Hong Kong customers saying the same.

The number was floated earlier today that we are 12th in Internet broadband penetration. That is not correct. Wish it were. We have continually dropped, and when we started talking about this back in Texas, we didn't call it "net neutrality." Before the term, we called it "customer choice" in broadband applications and services and devices.

Market. Let the customers choose and have an open market. Well, we didn't quite succeed in legislation, but we got the only net neutrality legislation passed any legislative body, I'll say that, the Texas Senate, bipartisan, Republicans sponsored it. This is a bipartisan issue.

Up here, it's red and black and the Crips and the Bloods and one guy. This is everybody. It's a Republican issue. It's a Democrat issue. It's a people issue. It is our kids' issue. It's our future.

According to the latest I've read, and it's FCC filings by Adelstein and Commissioner Copps, according to the ITU, the United States is now 21st in the world in broadband

Internet.

The implications for our competitiveness and innovation, but we got closed networks. We've got discrimination. I'd like to speak to that. The security of the first speaker, Dr. Peha, from Carnegie Mellon, you discussed very clearly what the type of discrimination we will have, the good and the bad.

Bits aren't more than just a quantity of the bits. We got a qualitative aspect to these bits. It's kind of like, you know, we thought packets were packets, bits were bits, and they went best efforts, and no one knew what was in them because the routers didn't know.

Well, now, Cisco, and I tried to route a question up here to Mr. Pepper here yesterday for Cisco, but it was a lost packet, hit the bit bucket over here.

(Laughter.)

MR. YOKUBAITIS: I'm going to ask the question now of Cisco. We're big Cisco customers.

Is this deep packet inspection that we're going to tier and qualify these bits, is this the same packet inspection that goes on in China that makes the Great Fire Wall of China, to where if I happen to mention in my packet "Falun Gong," that particular spiritual exercise or cult or practice or religion, whatever, I'm not sure what it is, but it's whatever it is, the gate keepers of those packets go and

find them and give them extra special treatment.

(Laughter.)

MR. YOKUBAITIS: Okay? You know, that kind of tiered treatment we're talking about. We sit here, like I'm saying, that kind of content filtering, content routing, that we have talked about, well, I'd like to talk about that content routing.

MS. RICHARDS: Ron, we're getting --

MR. YOKUBAITIS: We're short?

MS. RICHARDS: Um hmm.

MR. YOKUBAITIS: I see that this discussion we have here in the room, we have -- do we have one? Here, I'll get it. Real briefly, these little cards you ask the questions on, they come up, and this is perfectly legitimate, like a court of law, they come up to the router, which is the FTC representative here to keep this civilized --

(Laughter.)

MR. YOKUBAITIS: No, I'm serious. We have to. This is the technology we have in this room. I agreed to it. We abide by it. We don't interrupt. We keep quiet. We let the speakers, and we route our questions to the speaker, but then the quality of the question is examined.

Because I've seen a lot of complaints that a lot of questions didn't get answered, brought up. It was packet loss. It wasn't routed directly the fastest best way,

because someone else got that priority. I'm just saying that's what we have.

It so happens mine got in the bit bucket. We can re-send it, which I am now. This is it. It's opened and read and the content judgment is made.

I will submit to you we have serious problems that I have a law firm who called us when they found out the NSA was reading stuff, these are insurance defense lawyers. These are not raving libertarians. These are lawyers who have a duty to confidentiality and want to know if we can guarantee that their e-mail on our network and servers is not being read.

MS. RICHARDS: We need to let --

MR. YOKUBAITIS: I couldn't guarantee that.

MS. RICHARDS: We need to let all the speakers have time. We're running out of time.

MR. YOKUBAITIS: Let me just conclude, and I hope we can discuss later the privacy of these tiered networks. I do not want to have the Great Fire Wall of China installed here.

Thank you very much, and thank you to the FTC.

(Applause.)

MS. RICHARDS: Tim, you're up next.

PRESENTATION OF TIMOTHY J. MURIS, GEORGE MASON SCHOOL OF LAW

MR. MURIS: Can you hear me alright?

MS. RICHARDS: I believe so.

MR. MURIS: Thank you. I'm about 25 miles to your west and watching on the Webcast. I was asked to speak for about five minutes in introduction, so I will.

Let me make four points. The first is that the Federal Trade Commission had an important role in the debate over what is sometimes called "net neutrality." The FTC has broad jurisdiction to address anti-trust and consumer protection problems in most of the economy.

The FTC's role in this debate transcends jurisdiction. As this workshop shows, and as Chairman Majoras said yesterday, the FTC has a broader mandate than law enforcement.

The Commission historically has used its full range of tools, law enforcement, hearings and workshops, studies, advocacy, and consumer and business education, to protect consumers by defining the proper role of law and regulation in industries ranging from wine to mortgages to wireless Internet access.

This takes me to my second point. At the moment, the business of providing consumers with Internet access is not specifically regulated. As the FTC observed in the press release announcing this workshop, this has caused great concern to some who fear that in the absence of more direct regulation, consumers will be harmed.

This push for regulation is not based, however, on the current robust marketplace. Instead, it is based on a suspicion about two issues. First, the durability of the competition that we currently observe, and second, the ability of existing enforcement tools to solve whatever problems that arise.

I take a different view. To paraphrase the title of a famous anti-trust article by the late Phil Areeda, the term "net neutrality" is an epithet devoid of analytical content.

In saying so, I am not denying a role to the law or to the FTC in this industry. I have previously described the relationship between market forces, common law, and competition and consumer protection policies as a three legged stool.

Today, most agree that a properly functioning market is the best mechanism for protecting consumers. In a competitive market, firms that fail to meet consumer demand for high quality, low prices and accurate information face harsh punishment. They lose sales to their competitors.

The role of Government is not to pick winners or losers. Instead, the powerful combination of contract, property and tort, that we call the common law, provide the essential building blocks of competition. They define property rights and provide the default rules that enable

consumers to engage in the voluntary exchanges that lie at the heart of the market mechanism.

The Government then plays an important but limited role to supplement the common law. It acts as a check on conduct that interferes with the proper functioning of the market, particularly collusion and fraud.

I do disagree with some of my fellow panelists regarding the consumer protection prescriptions they would apply, which I hope we can get to some of that in our abbreviated question and answer session.

My third point is that the market for broadband access appears quite competitive. A decade ago, consumers almost universally relied on dial up services to access the Internet. Today, they are turning to broadband in ever increasing numbers.

Cable and telephone companies now compete head to head in much of the country to provide consumers with broadband access. The technologies have very different costs and benefits and neither has emerged as dominant.

In addition, nearly everyone in the United States has access to satellite broadband. Numerous other providers are entering now, including fixed and mobile terrestrial wireless providers and power companies.

We heard a comparison earlier to slotting allowances. The FTC's two reports on the subject and a

follow up study using the FTC's data do not support the anti-competitive theories of slotting allowances.

Fourth and in closing, there simply is no reason for the Federal Government to intervene massively in this seemingly robust industry.

Again, that doesn't mean that there's not a consumer protection and anti-trust role, but systematic regulation of the type called for comes at high costs.

However well intentioned, prospective regulation inevitably limits competition. Although preemptive intervention can sometimes be justified, the case has not been, and in my view, cannot be made in this industry.

If problems of the sort imagined by the advocates of regulation emerge, the appropriate law enforcement authorities have the jurisdiction and expertise necessary to address them.

QUESTION AND ANSWER SESSION

MS. RICHARDS: This is the consumer protection panel. So, I'm going to ask the panelists to go down and tell me what two things the FTC should be doing with regard to consumer protection in this area, and also what two things we should be fearful of, or we should pay particular attention.

MR. WEISER: Let me start with the latter. I think the two arguments I'm fearful of, we heard them both on this

panel. I think I'm misconstruing Tim here, and he can correct me.

The first is that we can trust common law tort actions in this area. I'm pretty sure that Chairman Majoras didn't mean to say it, but let me just knock this one out.

There are serious collective action problems for consumers, and also expertise issues for regular common law courts. The FTC has an opportunity here to basically be an advocate for consumers, and to take cases that consumers would not prosecute on their own, and with relatively small damages to individual consumers, but to help police the marketplace generally.

I do think historically in telecom, that role has been played by state public utility commissions. Their jurisdiction here, I believe, is questionable at best, and that the FTC has a key role.

I would say that's one fear. The second fear is the one I heard Jeannine make, which the argument is that disclosure concerns shouldn't be on the table. To that I would say to any consumer group that makes that argument, be careful what you wish for, and don't let the perfect be the enemy of the good.

I don't disagree that the competition policy concerns are very important. Some might say they are more important than consumer protection. But there is an obvious

opportunity here on the consumer protection fronts, and I would be very saddened to see this Commission not move ahead there because it isn't also able to do something more definitive on the competition policy front.

The two things to keep in mind and proceed, the first is a point that Ron made, which is really important, which is there are going to be different Internets, and there should be different Internets. There will be private network services like those being used today by companies like Comcast for their digital voice product or AT&T and Verizon tomorrow for IPTV. That is a different animal.

There is also going to be prioritized traffic. I believe that has a constructive role and will bring consumer benefits, but finally, there must be -- this is my final point and the most important one -- the continuation of the best efforts Internet.

When consumers get broadband Internet access, that's what they believe they're getting. That's what the Internet has been, and we can't lose that. Because that's what gave entrepreneurs like Ron a chance to invent something new, the fact that there is enough of an opportunity for anyone to provide services or applications on a best efforts basis.

As I mentioned and described further in the paper, that's a key role, in addition to the other points that

people have discussed.

MS. RICHARDS: Thank you.

MR. BRENNER: The two things that I think should be on the front burner of the FTC are fraud on the Internet, whether it's e-mail fraud, phishing, other abuses of consumers. This goes on day in and day out, and it's particularly as more and more people subscribe and use the Internet, go beyond the kind of text savvy people that may have been the earlier adopters of the Internet to where broadband is in the home and young people and very old people rely on the Internet.

This is going to be -- you cannot ever close the doors to the FTC. It's a 24/7 obligation because people are hurt by fraud on the Internet, really hurt.

The other thing I'd suggest in this context is a continued monitoring of policies and practices. I think educating policy makers here of what the practices are as the development of broadband continues, as speeds increase, as tiering of services proliferate, and as we maybe see experiments and models of different pay systems where, going to Jeannine's point, other than the -- the only person under the current system who can pay is the customer.

There may be others who may want to be able to enhance their content. I think we should see how those develop, and see whether there are abuses. We shouldn't

assume there are always going to be abuses, and we shouldn't assume that every possible economic model doesn't violate competition or consumer protection policies.

We need to see some things from the marketplace rather than shut them down ab initio by forbidding any kind of experimental behavior under the epithet, as Chairman Muris called it, net neutrality.

The two things I'm fearful of, number one, and it's related to my last point, is a declaration of market failure before there is market failure. There has been no market failure here. If anything, we're just at the beginning stages of all the things that broadband will do for our economy and for people's lives, for independence, for freedom, for all the things that were spoken about earlier.

We've seen also when the Government puts up ex ante regulation anticipating some fault. I'm reminded that I'm at the Commission that first reviewed the Time Warner/Turner merger, and then when the Federal Trade Commission had finished with it, it went over to your former Commission, the Federal Communications Commission, and added an additional requirement on advanced IM messaging, instant messaging, that should AOL ever get involved in advanced messaging, they would have to comply with a whole set of requirements that were dreamed up by bureaucrats at the Federal Communications Commission.

Of course, wanting to get the merger done, Time Warner said okay, whatever. Those were on the books for a couple of years, until in embarrassment, the Federal Communications Commission had to get rid of those requirements because this advanced IM system never even emerged.

The Government dreamed up some parade of horribles. The parade never went down Main Street, and eventually, Government itself got rid of those requirements.

Let's not invent restrictions on the Internet that haven't been justified by a clear showing of market failure and a clear showing that the remedy will solve the problem that's been identified.

Finally, my other fear is that we get into a world of industrial policy in this country, where whether it's the 12th or 22nd or 3rd, wherever we are in the broadband race for adoption, that we begin to subsidize broadband providers where providers already exist.

If the phone companies and the cable companies and the wireless companies have invested real dollars in the ground to provide a service, I as a taxpayer, I am offended by the idea that Government will then subsidize a second, third and fourth entrant in that market, all in the name of some industrial policy to promote broadband.

It's not right when private dollars go into a

marketplace that the Government dollars follow for the second, third and fourth provider.

MS. KENNEY: Just to clarify my position on the disclosure issue. Disclosure to consumers of operating policies is always important, but it is not a remedy to the harms of a discriminatory network. It just isn't. You have to look at how that disclosure affects a consumer's decision just which broadband providers, as well as how they choose on line content and service providers, and that's where it is inadequate.

Let's be clear about that. Because, you know, this is hearsay for a consumer advocate to say don't look at disclosure. What I'm saying is don't look at disclosure as the excuse not to take real action on what is really an issue of competition in the on line marketplace.

One other point I wanted to respond to Mr. Muris on, he's right in that the issue of slotting allowances is different from the issue before us. The biggest difference is that the grocery retail industry is far more competitive than the broadband industry, and yet the concerns were sufficient enough to generate an 80 page report about the competitive impacts, where disclosure was never even mentioned as a potential remedy.

The two most important consumer protection issues I think FTC has to look at, I'm going to confine this to the

issue before us in this workshop, which is on line marketplace discrimination, privacy. Completely unexplored in this workshop. We don't even have the right players at the table.

We've got to look at the technology. We've got to look at the implications for financial security, for security of consumers' private health information, security and privacy of just basic e-mail communications, and everything else.

The other major issue is choice and competition in the on line marketplace. It astounds me that one of the recommendations is that if you disclose your prioritization policy, then I can call Vonage and tell them to pay you, the broadband provider, for faster service, so that you, Vonage, can then hike my rates.

That issue -- if you want to look at how you can exclude or effectively exclude, that's one way. I just raise that to emphasize that disclosure is not the issue.

The two things you need to be really fearful about, the loss of competition in the on line marketplace, and closing the barn door after the horse is out.

If you rely on anti-trust enforcement and other remedies to deal with this problem after discrimination has already occurred and a competitor has been excluded from the marketplace, the damage has already been done. The damage to

the consumer has been done. The loss of competition. The choice in the marketplace has been done. It's been done to the economy as well as those competitors' opportunities in the marketplace are foreclosed.

MR. YOKUBAITIS: Can I respond? I'd like to respond to the privacy by just looking at some of the terms of service of the providers. AT&T had to agree for a limited amount of period in their merger with Bell South to not discriminate as to the source, destination, content of the packet for 30 months. That is really probably a good chance until they get their equipment installed. It's a freebie. They probably aren't set up to do that just yet.

When they do their own terms of service, define the contents of those packets, that come up here would be considered by them a business record. A business record that they have exercised dominion and control of that information and can use it how they wish.

Once they open the packet, do the content filtering and routing, it's a business record. Do you have any copyright interest besides privacy interest in your communications with your lawyer or your doctor?

We have real privacy issues here in this very good discrimination called content routing or filtering, deep packet inspection, Great Wall, Fire Wall of China, brought to us by Cisco, who I sent that question to the Cisco

representative, Mr. Pepper, here yesterday.

This is a really serious privacy matter. I think there needs to be -- here's a disclosure, how many of you all would ever have thought that your private communications are a business record now of AT&T because they have the technology of deep packet inspection, via IMS. I dare say no one would anticipate that.

They are not currently implementing it. We have noticed, but we are going to have to wait until your privacy is compromised to sue them, when they have so much market power and legal power.

We can go on with Wi-Fi networks, when you do the --

MS. RICHARDS: I'm sorry. We have two minutes left. Give me the two things you'd have the FTC do and then let's turn to Tim.

MR. YOKUBAITIS: I think the FTC needs to look at the privacy problems of packet inspection, opening up the packets that previously just went best efforts, a bit's a bit's a bit.

My second effort would be that you really look at competition. Ask some hard questions. What are you going to do with this. Do you currently do it. Get answers rather than oh, it's too complicated, it's a solution in search of a problem.

We have a problem that's in search of a solution, and it's privacy here. It is going to continue to be.

Thank you.

MS. RICHARDS: Tim?

MR. MURIS: Let me make three brief points. First, in terms of tort law, the point which I made repeatedly, but cryptically, today is that the FTC exists, I believe, in large part because of collective action problems but to enforce these common law principles, not to apply new regulations.

Second, I mentioned briefly the "up to" claims. Let me talk about that. Because I think that's an important issue. I first looked at those 25 years ago when I was Director of the Bureau of Consumer Protection in the context of energy savings claims for houses.

"Up to" can be useful in areas where the conditions vary so much that averages in fact can be misleading. The truth is the consumers discount, when they hear "up to," they know it doesn't mean average, and they in fact discount. Many of the factors that apply in homes, the tremendous differences in the age and quality of homes, are relevant in terms of an "up to" claim in broadband.

Finally, in terms of the FTC's role, this workshop and reports are an extremely important part of the FTC. Bob Pitofsky, who was the chairman before I was, and I did an 80

page dialogue in the Anti-Trust Law Journal that's entitled "More Than a Law Enforcement Agency, the FTC's Many Tools," and this is a great example of one of them.

The law enforcement tool is another and final important thing that the FTC needs to do, its role on the Internet in policing the Internet for fraud and deception is an excellent one. The FTC has a tremendous role, and with the passage of the Safe Web Act, I think it will be even able to enhance that role internationally.

Thank you.

MS. RICHARDS: All right. Thank you all very much. I appreciate it. We will take a short recess, and return to our panel on what framework best promotes competition and consumer welfare, industry views.

(Applause.)

(A brief recess was taken.)

WHAT FRAMEWORK BEST PROMOTES COMPETITION AND CONSUMER WELFARE? INDUSTRY VIEWS

MR. LUIB: Thank you, Maureen. Welcome everyone to the first of our last two panels of this fine workshop.

As Maureen mentioned, we will take a look at what framework best promotes competition and consumer welfare in the area of broadband Internet access.

This panel will consider industry views, while the second panel will explore academic and policy views.

I think this panel will also give us an opportunity to hopefully wrap up some of the issues that have been raised in our previous panels, although based on the lively debate I've seen so far, I'm not holding out hope for reaching a final consensus on this particular issue.

I'd like to introduce the panelists. Yesterday, Chairman Majoras talked about having a dream team of panelists, and I think that certainly applies to the folks up here, all of whom have appeared at previous network neutrality conferences, and/or testified in front of Congress on this issue.

Given the height of the two folks on either side of me, "dream team," I think, is especially appropriate.

I will introduce the panelists as they will be presenting, and I'll just give a brief description. Full bio's, as you probably know by now, are available in the folders that we distributed and on our workshop home page as well.

First, we will have Paul Misener, to my immediate left. Paul is Vice President for Global Public Policy at Amazon.com, where he's responsible for formulating and representing the company's public policy positions worldwide.

Paul previously was a partner in the law firm of Wiley, Rein & Fielding, and before that, Paul served as Senior Legal Advisor to a commissioner of the Federal

Communications Commission.

Two down to the left from me is Chris Wolf, who is a senior partner in the Washington, D.C. office of Proskauer Rose, where he chairs the Internet and Privacy Law practice group. Currently, Chris co-chairs the coalition Hands Off the Internet with former Clinton press secretary Mike McCurry.

When I first heard that moniker, I wasn't sure whether that was directed at Government or network operators, but I now know who that moniker is directed to.

Chris also chairs the International Network Against Cyber Hate, a coalition of NGOs addressing the issue of misuse of the Internet by terrorists, extremists, and hate groups.

Tod Cohen will speak next. Tod is all the way to the end here to my left. He is Vice President and Deputy General Counsel of Government Relations for eBay, where he is responsible for global public policy and manages eBay's government relations team around the world.

Prior to joining eBay, Tod was Vice President and counsel of New Media for the Motion Picture Association of America. Before that, he served as European legal counsel and Vice President for the Business Software Alliance in the London offices of Covington & Burling.

Next we will have Joe Waz, who is to my immediate

right. Joe is Vice President of External Affairs and Public Policy Counsel for Comcast Corporation, where he has primary responsibility for Comcast public policy positions and advocacy strategies.

He also oversees the company's Political Action Committees and charitable programs serving as Executive Director of Comcast's Political Action Committees, and President of the Comcast Foundation.

At the NCTA Convention in 2002, Joe was presented with the cable industry's highest honor, the Vanguard Award, for his work in government and community relations.

Finally, two down to my right, we will hear from Gary Bachula, who is Vice President for External Relations at Internet2, a not for profit partnership of universities, companies, and affiliated organizations dedicated to advancing the state of the Internet.

Prior to joining Internet2, Gary served as Acting Undersecretary of Commerce for Technology at the U.S. Department of Commerce, where he led the formation of government/industry partnerships around programs such as GPS and the partnership for a new generation of vehicles.

Gary's other previous positions include Vice President for the Consortium for International Earth Science Information Network and Chief of Staff to U.S. Representative Bob Traxler of Michigan.

We will have each panelist give about a ten minute presentation and then we will have what I hope will be another lively discussion. Before the panel concludes, we will also take some questions from the audience. As you know, we will greatly appreciate you funneling those questions through the ushers who will get those up to me.

With that, I'd like to turn the floor over to Paul Misener, who will lead off this panel.

PRESENTATION OF PAUL MISENER, AMAZON.COM

MR. MISENER: Thanks very much, Greg, and thank you, Maureen, also for inviting me today. This is a terrific workshop. I think the more light that is shown on this particular issue, the more that is understood about it, and the better off everyone will be, and in particular, consumers.

It's hard to know what to say that hasn't already been said yesterday and this morning. We have a focus in this panel as Greg indicated, and I will address most of my remarks to that.

I just want to start off by saying the Internet is fundamentally different than all the media that have preceded it. That fundamental difference, I think, dictates in many respects the policies that are applied to it.

The fundamental characteristic that I'm thinking of, of course, is pull. That is to say the consumers access

information that is made available on the worldwide Web, but that information does not get into the broadband Internet access providers' networks until their paying customer asks to have it pulled through.

If the provider of content is never accessed or their content is never sought by a customer of the broadband Internet access provider, that information never gets in the network.

That's very different, of course, than the cable TV model, broadcasting, newspapers, bulletin boards, mail, everything else. There was a decision made up front to send the content through.

This is pulled through, not pushed. I think that was somewhat mischaracterized yesterday in one of the panels.

Going to the heart of this particular panel, I think it just has to be said over and over that the market for broadband residential Internet access is not competitive and will not be any time soon. It just simply is not.

The Federal Communications Commission's most recent data indicate that well over 95 percent of consumers get their broadband Internet access from either the phone company or the cable company. Even though the FCC decided this last time to expand the definition slightly of what would be considered broadband residential Internet access, even that only brought up the other technologies, up to a little over

three percent.

It's a duopoly. It's going to be a duopoly for the foreseeable future and as such, it is at least worthy of looking at to see if regulation is appropriate.

Incidently, Amazon wouldn't be in this debate at all if our customers had meaningful choice of broadband residential access. If they could choose at will and had some sufficient meaningful number of choices, we wouldn't be involved.

To us, the lack of competition is the touchstone for the policy debate here. I want to contrast this, of course, to the debates that led up to the 1996 Telecommunications Act, which was all about breaking up market power.

That's not what's going on here with net neutrality. We don't begrudge the broadband Internet access providers their market power. We're not trying to break them up in any sense. We're not even looking for an investigation into say the pricing or the levels of service that they provide for their Internet access products, which all go to the premise of the 1996 Act, at least as applied to telephone companies.

Rather, we're trying to prevent the spread of this market power from market power over the network to market power over content in a way that has not been possible

before.

It really is again not begrudging them the market power. There are reasons why they have this duopoly, we don't seek to bust up the duopoly but rather to prevent its spread to control over Internet content.

For something as important for consumer access to information online and all the services that heretofore have been available, we strongly believe that Congress should dictate the national policy here.

This is an important matter. It is worthy of a national policy set by our Congress, and we believe that Congress ought to direct the expert agency, the Federal Communications Commission, to enforce a non-discrimination rule applied to broadband Internet access.

This is why we so strongly support the Dorgan-Snowe bill introduced last month. It is a terrific bill. It's the right way to get these things done and highly appropriate for all the reasons I've tried to indicate already.

With all due respect, I have some concerns about anti-trust enforcement. Some have been articulated before, much better than I will be able to, including the time it takes for an anti-trust action to occur, the ad hoc nature of it, the lack of a general policy, but an approach that would not give certainty to either consumers or to businesses.

I guess the consistent view would be, for example,

to abolish the Federal Communications Commission and go back to a position where there wasn't an expert agency in this area and everything with respect to telecom would be handled through anti-trust actions.

This would take us back to 1927 or maybe 1912, something like that.

As long as we do have an FCC, an expert agency, that has decades of experience enforcing non-discrimination rules, it is only appropriate for another non-discrimination rule on a matter this important to be enforced by the Federal Communications Commission.

Speaking of consistency, I do want to show you, this is the Dorgan-Snowe bill that we favor the enactment of, but here is the bill that the network operators, particularly the telephone companies, favored the adoption of last year. You can see it's a little bit heavier, right?

Throughout here, there are non-discrimination provisions that run in their favor, enforced by the FCC.

To say that the FCC is not in a position to enforce a non-discrimination rule is a little bit disingenuous when it was sought in a very highly regulatory form by the same opponents of net neutrality.

Back to the point, some of the folks who actually oppose the imposition of merger conditions, for example, on the AT&T/Bell South merger and prior mergers, opposed it on

the basis that it seems like an ad hoc way to enforce a policy or to introduce a policy.

I have a lot of sympathy for that. When I was at the FCC, I opposed those kinds of conditions being added on to mergers. The feeling was the merger ought to be granted or not, but not sort of ancillary conditions imposed upon it.

These same opponents of the imposition of these kinds of ad hoc fact-specific or company-specific conditions are the same ones who are also now seeking anti-trust enforcement for net neutrality, which of course, is exactly the same thing. It would be ad hoc, company-specific, and so forth.

This is why we really believe that it would be in consumers and industry's best interest for certainty and for a national policy to be set by the Federal Government at the very highest level, that is the Congress and the President, in a bill, and this is why we support the Dorgan-Snowe bill.

I certainly would ask that you all do the same. Thanks very much, Greg.

MR. LUIB: Thank you, Paul. Next we will hear from Chris.

PRESENTATION OF CHRISTOPHER WOLF, HANDS OFF THE INTERNET

MR. WOLF: Thanks, Greg. I want to thank you and Maureen for this workshop and for this particular session.

I wanted to say a couple of words further about

Hands Off the Internet, which you introduced when you introduced me, to explain that we are a nationwide coalition of Internet users and companies that are united in the belief that the Internet has flourished and because of non-regulation, because of hands off, we believe unnecessary regulation in the future will indeed adversely affect the build out of the Internet infrastructure that is vital to the coming demands for broadband capacity.

Our answer to today's question, to the question of this workshop, what framework best promotes competition and consumer welfare, is that the existing framework, the one that encourages and promotes innovation and progress, is the one that is best for the Internet, for competition, and for consumers.

The current framework is the one that doesn't impose needless restrictions to address hypothetical concerns, especially where regulation has the potential, we think, and others join us, for seriously adverse unintended consequences that will in the end harm consumers.

The current framework is the one that correctly takes an hands off approach, but it's one that is available to provide remedies if and when remedies are required.

To analogize for a moment, because that's what we lawyers do, just as a doctor would not prescribe needless medication for a growing adolescent on the possibility that

some day that adolescent might develop a condition, so, too, we think Federal regulators are prudent to refrain from prescribing conditions that may in fact stifle or injure needed growth.

In particular, the members of my coalition believe that the adoption of so-called net neutrality regulations will have adverse consequences for innovation and for competition in the market for broadband access by among other things making it more difficult for ISPs and other network providers to recoup their investment in broadband networks.

There are no facts, no evidence of harm to consumers or to competition to warrant that regulation.

Moreover, the competitive conditions in the marketplace, despite how Paul describes it -- and I feel like I'm sitting between the duopoly of on line commerce, Amazon on my right and eBay on the left, but I know there are other alternatives -- the conditions in the marketplace for broadband access will protect consumers from the hypothetical harms that are theorized by the neutrality proponents.

Beyond that, the current laws, as well as current regulatory oversight, such as Paul mentioned, at the FCC, are sufficient to address any harms that may arise.

I should add that as much as we would might disagree over the need for new regulation, we agree completely with those on the other side of the regulatory

question that no legal website or content should be blocked by a broadband provider.

We also share the belief that it is and should remain improper for service to be intentionally degraded. In addition, we fully support the use of existing law to pursue anti-competitive conduct if and when it occurs.

We have more faith in the anti-trust laws than perhaps Paul and Amazon does, and we believe that the FCC, FTC, Department of Justice, and State Attorney General's Office, as well as the private bar, are all empowered right now and have tools at their disposal that may be used if there is indeed anti-competitive or unfair tactics engaged in by broadband providers.

We think existing law provides sufficient oversight in our view especially in light of the adverse unanticipated consequences of proposed new regulation.

We especially part company with those calling for net neutrality mandates where they seek to have all traffic travel at the same speed and thus prevent management of Internet traffic and block smart network technology.

Smart network technology will allow traffic to be managed so that time-sensitive data does not get stuck in traffic jams and large data files don't crowd out other traffic flowing over the network.

Removing network management means simply that only

dumb networks can be built for the future, and that is just one of the adverse unintended consequences of net neutrality.

The calls for new regulation also unfairly shift business costs to consumers, by barring network operators from offering premium services to those content providers placing a large amount of traffic on the network.

This would have the full cost of the network, the network upgrade, to be covered by the consumers' monthly Internet access fees, and we don't think that's fair.

Lost in the debate over network neutrality are some fundamentals which are useful to point out. The first fundamental is this, the public Internet is a series of interconnected networks, and it works because of private investment. Competition and innovation is what makes the Internet what it is.

Secondly, the Internet is experiencing an unprecedented surge in traffic that will strain the capacity of the current infrastructure, some like the Wall Street Journal, have referred to this as the "exaflood," a term that references a coming Internet onslaught of many times the largest measurement of data, the exabyte.

I was taken by a recent summary of a study prepared by Deloitte & Touche that put it this way, and let me quote from it.

"One of the key possibilities for 2007 is that the

Internet could be approaching its capacity. The twin trends causing this are an explosion in demand, largely fueled by the growth in video traffic and the lack of investment in new functioning capacity.

Bottlenecks are likely to become apparent in some of the Internet's backbones, the terabit-capable pipes exchanging traffic between continents.

Investment either in laying new cable or lighting existing fiber may be stifled by continuing falls in wholesale capacity prices. Similar capacity constraints may well appear in the ISP and the telecommunications network to provide broadband connectivity to consumers.

The impact may be most notable in the form of falling quality of service, surfers are most likely to be annoyed by the slow down in service, and it may only take an unexpected upsurge in video usage to turn the inconvenience caused by a drop in access speeds into full scale consumer dissatisfaction."

On the heels of that report is the report recently in the media that YouTube last year transmitted data equal to all Internet data transmitted just five years ago or seven years ago, rather.

Against this back drop, we think it's obvious that the capacity of the Internet will have to increase exponentially and rapidly to handle the coming exponential

increase in traffic generated by Internet video alone.

The last thing that is needed is new regulations whose red tape will slow down the Internet.

We think that broad regulation will mean for the first time we will have the government and private litigators setting the rules on caching, co-location, packet prioritization and reassembly, and other aspects of managing Internet traffic.

Even peer to peer agreements would be subject to review and possible litigation.

These are incredibly complex, technical decisions made in managing networks that industry heretofore always has performed, and I should add performed well, without government interference.

An added regulatory regime will only cost broadband developers time and resources that frankly could be spent on improving services.

As proponents of legislation use the term "net neutrality," it refers to a rigid regulatory regime that could ultimately allow the Federal government and self interested litigation parties to get in the way of new technologies and new services on the Internet.

Current proposals could prevent broadband providers from offering enhanced levels of service for specialized applications such as telemedicine or to offer their own

branded or co-branded products and services, arrangements that will help pay for the build out of the next generation of Internet pipes.

This is especially the case in the area of network neutrality where it is virtually impossible to draft legislation dealing with such a technologically complex medium with specificity and without unintended adverse effects.

In sum, we think there is no current demonstrated need for the proposed legislation or regulation. The assertive fears of the networks may some day be degraded or there will be discrimination against content on the Internet are hypothetical at best.

Consumers will be best served if the proven existing legal framework is continued to be used to protect consumers. The Internet should be allowed to grow and thrive based on the very principles under which the significant medium has been allowed to develop up to now.

These principles are network diversity, not network neutrality.

Thanks very much.

MR. LUIB: Thank you, Chris. Next, we will move to Tod Cohen.

PRESENTATION OF TOD COHEN, EBAY

MR. COHEN: Good afternoon. I lost my voice. I

hope you can all get what I'm trying to say.

I would love to go to the doctor that Christopher goes to, that doesn't believe in prevention or vaccinations, or the ability to prevent something from happening that would be bad. That would be a great doctor, to only wait until you were already injured or harmed.

I can't take the view that we should start from the premise of wait until it's all destroyed before we do anything about it.

I'm going to start with that premise and let's talk a little bit about what we don't think this issue is about. First off, it's not simply network neutrality. There are and should remain many networks on which network providers are free to discriminate based on the source, ownership or destination of data, nor is it broadband neutrality. Providers of broadband networks should also in many cases remain free to discriminate.

It is about Internet neutrality, a prohibition on the discrimination, positive or negative, in connection to or carriage over the Internet, the interconnected network of networks that has always been neutral and open as a matter of architecture, and it is the consumer benefits delivered by the Internet, not by the free standing closed networks that should be our focus.

The panel title speaks about competition, and what

is the competition that we are talking about? To us, the issue is not primarily about competition between network providers or even between providers of access to the Internet.

Yes, that competition is good for consumers and barriers to it should be dismantled. Yes, the Internet neutrality problem is made worse by the fact that so many consumers today have at the most two or sometimes only one way they can access the Internet.

No. In our view, even if the consumer had three, four, or five competitive means of Internet access, the problem would not be solved. Each of those network providers would have the same incentives to act as a gate keeper to make deals to give preferential or exclusive treatment to some data over others, and to discriminate.

The competition that we should focus on is on the competition between applications, not the networks. Specifically about the next disruptive applications, the ones that are unpredictable, that appear inevitable, only in hindsight.

I am thinking about invasions like the worldwide Web, which transformed the Internet from a scientific research network to a place where we all go to shop, work, learn, play, communicate. Peer to peer technology with the promise to truly realize the dream of making the distinction

between speakers and listeners irrelevant, most recently with our friends at Skype.

EBay's global marketplace itself, which has opened up Internet commerce in the world of commerce, to practically everybody everywhere for the first time in history, and to create entirely new business sectors of which we are proud of over a million people make full or part time living selling across eBay around the world.

At the time they debuted, it would have been impossible to know if these innovations could succeed. Only the market can make that decision. Only consumers and users can make that decision.

They were all highly disruptive, ask the music industry, the local and long distance telephone companies, some of the brick and mortar retailers, the event ticket planners and everyone else.

The critical point is not one of those innovations required permission from network operators in order to bring the innovations to millions and hopefully billions of people around the world.

They did not have to negotiate. They did not have to persuade or cajole network providers for special treatment. They simply made their innovations available to consumers. They didn't have to determine whether they had an exclusivity agreement even if the network operator wanted to

provide them access, that they couldn't provide them access because they already closed that part of the market off.

What did they do? They made those innovations available, not the gate keepers, and the gate keepers were not in the position any longer to decide what you would and wouldn't see over your Internet connection.

That may be what we all kind of want, which is the growth of the economy and the growth of interaction based on the choices of the users, not based on the gate keepers.

The Internet network is and was neutral. That was the starting point for all these non-corporate unpredictable disruptive innovations to launch without anyone's permission, and only whether consumers and businesses would accept or reject them.

That is really what is at risk today. This is a global issue. The Internet is global. It is a network of networks. Neutrality is built into it worldwide, non-discrimination in routing packets, innovation without permission, and all network operators can interconnect.

More and more countries may find it in their interest to fragment the global Internet as some of our friends in the network operators in the U.S. would like to do.

Erosion of neutrality will make it easier for them to do that. What are the reasons they want to do this?

China, cultural motivations. Europe, as to cultural limitations and content quotas, as we fight every day with the TV without frontiers, and lots of other instances, and in the U.S. itself, with our prohibitions on online gambling.

Fragmentation, fortunately, is rather hard to achieve right now in the Internet. The threat is greatest if neutrality as a fundamental feature of the Internet is eroded.

The policy decisions we make here in the U.S. will have repercussions worldwide. It's not the state of competition in the U.S. market that is at issue here, but the overall competitiveness of U.S. application providers and network providers, too, for that matter, worldwide.

At eBay, we provide a global marketplace. We are constantly battling efforts around the world to restrict or constrain the desires of their citizens to participate in this marketplace.

Here in the U.S., we are mainly concerned about the economic incentives for gate keeping, but many other incentives would be in place in those other markets, including on economic terms, nationalistic, domestic content and application content favored over the foreign, over the U.S. content, and content base, content that is subjected to ideologically driven filters that could give preference over content that is not filtered.

Abandoning neutrality would be an open invitation for everyone else around the world to do the same thing, and would undercut our efforts by our trade negotiators -- right now, it is to prevent discrimination against U.S. companies.

Thank you very much for the opportunity to be here. I do think in the end that I believe we sometimes have to get a vaccination and this is one of those times.

MR. LUIB: Thank you, Tod. Next, we will hear from Joe Waz.

PRESENTATION OF JOSEPH W. WAZ, JR., COMCAST

MR. WAZ: Thanks, Greg. I'm glad to be here representing Comcast, which from a standing start about a decade ago has grown to become the nation's leading high speed Internet broadband provider with about 11.5 million customers.

We actually just set a record for new additions this past year, adding another 1.9 million customers. I think we are doing and delivering to consumers with what they want and expect from their service.

I'll say hi to all the folks who are Comcast Internet customers who are listening to the streaming audio today, and hi to the folks in Sweden as well, who I understand called this morning to ask why the hearing hadn't started yet. Hopefully, they have caught with us and they are now at about the dinner hour.

Greg, you have asked this panel to describe what kind of policy framework will best promote competition and welfare on the Internet. Do we impose new and increased regulation on broadband providers, or do we focus on promoting competitive networks.

If we regulate, do we do so ex ante or ex post, and so consistent with what the Chairman said yesterday, focusing on the facts, I want to focus on some recent facts in the marketplace that I think will shed some additional light on the matter.

Eleven years ago, there was a major re-write of our Communications Act, as Paul mentioned earlier. Congress said it wanted to embrace a pro-competitive de-regulatory policy toward communications, and it did so, but not completely.

It's instructive to contrast the results of Congress' two different approaches. I draw a different lesson from them than Paul did, I think.

First, Congress said it wanted more phone competition, so it tried to get there by setting the rates, terms and conditions under which competing companies could get access to the then monopoly networks of incumbent phone companies, so-called resale and unbundling rules.

In other words, it took a let's regulate the access to the network approach.

Compare that with how the same Act treated the

cable industry. Congress said, cable, we're going to ease up a bit on the economic regulation of your TV business, and we will let you get into the phone business, and this Internet business you seem to be interested in, but we are also going to knock down barriers so that other people can build facilities to compete with you. Phone companies, satellite companies, wireless companies.

In other words, on this front, Congress took a let's promote a facilities-based competition approach.

What were the results of the two different approaches? After more than a decade of resale and unbundling, the Bells faced very little facilities-based competition in video, none of the companies that took advantage of the resale and unbundling regimes ever invested in a meaningful way in competitive facilities to reach residential users.

A decade of legal disputes over regulated access to the Bells networks made a lot of lawyers and lobbyists rich, but consumers were poor for a lack of competition.

Let's look at the rest of the market where Congress put its faith in de-regulation and competition. Video choices exploded. Even more importantly, cable companies invested over $110 billion to be the first to bring high speed Internet to American homes, and we did it with risk capital, just like Jeff Bezos at Amazon. Just like Pierre

Omidyar at eBay, and not with government subsidies.

Meanwhile, the phone companies have since won de-regulation of their new broadband investments, so they, and companies like RCN and Knowlogy and satellite companies and wireless companies are all pouring tens of billions of dollars more into new Internet services.

Now, cable is investing billions more to become the first ubiquitous wire line voice competition in the marketplace.

All that competitive investment is what makes it possible for a Google and Yahoo! and eBay and Amazon and others to be here today and yesterday during the workshop.

It's what made possible the creation of YouTube and its $1.5 billion purchase by Google. It's what happens when you promote investment in competitive facilities instead of trying to regulate the terms of access to facilities.

The lesson is clear. When Congress removes barriers to investment in facilities and reduces regulation of those facilities, our nation wins.

When Congress sets up a regulatory regime of enforced sharing of facilities, our nation loses.

The commercial advocates of net neutrality are seeking a new regime of government mandated and enforced sharing in the name of net neutrality. They insist this regulation is essential to save the Internet, as we know it.

I just sized up the median age in this room, and I think this line will work, to quote Crosby, Stills, Nash and Young, a band from back in the days before MP3s and ITunes, "We have all been here before."

We spent several years around the turn of this century debating something called open access. Back then, companies like AOL and EarthLink demanded that the government set the rates, terms and conditions under which they could use and re-sell the broadband Internet networks that cables and phone companies were constructing.

We were warned that competition was in jeopardy, that free speech was at risk, that giant network builders would control the Internet and the Internet would not grow, very familiar arguments.

What happened? AOL decided it made more sense to invest in facilities and it merged with Time Warner. EarthLink and others lobbied this agency to impose open access conditions on Time Warner's cable systems, and almost no one took advantage.

The outcry for open access faded away and the government stepped away, and what followed was not a debacle, but rather an incredible broadband explosion, with less risk of government dictating the terms of use, investment and innovation boomed.

In that same merger, the FCC imposed

interoperability conditions on AOL's instant messaging service. That is significant to something I will mention later, and actually, picking up on a point that Tod made.

This was regulation by a Federal agency of an Internet application.

Competitors of AOL put together coalitions that insisted the IM platform was essential to the future of human communications and had to be regulated.

Now, I've spent time discussing the rationale for that condition with one of the Federal officials who was responsible for putting it in place. I appreciate the logic of his position. I know he did it and his colleagues did it in good faith.

Just two years after the condition was adopted, AOL asked the FCC to lift it, and they did, with no opposition from the very companies that wanted the condition in the first place.

I think the lessons of history are clear. Less regulation of terms and conditions of network access leads to more broadband, leads to more innovation and choice, and when Government gets prodded into adopting regulations, time and again, it proves to be a waste of resources.

Picking up again on Tod's point about this is really about Internet neutrality. I'm going to assume for a second that I'm wrong and that we will not see more

competition in high speed Internet networks, and so if we accept that assumption, then is regulation of access to the so-called physical layer of the Internet in favor of those who provide commercial content the right answer?

I believe it is not. Here, I want to return to the roots of net neutrality. It really derives out of a model that engineers apply in thinking about the Internet that slices the Internet basically into four layers, more or less.

The content layer, the information and data we send, the videos we want to see, the pictures we want to share, the text we want to read.

The applications layer, things like Web browsers, media players, instant messaging that are used to access and manipulate the content.

The logical layer, which the two most important protocols are the transmission control protocol and the Internet protocol, and of course, the physical layer, the broadband networks themselves, and may I add, the really expensive part.

The notion is that in all layers of the Internet, all data must be treated the same, that the net must be neutral, and if market power occurs at any layer of the Internet and is exercised so as to result in non-neutral or discriminatory treatment that causes harm, that runs against the Internet ethos.

I want to elaborate in these remarks about the fact that the Internet is far from neutral. You already heard how companies like Akamai give major content providers a leg up over other providers by speeding up their content.

We all know that eBay and Google -- Tod and another gentleman from Google were at a panel at Aspen last Summer, the question came up about Google having a preferred position on Sony Erickson web enabled phones, and Google and eBay couldn't agree on whether that was net neutrality or not.

The list goes on and on. I'll be glad, Greg, to provide some more details for the record.

I want to try to draw a couple of conclusions from this observation. First, market power can arise, can arise, at any layer of the Internet. Google's share of the search market, Microsoft's share of the browser market, eBay's share of the online auction market, are each larger than Comcast's share of the high speed Internet market.

Of course, market share is only the beginning of the analysis. You need to look for other indicia of market power. Clearly, in the broadband space, speeds keep increasing, prices are flat or falling, the market is contestable, as has been mentioned by many witnesses over the last two days, by wireless and PBL and other providers, but again, market power can arise at any layer of the Internet.

Second, if standards of neutrality should apply as

a matter of law at any layer of the Internet, they should apply at all layers of the Internet. Noting the prevalence of non-neutrality at the other layers, I think it is bogus to exclusively focus on the physical layer.

Third, if neutrality is to be enforced at all layers of the Internet, then we need to choose whether to apply prophylactic regulation or to apply existing competition policies and anti-trust laws, to take Tod's analogy, do we vaccinate or do we live a healthy lifestyle.

I think the healthy lifestyle here is the latter, to really encourage more investment in competitive facilities, and to rely on current competition policy to address any issues that may arise.

I want to wrap up by thanking Greg and Maureen and the Chairman and everyone again for this enlightening and intensive two days of workshops, and for really trying to focus on the facts.

I hope you will pull more out of us, Greg, as the balance of the hour goes on.

If you need a daily affirmation of the wisdom of how the hands off the Internet process has worked so far, let me point you to a website that's called netneutralityscareticker.com.

It tallies the days since November 19, 2002 when a group of E-commerce companies first warned government

agencies that immediate action was essential to prevent broadband Internet owners from blocking or impairing access to Internet content, services, or devices.

For those of you online now, if you check it out, you will find that the ticker shows it has been 1,547 days since that proclamation of doom, and still the proponents of regulation haven't been able to point to a real genuine problem that has not been addressed by existing law.

I have a high degree of confidence that when we find ourselves on another panel like this in another year's time, that ticker will still be ticking.

Thanks, Greg.

MR. LUIB: Thank you, Joe. Next, we will hear from Gary Bachula.

PRESENTATION OF GARY BACHULA, INTERNET2

MR. BACHULA: Thanks, Greg, and thanks to the Federal Trade Commission for the invitation today.

All too often, this net neutrality debate gets characterized as nothing more than a debate between big and powerful telecom and cable companies on one side and big and powerful content companies on the other.

I want to remind you that there are many, many other players in this game. The debate includes thousands of not for profits, community groups, state and local governments, public interest groups, educational and research

organizations, and many more who use the Internet every day to do their work.

It's not just big business versus big business.

A case in point. I'm here today representing EduCause and Internet2, two organizations which represent those who build and manage information technology systems within our nation's colleges and universities.

EduCause represents the IT professionals in over 2,500 colleges and universities from the CIOs down to the systems guys that manages the LAN clauses.

Internet2 is a not for profit partnership of 209 research universities, along with 70 companies and 50 other affiliated organizations, including many Federal government agencies and laboratories.

Our mission is to advance the state of the Internet, and we do that primarily by operating for our members a very advanced private ultra high speed research and education network that enables millions of researchers, faculties and students to live in the future of advanced broadband, by providing very high speed uncongested pipes that run 10,000 times faster than your home broadband connection in our backbone.

We enable our members to try new uses of a network, develop new applications, experiment with new forms of collaboration, experiencing today what we hope the rest of

America will be able to have in just a few years.

Our colleges and universities are large consumers of the Internet. We cannot accomplish our research and education missions without it. We have become dependent upon it.

We are also big providers of content, and we are inventors and innovators in new applications that use the Internet. We do research on future networks and network architectures. We innovate in the network and we innovate on how the networks are used.

Our nation's colleges and universities have come to depend upon a robust neutral Internet to educate and train our nation's workforce, to distribute classroom content, communicate with students, to deliver health care from our medical centers, to conduct collaborative research across the nation or around the world.

While we build and manage advanced networks on and between our campuses, we still depend upon the commercial public Internet to reach our faculty, staff and students in our local communities, as well as the students and alumni who live around the world.

One example is that MIT is putting all of its courseware up online, making it available literally to hundreds of millions of people anywhere on the globe. Stanford and a hundred other universities are beginning to

follow suit. That is the kind of content we would like to see flow on the Internet as opposed to just entertainment.

We support simple rules designed to enforce net neutrality in the public Internet. Those rules could be general guidelines along with effective enforcement mechanisms.

Those rules need be no more complicated than the 75 words used to guarantee net neutrality in the recent AT&T agreement with the FCC.

Those rules would be designed to preserve the neutrality that began with the original network design, the original architecture of the Internet, and was underpinned by the common carrier rules when the first Internet was built on top of telephone lines. The net neutrality that led to an explosion of innovation in applications at the edge of the network.

The Internet is important to our mission of education and research. It is equally important to all elements of our economy and our society.

It is important to free speech, political discourse, and advocacy. Universities are fierce defenders of the right of all Americans to speak their thoughts, to debate it and to advocate.

Some claim that they would never suppress First Amendment rights using the technologies that we have heard

about today. Just look at the debate about net neutrality in television franchise legislation itself last year. There were public complaints that some cable companies would not permit TV ads from telephone companies criticizing cable business practices.

We also believe that the Internet has become a vital underlying infrastructure for our information economy, the central nervous system of our information economy.

As such, we are persuaded by arguments that label the Internet as an essential facility that could give a network provider control and an unfair advantage in other upstream markets.

This topic was discussed by Commissioner Rosch this past November in France, a speech that is on his web page.

Last mile broadband facilities can indeed be a bottleneck to upstream providers, and we believe there should be a duty to deal with that upstream content and application providers fairly and pro-competitively.

Don't the new uses of the Internet, video, for example, require network providers to discriminate? Don't sound network management principles require the use of quality of service packet prioritization?

We have heard in this workshop that new router technologies exist that can discriminate, but must we? Are there less expensive alternatives?

When we first began to deploy our Internet2 network some eight years ago, our engineers started with the assumption that we would have to find technical ways of prioritizing certain bits, such as streaming video or video conferencing, in order to ensure that they arrived without delay.

For a number of years, we seriously explored various quality of service techniques, conducted a number of workshops and even convened an ongoing quality of service working group, but as it developed, all of our research and practical experience supported the conclusion that it was far more cost effective to simply provide more bandwidth. It was cheaper to provide more bandwidth than to install these sophisticated quality of service prioritization techniques.

With enough bandwidth in the network, there is no congestion, and video bits do not need preferential treatment. All the bits arrive fast enough even if intermingled.

Today, our Internet2 network does not give preferential treatment to anyone's bits but our users routinely experiment with streaming HDTV, hold thousands of high quality two way video conferences simultaneously, and transfer huge files of scientific data around the globe without loss of packets.

Yesterday, the representative of Level 3 made the

statement that they don't use quality of service in their backbone because they have enough capacity to deliver all of the bits as fast as they can travel.

If there is a problem in the last mile in the local loop in terms of capacity, the solution is not QOS, it is more capacity.

We would argue that rather than introduce additional complexity into the network fabric and an additional cost to implement these prioritizing techniques, the telecom providers should focus on providing Americans with an abundance of bandwidth, and the quality problems will take care of themselves.

A simple design is not only less expensive, it enables and encourages innovation. There is no technical nor economic imperative for telephone and cable companies to build prioritization under their networks.

We are concerned that their current policy is to create scarcity so they can charge more, restricting output in order to raise prices, and charging monopoly rents.

Some have argued that competition will solve this problem. We have heard about duopolies. We have heard about how many there are in the markets.

Let me tell you that in Fairfax County, where I live, in McLean, according to the FCC's survey, there are 14 providers. The truth is at my home in McLean, Virginia, I

can only get Internet service from Cox Communications. I'm too far away from the central telephone office to get Verizon's DSL and they don't offer FIOS service there yet.

One choice I have, Cox Communications. They do a fine job, by the way. I have one choice. I'm not in some remote world part of McLean. I am at the corner of 123 and Kirby. I'm about 500 yards from the CIA. I have one choice.

Let's remember when we hear all these data and surveys, let's get down to practical. What do people actually have?

I'm less concerned about whether I have a second choice for broadband service than whether one or both of those choices would interfere with my right to go anywhere on the Net or access any service or application by favoring their own services or those with which they have a separate economic agreement.

If telephone companies are in the upstream market, either directly with their own services and content, or indirectly, by contracting with particular services or content providers, they have an incentive to give more favorable treatment to those services or content providers.

It is simply logical profit maximizing behavior.

For colleges and universities who are non-profit producers of content, we have no profits to give the cable and telephone companies.

The priority is going to be given to commercial interests, to the eBay's and the Amazon's, and especially providers of entertainment and not to educational institutions.

It may be an over used analogy, but educational institutions will get left on the dirt road while commercial providers can purchase access to the four lane super highway.

What is the remedy? First, simple oversight will not be sufficient. The cable and telephone companies have already publicly announced they intend to offer certain providers with premium access to their networks.

Second, relying on after the fact enforcement through the anti-trust laws is not a practical remedy for universities. Universities often do not have the time or resources to pursue an anti-trust action if they face anti-competitive behavior.

Educational institutions may or may not have the standing to pursue an anti-trust claim, and even if they do, those cases often take years to pursue with enormous legal costs.

Our preference is for the government, either the FTC or the FCC, or both, to issue specific and enforceable guidelines to ensure that the cable and telephone companies maintain open and non-discriminatory networks.

Those guidelines must be enforceable. The

guidelines should put an obligation on each broadband service provider to ensure that each application or service provider is able to send us information without distortion or degradation through the network, and that consumers are similarly able to receive that information.

We have had a number of presentations by economists here over the last two days. I'm reminded that President Ronald Reagan once said "One definition of an economist is somebody who sees something happen in practice and wonders if it will work in theory."

(Laughter.)

MR. BACHULA: Internet neutrality has worked in practice for 13 or 14 years in the commercial Internet and for 20 years before that when the Internet resided in the research community.

Internet neutrality sparked enormous growth in both use of the Internet and in the applications and content available to Internet users.

We are not asking to impose something new. We are asking to stay with what we have had in the most successful explosion of an economic engine for the last 30 or 50 years.

The Internet has become an essential piece of our economic infrastructure, a foundation of the information economy. It enables productivity increases across the board in the economy, from manufacturing to banking to airline

reservations to real estate to E-Government.

The Internet has permitted businesses to re-engineer their processes, eliminate middle men and become more efficient.

We should be very wary of tampering with this engine of economic growth by permitting behavior that has been taboo for the entire history of the Internet.

The key is the end-to-end architect of the Internet that encourages, enables and permits innovation by the users. Without permission, without negotiating new services from an ISP, without setting new technical standards within the backbone.

Changes that tamper with the end-to-end architecture threaten that innovation. Innovation in the network itself has and will continue, but it is nowhere near as important as innovation using the Internet; to achieve the former by sacrificing the latter would be a mistake.

To compete in this global economy, we need a simple, inexpensive and open network, not a costly complex closed and balkanized one.

Thank you.

MR. LUIB: Thank you, Gary.

QUESTION AND ANSWER SESSION

MR. LUIB: Before I tee up some of my own questions, I wanted to remind folks that they can funnel

their questions through the ushers up to me.

I also wanted to give a couple of minutes to each of our panelists to respond, if they would like, to some of the specific statements made by the other panelists.

Why don't we start with Tod and work our way down to my right here.

MR. COHEN: I have no comments at this point.

MR. WOLF: I just have a couple. One, Tod, I'm not going to your doctor either because he wants to inject me with a vaccine that's never been tested for a disease that's never been diagnosed.

Beyond that, the only comment I would have about Gary's comment about simply build more capacity, as if that can be done with a magic wand, and as if it would be paid for instantly by someone unspecified, the analogy to Internet2, I think, fails completely because by his own description, there are 209 providers of content.

If there is ever a problem with excess video content, HD or otherwise, you can pick up the phone and call one of those 209 universities and say look what you're doing to the network, and we need to come to some resolution here, and moreover, there are rules on their usage.

You can't do that with the public Internet.

MR. MISENER: You will recall that I started off with sort of a boring description of how the Internet works,

that whole business about the Internet being about pull and not about push.

The reason I mention that right at the start is because I was anticipating that someone would raise the open access comparison, such as my friend, Joe, did. It's just not an appropriate comparison. He talked about companies who are content providers trying to obtain access to their networks. That is not the point. That is not how the Internet works.

It is his customers who demand, they pull the content through the network that they pay for. It's not about us obtaining access. It's about net neutrality for their customers who are also our customers.

MR. WAZ: I'll respond. I'll take a second to respond to that. Again, the service that we provide end users is developing and is likely to develop a wide range of business models, many of which content providers are going to find to be attractive.

I'll give you an example of a differential model that really is more of a push model that is going on right now, Paul, and that is ESPN360. This is a broadband service provided by Disney. It's an Internet service. You can access some of their content right now online, those of you who are online, but ESPN takes this product to broadband network providers, Comcast, Verizon, AT&T, Time Warner, and

says to the network provider, this content is valuable to your customer, please pay me X cents per customer per month for this content or you can't provide it to them.

That's a reasonable business model. Verizon has chosen to provide ESPN360 to its customers on its FIOS systems. Comcast at this point has not chosen to provide that service. Each broadband provider, I assume, is making up their own mind about it.

It is a content provider paid by network model that ESPN360 has chosen to pursue. Other content providers may choose to pursue the same models, other variations on that model, other partnerships on that model.

Some of those partnerships may give the next guy in the garage a chance to compete with Google, who claims to be concerned about the next Google. I'm probably more concerned about the next Google, because I want to see new companies coming along as well, and be able in some cases perhaps to partner with them to give them a chance to take on the entrenched guy.

MR. LUIB: Gary?

MR. BACHULA: No.

MR. LUIB: I think I have a pretty good sense of the panelists' views on existing agency oversight. I'm wondering if I could get them to comment on what seems like one of the many third ways that folks have been trying to

forge in this area, more specifically, one that would include -- again, the devil is in the details, I understand -- heightened scrutiny under the anti-trust and consumer protection laws -- regarding the latter, perhaps a standardized set of material terms that have to be disclosed in Internet access agreements -- combined with a streamlined complaint process that could be at the FTC, could be at the FCC, I suppose it could be at both.

I just wanted to get folks' response to an approach like that. Why don't we start with Gary.

MR. BACHULA: Let me respond to that approach and I guess the other items that were in the proposal from Dr. Weiser and Rob Atkinson. They had four ideas, disclosure, and they also talked about the mandatory provision of open unmanaged Internet by any broadband provider, anti-trust ex post facto enforcement, and then tax breaks for broad infrastructure investment, are sort of the four that I think was in their paper.

I have no problem with those four. I'd like to suggest adding maybe one or two more. Our universal service fund should be restructured to promote broadband deployment and to not be continuing to subsidize only 100 year old telephone service. There is some $6 to 7 billion a year in the universal service fund that could do an awful lot of broadband build out.

And then my suggestion is that any company that takes advantage of the tax breaks for broadband investment or any company that benefits from the universal service fund taxpayer dollars should have to obey net neutrality rules.

MR. LUIB: I think it would make sense to comment on the Weiser and Atkinson approach. That was what I was hinting at. Including in that the provision of an unmanaged open Internet offering by any broadband service provider that is providing Internet access.

MR. WAZ: I've told Phil and Rob before that I want to suggest a second and third way, which is really to get more competitive networks out there, but I'll respond to what they put on the table.

Disclosure is good. You can go over board or under board with disclosure. I'm afraid I missed the previous panel, so I don't know to what extent they tapped on this.

Consumers should know what they're getting. I hope we are doing a good job of that today, and if we're not, somebody tell us, and I'll make sure we are doing a better job.

Disclosure, letting people know what they're paying for is always the right policy.

Tax breaks for broadband infrastructure investment, not all providers and not all would-be providers can take advantage of tax breaks, and by the way, you know, cable

companies, phone companies, wireless companies, are throwing as much capital as they possibly can at new broadband networks, so I don't think there is really a shortage of interest. Right now, I don't think there is a shortage of dollars available.

The thing that would cause people to stop putting dollars into this would be more regulation in the area.

I'll pick up on this gentleman's comment on USF availability for broadband. USF really does need a make over. I think we can all concede that. The way it's working today, it is used exclusively to subsidize 100 year old copper, and it's out of control.

I think we really do need to figure out ways to collect universal service funding better and target it better to bring broadband to those last unserved areas around the country, and I think if government is going to put energy into this area right now, it really is about closing that last remaining rural and geographic gap around the country to make sure that everybody does have access to broadband.

MR. MISENER: Greg, thanks. I think the summary would be those would be helpful steps but not sufficient. They should not be a substitute for clear nationwide national policy adopted by the Congress.

We would certainly welcome the FTC's continuing interest in oversight here. Enhanced disclosure

requirements, that sounds helpful to let consumers know what's really going on, but it really is no substitute for a non-discrimination rule adopted by Congress.

MR. WOLF: I guess the only thing I would add to this discussion is to mention the example of the only complaint that I'm aware of where there's been blocked access, the Madison River case, where the complaint was filed and it was resolved within a very expedited period of time.

I would say that if there is a pattern of complaints that can't be resolved quickly, then yes, expedited consideration should be mandated, but in the absence of that, our fundamental position is that no new regulation is required in the absence of a real problem.

MR. MISENER: Tod, will the gentleman yield just for a moment on that point? Thank you very much.

You should note that Madison River is often introduced as an indication where proof that the FCC can and will enforce against these kinds of blocking problems, but you should also note that Madison River was decided, the decree was entered, before the FCC re-classified broadband telephony.

It was based on Section 201 of the Communications Act, which no longer applies to broadband Internet access providers.

It's not exactly clear to me how Madison River kind

of enforcement could occur today at the FCC.

MR. WOLF: I think it is because using your own words at previous panels, we have been around a lot together, I thought I understood you to say that Title I would provide the FCC with the power to consider complaints like that. If you don't think it does, then maybe there is another issue.

MR. MISENER: It does. Madison River is not the example. Title I is sufficient authority, in my view, to guarantee net neutrality, but Madison River was based on Section 201, common carriage.

MR. WOLF: Sorry, Tod. Over to you.

MR. COHEN: When you lack a voice, it's always good for others to speak up. The notice question, we come at this somewhat slightly differently, because we think the mandatory notice and disclosure are being helpful, especially to my colleagues in the legal profession, we don't think it would have that much impact on users and in ways -- the only type of notice that would work for a user would be literally a pop up, when you click on the link, which they would say you can't go to this website, here, our network provider has a deal with this content provider, and you have to go here.

That's exactly the type of regulation that we all pretty much agree is the horror show of what we want to avoid, so therefore, the only type of notice that would work would be something that would be so intrusive nobody would

want to use it.

What we would think instead, to go back to what Paul said, is really it's a simple non-discrimination clause, be it the 75 words in the AT&T/BellSouth merger, that would be fine. We'd be happy to go back to our August 2005 when the DSL rules were changed, where all the investments that were being made and are currently being made were already planned, and somehow, they were able to live under the regime and still make investments in broadband.

MR. LUIB: Thank you, Tod. I guess to return to the medicine metaphor --

MR. WOLF: I'm going to be sorry what I started.

MR. LUIB: If folks up here could, regardless of your views on the present state of competition and the market for broadband Internet access, give us maybe two prescriptions to promote that competition, whether it be revised local franchise rules, revised Federal spectrum policies, government incentives, what you think would be best in this case.

We don't all have to respond if you don't want to.

MR. COHEN: I'll start. Just maintaining consumer choice. On the Internet, net neutrality itself is probably the greatest driver of all. Users choosing and wanting to have faster speeds and higher speeds rather than the network operators saying which and where they can go is the greatest

incentive we can give to building out more broadband.

MR. WAZ: Greg, I'll throw out one idea, and it's an idea I put on the table five years ago when we first started having this debate, 1,527 days ago.

It is spectrum policy. I was on a panel out in Boulder this week where Dale Hatfield, the former Chief Technologist for the FCC, was running through things that matter in communications policy. He said spectrum policy really, really, really matters.

I think we are seeing evidence these last few years, particularly at the FCC, and increasingly on the Hill, that we do have to start doing a better job of managing and allocating spectrum and encouraging more investment in that space.

You had an AWS Auction recently. It's a chunk of spectrum that has been auctioned off. The cable industry, which is a new entrant into the wireless space, bought a sizeable piece of so they will provide mobile competition against the phone companies and the other wireless companies around the country.

You have a new 700 megahertz auction coming up later this year, where both EchoStar and DirecTV, the two satellite providers, have been lobbying the Commission to make sure there is a national license available, apparently they intend to get into the broadband Internet space as well.

This is the way to do it. The way to do it is to get more investment and competition out there. As a company that's competing like crazy today head-to-head with the Bells, I don't have my choice about whether there is going to be more competition, but it is the technology and investment dollars are going to go after this.

MR. LUIB: Next, I'd like to take up the general issue of the need to act now. We certainly have heard that if we don't act quickly, technology, the development of the Internet, incumbents' positions in the marketplace, will, if we give it a few years, result in no turning back, and then the response on the other side typically has been well, we have the FCC broadband principles and the merger conditions in place with respect to AT&T and Verizon, as well as commitments by the major ISPs, not to block or degrade lawful content.

I guess I'm wondering if I could get folks to respond to that topic, the need to act right now, and for those folks who presumably think we do not need to act now, are there a set of circumstances that you could foresee where we really would have to -- if not now -- act at that point, re-evaluate things significantly.

Let's start with Tod and work our way down.

MR. COHEN: I think we can't let up on the pressure fundamentally. That's one of the things that is helping move

the debate. The AT&T/BellSouth merger was a significant step.

I do think it makes a lot more sense to do this now. I do think the danger of waiting is quite significant, and I do think that is because it's so much more difficult to unroll it.

I think what Joe was talking about with ESPN360 is a really, really interesting issue, and an area where I think we all need to spend a lot more time thinking about, what is that model and how does that impact, and whether that is a viable way to still maintain a network that is neutral, an Internet network that is neutral, and yet allow innovation to occur in those spaces.

I think the debate is important right now, but I would like to see law passed as soon as possible.

MR. WOLF: I think my direct comments really address this, and obviously, at Hands Off the Internet, we don't think that any action is required now, in fact, we should let competition apply the pressure that Tod is talking about and Paul and Gary, rather than have regulations set in advance.

We do think that if content is blocked or if service is degraded, then it is time for action. Again, we haven't heard any examples of that happening. Unlike the clock, which is like the death clock in New York, that's

ticking away, which actually serves as a very good disincentive to doing all the parades of horribles that so many neutrality advocates say will happen.

MR. COHEN: Let me ask a question. Do you think that the Chinese Internet is neutral?

MR. WOLF: I'm not sure I'm prepared to answer that.

MR. LUIB: Are we concerned that we likely could end up with the same type of Internet access as the basic Internet access that exists in China?

MR. COHEN: It's a question of gate keepers.

MR. WOLF: What you don't have in China are competitive forces. Whether it's a duopoly or more than that, and I think it's more than that, it makes a big difference in how broadband providers act.

I'm not a student of Sino Internet technology, so I don't want to answer that.

MR. MISENER: We need to calibrate the time scale here. I heard Joe's comments about spectrum, and I'm a big fan of Dale Hatfield and know a little bit about the area.

I agree that it's going to be a welcome development when consumers can readily choose among a large number of broadband Internet access providers, but this won't happen any time soon.

It is for the foreseeable future, and I mean on the

sort of half the age of the Web time scale, going to be a duopoly for American consumers, well over 95 percent of consumers get their Internet access broadband either from the phone company or the cable company, and it's not going to change any time relevant. That is why there is a need for immediate action.

The ticker is cute. I wasn't aware of that website. I have to go check it out. It's a cute idea. It does make a point.

You need to know there are reasons why there haven't been these kinds of incidents. One is they haven't yet invested in the high end deep packet inspection routers from Cisco, and my friends from Cisco even tell me that they have orders waiting for resolution of the telecom policy debates, and that is the other reason we haven't seen this kind of blatant discrimination, they have been on their best behavior. This is a smart action on their part.

They have announced to Wall Street that they fully intend to do this. The quotes are well known from the leadership of the broadband Internet access providers. They intend to do this. They just haven't done it yet, pending the outcome of the telecom policy debates at this agency and on the Hill and at the FCC.

The absence of problems to date does not in any way diminish the clear and present danger.

MR. BACHULA: As Paul said, a number of the large companies have made public announcements, both in Wall Street and in the Washington Post, that they intend to employ these new technologies that have just become available to them.

Cisco has orders pending. They will create this tiered kind of network, fast lane and the slow lane. It hasn't happened yet, but once it happens and once business contracts are signed, and once a company's quarterly cash flow is dependant upon those contracts, it is going to be very hard to unravel it, which is the reason why we should be in it now and not sort of wait to see what happens.

Again, we have heard a lot in the last two days about all of the huge investments that is made by the cable companies, $100 billion, $18 billion by Verizon, all this great expansion that has taken place.

That has taken place before any of these prioritization and other techniques were put into the network, so that was taking place in an environment, if it wasn't legally required to be net neutral, it was a de facto net neutral environment.

Lots of investment got made and lots of innovation happened, and while all these great and wonderful things that we are hearing from the telephone and cable companies happened in that environment, now they want to change it.

I think that is a very risky thing to do.

MR. WAZ: I don't think anybody is talking about changing anything. I think the status quo is the status quo. We have an FCC policy statement that I believe every facilities based ISP that I'm aware of, with the exception of Madison River, which I'm sure somebody mentioned in the last two days, has abided by.

We are not blocking. We are not degrading. I go home every night and I use Amazon and eBay to my heart's content, and half.com, a great place to buy CDs.

We need to focus on the here and now, and when we get to day 1,528 without a problem, then we can make it onto the next day, and when that problem appears, this agency and the FCC will know it, and they can act on it.

MR. WOLF: I want to go further than that. I think these business relationships are not de facto pernicious. In fact, they are the things that will help pay for the capacity that will allow the Internet to grow at the rate it needs to grow, so consumers don't bear the entire freight for expansion of the Internet.

MR. BACHULA: The consumers don't bear the entire freight now. Every bit that travels on the Internet now today is paid for at both ends, so the companies that put those bits on from Google and Amazon and eBay, pay for their capacity, just as much as the consumer pays on the other end.

MR. WOLF: Without getting in too esoteric a debate

and without getting out of my depth, as the audience member just blurted out, it's not so.

Obviously, YouTube is not paying the provider of the last mile for the torrent of data that's encompassed by the service they are providing. We are talking about the last mile here.

MR. MISENER: The consumers, of course, who have paid for their Internet access are the ones who are controlling what goes through that network. They are the ones who are pulling it through, which is why I keep going back to that.

Could I raise a point that doesn't seem to be discussed too much? I'm hoping it's a little bit helpful here. That is there hasn't been enough focus in my view on private networks.

Joe raised Akamai as a service. I'm not sure you're familiar with the model. Essentially, you have a company that has set up edge serving facilities. That is to say server farms outside major metropolitan areas.

What they do is they occasionally are paying the sites that pay for their services and keep essentially a copy of the content locally to the customers of the website. A website based, for example, in Austin, could have a lot of customers in New York City and have Akamai servers outside in Hoboken, so that when the customer in New York goes to access

that content, it doesn't have to go all the way back to Austin through all the mini-hops of the Internet. It provides a better service.

That exists today. I don't think net neutrality is in any way designed to prevent that kind of a service in the future.

Likewise, physical private networks that skirt the core of the Internet are available today. Companies like mine can purchase those kinds of private networks to provide better service to their customers, and there is no problem with that.

One concept that seems to be lost, at least in my view, is that physical separation of networks, from the public Internet and these sorts of private networks, is certainly allowable and it's already done today, but there is the possibility also for logical separation, where perhaps in the core of the network on new capacity, that is to say capacity that does not take away from the public Internet, companies could use pay for that kind of a private network within the core that does not again take away from the public Internet capacity.

That kind of a private network is the sort of thing that companies already or many content companies are already paying for and might be willing to do so in the future.

MR. WAZ: Can I pick up on that? I think Paul

makes an excellent point, which is what brings me to one of my biggest concerns, about a number of the legislative proposals.

That is what is the Internet for purposes of regulation? What is this thing we're talking about?

A number of the legislative proposals actually delve deep into the network and talk about how the broadband network will be used. It's an extremely hard line-drawing exercise where some who have attempted to draw these lines are drawing them very deep into the network.

Paul, I think you are hitting on something that's worth further conversation.

MR. MISENER: I agree. Of course, I agree! I agree with myself. If you think for a moment what the network operators really want to do, they don't want to put deep packet inspection routers in the last mile. This is not about somehow substituting some very expensive device at the DSLAM. That is just not economically tenable.

What they want to do is put these routers as far upstream as possible, so they have to buy the fewest, and put the fewest loads on the network for downstream.

It's possible that if properly defined, private networks could rely on that kind of technology so long as again, the public Internet is not affected, just the way that private physical networks in Akamai styled downstream serving

are permitted today.

MR. WOLF: It's equally possible that legislation or regulation may prevent that, just because -- that's why we want to write it correctly, so help us write it. It will look like something like your thick packet rather than your thin packet.

MR. MISENER: We have the thin packet. That works.

MR. LUIB: We have just a few more minutes left. I'm beginning to wonder with all the mentions of Akamai, whether they are somehow behind orchestrating this entire debate.

MR. WAZ: They have never been on one of these panels.

MR. LUIB: I'm going to take the opportunity to bundle a few questions for the proponents of regulation.

First, what kind of time frame do you foresee? I think both you and Tod have made statements that no amount of competition is enough to prevent the concerns that you have raised.

And then also, are there concerns about enforcement of the regulation, particularly identifying violations of the net neutrality and where within the network that occurs, and how you might address those.

Why don't we start with Tod.

MR. COHEN: I sometimes get upset when I hear about

the proponents of regulation. What we are advocating is where we were in August 2005 and before Brand X.

It is really a return to the status quo as where it was, so it's not a proponent of a new set of regulations.

On the proper way to regulate, I'll leave that to others at this point.

MR. MISENER: What I have said, and I said, I think, already in this panel, Amazon would not see a need for these sorts of rules if there were meaningful competition available to consumers. That is meaningful choices, rather, available to consumers.

It's more than just pure numbers of providers, however, because of course, the switching cost among providers is extremely high. Truck rolls, new equipment, possibly inside wiring changes, service contracts that are long term. All these things make it much more difficult to switch among Comcast and AT&T than it is between Coke and Pepsi.

It's not just a pure numbers game. It really is some level of meaningful competition and no agency is better equipped than this one to determine what meaningful competition is.

MR. WAZ: I guess the great news for consumers is the truck roll and the inside wiring prices have to be eaten by us because if they're not, Verizon keeps the customer, and

if somebody wants to switch from Verizon to Comcast, we are there tomorrow. If someone, God forbid, wants to switch from Comcast to Verizon, maybe they will get there tomorrow. I don't know.

The important thing is switching costs are really not a barrier to folks going from Internet provider to Internet provider, and the more competition that gets out there, the probability that those barriers to switching become lower still.

MR. LUIB: I'd like to conclude by, I guess, taking us outside of the U.S. briefly here. Tod mentioned China. We have discussed the international context in a few of the other panels.

I guess I'd like to see if anyone has any insight into the debates happening outside of the U.S. right now, anything that we can or should draw from those debates, whether that means embracing what is happening in other countries or running away from what is happening there.

MR. WOLF: Greg, my favorite example with respect to that is just north of the border in Canada. You mentioned that I chair a coalition of NGOs that are fighting cyber hate.

One of our -- I won't say members -- individual who supports our efforts was successful under Canadian law, which doesn't have the First Amendment, in getting a hate mongerer

on the Internet arrested and jailed. That would never happen here, and that's probably a good thing, as a First Amendment proponent.

Someone in the United States really objected violently to that, someone in Roanoke, Virginia, and started posting death threats against this individual on the Internet.

The individual went to the Canadian equivalent of the FCC and said may I ask the ISPs to block these death threats, please, because I'm afraid it will inspire people in Ottawa and Toronto to drive over and kill me. They were posting his address and his wife's name and his picture.

The Canadian equivalent of the FCC said no, this has to be noticed and put down for a hearing, there needs to be opportunity for comment, and to this day, this happened last October, to this day, those death threats are still on the Internet. Thank God this guy hasn't been hurt.

Talk about adverse unintended consequences.

MR. MISENER: To answer your question having to do with net neutrality, the Canadians are considering regulation in this area. They have had some public hearings on this and are watching what we do, frankly.

Of more concern in Europe, we have seen announcements from the CEOs of major telecommunications firms that they fully intend to extort the source of rents that

Gary mentioned from companies, content companies, but the companies that they mentioned are all American companies. They are Google, Yahoo!, Amazon and eBay. Those were the four companies mentioned by the CEO of Deutsche Telecom.

They don't even have the sort of considerations that we have within the U.S. If we get it wrong here, undoubtedly it will be wrong there, and the principal losers will be American content companies who are very successful overseas. They will be up against often state partially owned monopolies.

MR. LUIB: Anyone else?

MR. WAZ: There is a lot not to like about what's going on abroad. I think someone alluded to the television without borders virus that is in Japan and two other forms of content as well in the EEU.

There is a lot to like with what's going on in the United States. These last several years, there has been a constant flood of observers from abroad and a lot of ambassadors going out, including our own Ambassador, David Gross, going abroad promoting the fact that facilities-based competition is the way to go and liberalization of markets is the way to go.

I hope more foreign authorities will learn from us.

MR. LUIB: All right. That concludes this panel. Why don't we take a three to five minute break.

(A brief recess was taken.)

WHAT FRAMEWORK BEST PROMOTES COMPETITION AND CONSUMER WELFARE? ACADEMIC/POLICY VIEWS

MS. OHLHAUSEN: This is our last panel. It is similarly titled to the previous one, what framework best promotes competition and consumer welfare, but in this one, we are going to concentrate more on academic and policy views.

When I started off yesterday and moderated a panel that was an overview of what is net neutrality, what are we talking about here, as I come to the final panel today, someone quoted Crosby, Stills, Nash and Young in an earlier panel, and in this one, I will just say my quote is "What a long strange trip it's been."

I don't know if we are that much further along. I think we have had some really excellent debates and really good engagement on the issues.

I am hoping that in this panel, we can do a little more sifting, a little more identification of whether -- I doubt everyone on this panel will come to the same conclusion -- maybe we can have a little more sketching out of, given the challenges, given the state of affairs, what framework might best promote competition and protect consumers.

I'm going to introduce the panelists briefly in the order in which they will speak. As we have mentioned, their

biographies are in your materials. There is certainly more information. In the interest of time, we will do the short form here.

First, we will have Tim Wu. He's a Professor at Columbia Law School. He clerked for Justice Stephen Breyer at the Supreme Court and Judge Richard Posner on the 7th Circuit, and he also writes for Slate Magazine.

Followed by Christopher Yoo, who is a Professor of Law and the Director of the Technology and Entertainment Law program at Vanderbilt. Prior to joining the Vanderbilt faculty in 1999, Professor Yoo clerked for Justice Anthony Kennedy of the Supreme Court and Judge Ray Randolph of the U.S. Court of Appeals for the D.C. Circuit.

Next will be David Sohn. He is staff counsel at the Center for Democracy & Technology, a group dedicated to working towards democratic values in the digital age. Mr. Sohn previously was commerce counsel for Senator Ron Wyden, advising the Senator on technology and telecommunications issues.

Then we will have George S. Ford, who is the co-founder and chief economist for the Phoenix Center for Advanced Legal and Economic Public Policy Studies, and the Phoenix Center. For those of you who are not familiar with it, is a non-profit organization that studies public policy issues with an emphasis on the law and economics of regulated

industries.

We will follow the same procedure as we had in the other panels. If you have questions, please write them down. The ushers will bring them up.

With that, we will start off with Tim.

PRESENTATION OF TIMOTHY WU, COLUMBIA UNIVERSITY

MR. WU: Thank you very much. Thanks to everyone who made it here or stayed through these sessions. Thanks for inviting me.

I want to use my time up here to actually talk about facts a little bit more than policy. We have been having a several day debate, and actually, a several year debate, over what might happen or what consequences neutrality, lack of neutrality, will have, whether it's from neutrality in the design of the network or through laws that kind of foster neutrality, like Carterphone rules or some of the Computer Inquiry rules.

I want to talk about an industry, a slightly different industry, than the one we have been spending most of our time on, which is the wired broadband. I want to talk about the pure wireless industry, namely the cell phone industry and mobile industry, and discuss some of what's going on there.

Obviously, this industry is quite a bit different, the wireless industry, than the broadband industry. I'll

note two differences which I guess are relevant up front.

First of all, it doesn't have the architectural, on sort of the code side, it doesn't have the architectural and theory tradition of end-to-end networking, or of the original TCP/IP protocols invention. This is barely used in mobile wireless networks now, and in limited degree on 3-G.

It doesn't start from those kind of foundations and DARPA and all that stuff. It's a different tradition.

Second of all, from a policy basis -- maybe I'll say three differences -- on a policy basis, it has a different regulatory tradition, largely unregulated, you know, some spectrum policy, of course, controls, who can be an entrant to a certain degree, and you'd have spectrum.

It hasn't had the oversight, and of course, there is no Carterphone rules, the rules we now like to attach to devices you'd like to have and so on.

The third thing I'll add, and this is an area -- and I don't know if this is endogenous or causual -- this is where the United States is largely not viewed as a technological leader, mobile, unlike our other areas, personal computers and broadband, our Internet web applications, usually seen as a leader.

We are not the worst country. There is certainly more of the sense in the world that Japan and Europe are co-equal if not ahead of the United States in a lot of these

technologies, so it's different in that respect, too.

The question is what is causing some of these differences. When we look at these markets, what we see when you look at it is a good side and a bad side. A lot of people have looked in the FTC -- sorry -- FCC -- spent a lot of time looking at horizontal competition inside the market.

You have four major players right now who have competed to create relatively competitive prices. You have a decent level of penetration of the technology to levels almost comparable with Europe and Asia.

That's sort of the good side of things. I think some of the FCC action in this area, portability, other rules, have done a lot to try to increase that horizontal competition between the parties.

The area where I think you see a lot more troubling results are things that I think should be causes for concern is the effect of -- the cast of this market with respect to the vertical industries are above and beyond the wireless spectrum.

In other words, the effects that the unregulated industry has had on both software development for mobile platform and for device development in these areas.

I want to highlight three areas in which we see effects, I think, that give rise to some concern. First of all, I'll talk about the practice of product crippling and

the problems with carriers imposing controls on what kind of devices companies can sell to consumers.

Second of all, I want to talk about the problem of discriminatory 3-G broadband services and misleading advertising and also just straight out old style discrimination in offering of broadband services.

Third, I want to talk about -- I don't know if it's a problem, but this lack of energy in the mobile software industry, which has been talked about for a decade as the next industry and something that should happen. If you talked to developers in the field, it is largely seen as stalled. One of the developers described it as a carpet of pain, misery and destruction.

A market that has failed to develop as people had thought it would, and has really failed to take off, and to look at some of the details.

Let me start with product crippling. To do this research, what I did was I talked to developers of various products, all of whom are anonymous for fear of -- most of them anonymous for fear of retaliation.

They complained about the way the wireless world works is very different than the Internet or the wired line world in the sense that in the wired line world, you have the basic telecom person, the Carterphone right to attach whatever device you'd like.

There is a zero price interconnection rule in more telecom terms. You can put whatever device, and as you know, that led -- AT&T strongly resisted that rule. They liked to have control and have their permission to put something there, to attach the network.

In 1968 and then through various -- eventually, this was de-regulated. The result was, of course, the fax machine, the answering machine, the modem, the personal Internet, on and on.

We have a very different situation in the mobile world. That is to say this is not a world we can go to a Best Buy and buy something and hook it up to the network. Almost entirely, over 90 percent of this stuff goes through carrier approval. The carriers have, like AT&T in the 1950s, almost complete control over network attachments.

What are the results of that? The results of that is that the carriers have used that control to condition what kind of features phones can have. Let me list some of the examples.

One of the interesting examples is that the carriers have put a lot of control over phone timers. In other words, timers that might develop an independent record of how much time you are using on your telephone. The carriers have felt that obviously people might contest their bills and they find this is something they don't want.

Phone timers, even though the manufacturers of the devices think this would be a nice service, so you can keep track of your own billing, have been severely limited on telephones.

Wi-Fi has been blocked out of American telephones, not every American telephone, but almost all American telephones in the U.S. market based on carrier demands.

There is starting to be a little bit of -- Apple has a Wi-Fi telephone right now. There is a little bit of push back on this, but in general, Wi-Fi technology, which has been around for about five years now -- it's something you can ask people, why is Wi-Fi not in cell phones?

It's not by accident. It is because of carrier control. YouTube has been on most carriers, T-Mobile is an exception, largely crippled to its capabilities. BlueTooth was once thought of as revolutionary technology. It is still not a bad technology. For example, it might make it easier to print out your address book on your phone book or just transfer files from your phone to your computer back and forth.

On a lot of carriers, Verizon, I don't want to pick on Verizon, but particularly, BlueTooth has been crippled and its functionality has been lost. The markets that might have developed on BlueTooth have not developed at all.

Let me add beyond BlueTooth, where my GPS service

-- I won't get into that.

Phone transfer capabilities related to BlueTooth, one of the things a lot of the developers said is we put cameras in phones, the first thing we wanted was some way to get photos off the phones. We were going to set up easy kind of e-mailing capabilities.

Carriers were very resistant to this, mostly because they wanted people to sign up for revenue added photo sharing plans of various kinds.

I think a lot of developers claim that unnecessarily camera phones are a lot less useful than they could be. In other words, they could easily exchange photos with other people or send them on the Internet very easily, instead, it's limited to very limited distribution channels.

There are more examples in the paper. I don't want to run past my time.

I want to talk next about broadband discrimination, what happens when you have no oversight. Some of the people on these panels have talked about -- I think very admirably -- that cable and Bell companies have said we will not block or degrade any content.

That is true, and to their credit, they have held up to that pledge so far in broadband, and I think that's been a great thing. That is not the case in wireless.

In wireless, explicit contractual provisions ban

you from using your wireless connection for anything other than web surfing or e-mail or certain types of business applications. They ban explicitly the downloading of media content, the downloading of music, the downloading of video, the use of VPN, the use of voice over IP, a huge list of things which according to the contract you are not allowed to use your phone for.

There is blocking going on, or at least contractual blocking going in in the broadband world, it's in the 3-G world. Those are principles which -- they are reminiscent slightly of the cable industry's practices in the early 2000s, the one that Michael Powell first spoke out against, as being problematic, and that the cable companies, to their credit, backed off from, to their credit, the cable companies said we're not going to -- we want to give our customers the full experience, that was just kind of a mistake.

However, we have this exact same situation in wireless broadband, which is blocking of various content and various uses of your cell phone.

I also want to limit to that, this is a consumer protection issue, so I think worth bringing up at the FTC, there was a lot of advertising, which Verizon has an ad, which they still are running, I don't want to pick on Verizon, but they have an ad that says "unlimited Internet access."

However, it turns out that it is limited. First of all, it's blocked. You are allowed to use it for various applications. Second of all, it has bandwidth limits, which if you violate, you get terminated and charged termination fees.

These contractual provisions have been enforced, particularly by Verizon, as I've said, where people who are accused of downloading forbidden content are kicked off the broadband service. This is an enforced policy.

The last thing I want to talk about, I'm kind of running out of time, is this problem of application stalling. This is something -- I just want to put these facts out there.

People really thought that mobile applications would be this incredible market. There are a lot of reasons that developing from mobile platforms are difficult. They are small. They don't have a lot of computer power. They are not like PCs with the advanced degree of power that we have in PCs.

They are as good as PCs ten years ago. The problem is really the development environment. Carriers are very strongly controlling of who can develop for them and what kind of applications they will approve to work, and in the process, I believe, have crippled what might have been otherwise very healthy and important markets, including

markets based on instant messaging, which are very popular around the world and basically not developing here, and second of all, I'll just say this last, GPS.

People thought that GPS and access to GPS would make possible all kinds of great applications, like keeping track of where your dog is or something. This has not developed. Mostly it's because so far, for whatever reasons, and there is more than one reason here, the carriers are not giving people access to the power of the GPS' capabilities in the phone. There is nothing to program to. The APIs are not available, as you think they might be.

We have a bottleneck style of mission driven development environment, and the results are clear. The level of innovation that you see in the web world, and I better stop, and in the PC world, are dramatic powerful and impressive. We look at the cell phone world, which is an unsupervised, unregulated world, and we see what should be a jungle is a wasteland.

Let me leave it there.

MS. OHLHAUSEN: Tim, let me just follow up with a quick question. One of the questions that's been batted around yesterday and today is whether at some level of competition, some specific number of competitors, net neutrality is not going to be necessary because competition will take care of these issues.

Is it the implication from your study, from your work here, that all providers have some incentive not to provide certain services in a way that competition cannot overcome, but which will harm consumers?

MR. WU: Right. My study does offer some caution for the idea that competition is a cure all for everything. I think there are a lot of examples of parallel behavior here. We are talking about four companies, not 50 companies.

There is a lot of examples of parallel behavior in the study. I think the breaks come from the weakest, where you see variation, it really comes from the weakest provider, T-Mobile, which shows the importance of at least having those four competitors.

Yes. I would say this study does go in the direction of suggesting that if you have a spectrum-based market, that not everything you might think is ideal will necessarily happen from having four competitors. I think that is where it takes you.

I also want to add, when you have competition, this is something that was mentioned in the panel, a lot of what we have here is really an issue of use of a termination monopoly.

When you look at the termination monopoly issue, this has barely been discussed, when you look at the use of a termination monopoly, that is they have to go through -- if

they want to get to you, they have to go through your carrier, and that is sort of a situation monopoly, not a general market monopoly, a different type of monopoly.

That is going to be a problem even if you have a fair number of competitors.

MS. OHLHAUSEN: Thank you. Christopher?

PRESENTATION OF CHRISTOPHER S. YOO, VANDERBILT UNIVERSITY

MR. YOO: Thank you very much. I wanted to add my thanks to the people who organized this. It's a wonderful forum because so much of this debate has happened in the Internet community, which has no awareness of competition policy/principles. It's not the world they come from.

In fact, some of it has happened in the communications community which hasn't been as firmly focused on anti-trust principles as they might.

Lastly, some of the debates in the FCC have not been as acutely aware of the basic insights that this agency has developed over the last 50 years, and I think this kind of forum can bring all that together.

What do I mean by that? I mean network neutrality traditionally has been about two things basically, competition, traditionally defined in terms of price and output, and its impact on innovation.

I'd like to discuss those separately and build in the insights from the economic literature on industrial

organizations, the Supreme Court's precedents and decisions, and in fact, this Commission's own studies about how these competition policies should be implemented.

What did we hear from the technologists, the economists, and all this, even from Tim? The consistent thread is that this is -- what do we know.

There is good and bad in here. Vertical integration, that is someone who has control over one stage of production, in this case, distribution, can use that power upstream to affect content markets for complementary services, in this case, content and applications.

They have also heard that there is tremendous good in this, that in fact allowing these sorts of partnerships and allowing customization and prioritization can make new things possible.

The question is what have we learned from this agency's work that would inform us? The answer is we have a 50 year history of studying vertical contractual restraints on vertical integration.

What we had was a world even as late as the 1970s, which was quite hostile towards vertical integration, that has changed into a world that is much more sympathetic, influenced in no small part by Michael Salinger's work when he was a Professor at BU, saying in fact, this can yield real efficiencies, real pricing efficiencies, the double

marginalization problems that Professor Salinger studied, and in fact, in the telecom space, there are certain features that can only be provided best on a vertically integrated basis.

Caller I.D. being one of the primary ones, because it's the computer that is the switch, that is the most efficient and cheapest way to do that.

I think it was John Thorne who said earlier the failure to approve that delayed that for a certain number of years.

We have a world in which some things should be best provided on a vertically integrated basis. This is the insight of unbundled network elements instead of loops. All this history of the FCC regulation has shown that as well.

What do we have in the world now? What do we do when it is sometimes good and it is sometimes bad?

We have gone from a world where the anti-trust laws says when it's always bad, you declare it to be illegal, per se. That is essentially you regulate it out of existence. A regulatory bar would be a very effective legality rule.

What happens if it's sometimes good and sometimes bad? The default rule in anti-trust law is what they call the rule of reason, which is case by case analysis, where you allow the practice to go forward until someone can demonstrate harm.

What is really interesting about this is there is some inspiration behind this which was technological change and economic progress needs some room to breathe. We could put the thumb on the scale of you can't do it unless you can show it's good or you can do it unless you can show it's bad.

You can say theoretically you have to give people that sort of space. In practice, the Federal Trade Commission has done some wonderful studies here. If you look at the enforcement activity, generally the study of the actual enforcement activity in the telecom sector, these are not the kinds of markets under the rule of reason in terms of the level of concentration that traditionally raised anti-trust concerns.

The FTC study says these various markets are not traditionally the kind that raise anti-trust concerns.

In a wonderful study conducted by this Commission that looked at vertical integration, all 17 studies that have ever been done in the published literature about whether it's welfare enhancing or not, of the 17, 16 found vertical integration to be welfare enhancing.

If that's the case, even not just as a theoretical matter, just as a matter of the historical record, and some of them are in the cable industry, some of them are related industries, it strongly suggests that given the empirical record, there is a good justification for putting the thumb

on the scale of allowing people to experiment with different things.

Another lesson from anti-trust law, we used to be extremely suspicious of protecting potential competition. What did we learn from the anti-trust law? Threats to potential competition are very easy to state and very easy to imagine, and often don't materialize, and you lose a lot of wonderful business models if you do a lot of proactive preventive regulation or prohibitions because of threats to potential competition.

Anti-trust law on the whole has become less sympathetic to that and said, you know what, unless there is something really pernicious going on here, let's let people experiment and wait for actual harm to be demonstrated.

I'm going to switch to my regulated industry hat. One of the insights of anti-trust law, perhaps best reflected by the Trinko case, is that difficulty of supervising regulatory decrees, and mandates of exactly this kind are not structural decrees where the FTC can come in and just make a change and then restructure the market and let it go on.

It generally required ongoing supervision by an anti-trust court in an essential facilities case, and you can pull any book, they are all saying that.

In fact, what it suggests is these sorts of anti-trust agencies and courts are not in a good position to do

that.

What regulated industries has taught us is that sort of rate regulation and price regulation works extremely poorly when the thing you are attempting to regulate varies in terms of quality, because then you can't just regulate price, you have to actually start putting on notions about what quality regulation is, and this has come out in cable television regulation and all these wonderful things, which I'm happy to talk to you about and is in my published work.

The last thing I would say is that we have learned in fact, these are two-sided markets. Basically, upgrades to the network have to be paid for either by consumers or by the server content application side.

In fact, we need to allow more flexibility on the server side, which means all those costs, as someone said before, would be born on the consumer side. Part of those costs should also vary based on who, which servers, which content and applications providers need those services.

If all you are sending is text, you don't need some fancy high powered service, you need it for multi-media. Forcing them to pay more for the upgrade that they don't need will simply knock a bunch of bloggers off the system. In allowing people -- forcing people to pay for what they are actually using and not forcing people who aren't using it to pay makes sense.

I'll throw another thing out there which is from the regulated industry side. It's called Ramsey pricing. One of the problems in the world that we live in is big up front costs, high fixed costs, low marginal cost businesses cause tremendous problems from an economic efficiency standpoint.

Why? You have to mark it up above marginal costs to allow them to recover a proportion of the fixed costs. Every time you do that, you lose someone who would be economically benefited if you allowed them to purchase.

What did Ramsey discover in the 1930s? Some people were very price sensitive, and if you bump them up even a smidgen, they will stop buying. Some people are very price insensitive, so even if you raise their prices severely, they will keep buying.

He said hey, let's load up the fixed costs and the people who will keep buying no matter what, the price insensitive people, and charge a smaller proportion to those who are price sensitive, and that's the most efficient way to recover fixed costs.

In other words, there is not just supply side price discrimination, but demand side price discrimination.

That is what I have to say about competition policy, although this all loops back together.

What do we have to say about innovation? The

Internet is not the same Internet that grew up in the NSF Net days. What began as a means for academics to exchange e-mail and trade files, as commercialized in the mid-1990s, and now the number of users has gone up and the number of connections goes up dramatically with the number of users.

Second, the way they are using it has increased dramatically in terms of the lengths of the bits, the packets, the streams, the tolerance for delay, and then in addition, the number of transmission technologies we are using has grown incredibly heterogeneous, especially wireless, which is really unique and quite different than the wired technologies.

A lot of the changes can be seen as a natural reaction of networks to try to deal with the increasing heterogeneity of the thing they are trying to manage.

Of course, they are trying new things because new things are being demanded from them. In fact, what we are learning is every protocol inherently favors some applications over others. TCP/IP, first come, first served, very good at some things, worse at others. In a sense, there is no neutral way to go here, by choosing one protocol over the other, you will actually be choosing winners and losers.

What is really interesting from an innovation standpoint is there are innovations that want a different routing protocol. If we try to shove it into too much one

way, you actually won't get those services.

If you ask innovators today, the ones that are in market or about to come to market love the network the way it is today. The threat is to the innovation that depends on a different one like Medtronic wanted to do heart monitoring, which they require guaranteed quality of service in terms of response time or else they can't do it.

The other thing is I'm sometimes accused of saying you say standardization is bad. Standardization is good. What I'm saying is commerce will tell you if there is an optimal level of standardization, and uniform standardization in all cases is not always the best thing.

In this case, highly standardized results are likely to be the case. If we have four players and one wants to experiment with a different architecture, if they are wrong, they will get hammered and they will come back to the fold. If they are right, it's precisely the kind of innovation we should tolerate and encourage.

This is from the perspective of looking at the AOL/Time Warner merger. We really don't know when business models win and lose. We can only find that out in the hard realities of the market.

I have an argument that for, those of you who are familiar with monopolistic competition, in fact, allowing people to diversify what they offer allows specialty stores

to survive in a Wal-Mart world.

In other words, even if they are at a cost and volume disadvantage, targeting the smaller group of customers who need a particular set of services particularly highly, can allow you to survive even though you are facing a bigger competitor.

The flip side is if you don't let them to do that, you are just commodifying bandwidth in ways that will reinforce -- allow them to compete on price and network size, which only reinforces the advantages enjoyed by the biggest players.

This all cycles back, which is forcing someone to share the network will actually -- the data -- there is OECD data looking at whether unbundling has encouraged broadband deployment or not. The evidence suggests that it doesn't.

The other examples of things that come out of the investment numbers we have heard, and in fact, if you look at the post-Brand X, that's when all the content and application providers started pouring money into alternative services.

I'll say one last thing. People are saying, "Should we keep things the way they are?" There is a word for this. They called it the precautionary principle. We don't know what the world would look like if we are different, we should keep things the way they are.

What is interesting is there is an academic debate

that says in fact, privilege in the status quo is kind of unprincipled because there are risks to keeping things the way they are that can be just as important as the risks of changing things.

You have to have a reason for putting a thumb on either side before you say let's just keep things the way they are. What's emerged, you can look at the empirical data, this is vertical integration generally is beneficial, so we should be permissive. The other side, I would say there is an argument that you should only do it for things that are catastrophic and irreversible.

As important as I think these things are, if you look at the break up of AT&T and the reconfiguring for equal access, we have been able to go back and forth on these things, and as important as they are, I don't think they meet the kind of threshold that we are talking about.

MS. OHLHAUSEN: Thank you. Christopher, I certainly have to agree with you that in general, it's very hard to foresee the future and what's going to come.

My sister happens to be a computer science Ph.D., and in the early 1990s, she told me there's this thing, I don't even know if she called it the Internet, but she said, a computer network where people doing research can get access to each other's research, and we have these things called pages, where our CV is on it and our research.

I thought to myself, boy, that doesn't sound very useful.

(Laughter.)

MS. OHLHAUSEN: That's why I'm still working for the government. That brings us now to David.

PRESENTATION OF DAVID SOHN, CENTER FOR DEMOCRACY & TECHNOLOGY

MR. SOHN: First, I do want to thank the FTC and Maureen for hosting this event and inviting CDT to participate. We very much appreciate the opportunity.

What I thought I would do is say a little bit about what I see as the core goal here, and then offer some thoughts about what an appropriate framework would be for achieving that goal.

I think some of the themes that I'm going to hit will sound somewhat familiar to folks who have been here for the last two days. Certainly, a lot of arguments, I think, cycled through.

I'll just start by offering the premise that neutrality, this whole neutrality debate, is not just about preventing bad behavior and abuses. It's also about preserving something that has proven to be extraordinarily beneficial, and that is this network structure that greatly facilitates independent innovation and also independent speech.

This point has come up on a number of panels, but

just to reiterate, the Internet allows a small innovator or speaker to offer content, services or applications to any interested Internet user, and the key point is without having to get any kind of permission or strike any kind of deal with the ISPs of the different users it wants to serve.

That's not to say that the Internet is completely egalitarian, as Phil Weiser pointed out on an earlier panel. This isn't some egalitarian utopia where money plays no role, but it does keep transaction costs low, as I think was discussed in a panel yesterday, and it keeps the barriers to entry low.

I think it's important to point out this kind of open network is not something that the marketplace often initiates in the absence of regulation. Builders of private sector networks when they go to build networks have tended to prefer to retain some higher degree of control.

Tim mentioned that the Carterphone cases under which the FCC required AT&T to open the phone network to third party telephone devices, he also talked about what's been going on in the wireless networks that have been built, and certainly the cable networks when they rolled out weren't open in the way that the Internet was.

It so happens that this thing called the Internet was created in an academic context with government funding and riding on the telephone network, and maybe in part

because it was developed in that kind of context, it was open to independent innovators and speakers in the ways that a lot of other commercial networks are not.

I'd also add that openness was reinforced by the fact that in the narrowband world, there was a huge number of competitors for the narrowband ISP market.

The results of all this looking around should be pretty apparent, right? The Internet unleased a wave of innovation which was driven by small inventors and entrepreneurs with no connection and no deals with the major network operators.

Just to tick through a couple of examples, which again, I think are pretty well known. The worldwide web, web based e-mail, instant messaging, secure sockets layer, more recently Google started by a couple of graduate students, YouTube became an overnight sensation.

You could make a really long list like this. You could go on and on. The point is the Internet has fostered innovations that create a huge amount of both economic value and also non-economic value. The Internet, as I think Harold Feld touched on, it's facilitated speech. It's facilitated new collaborative ventures, like social networking and Wikipedia.

There are a lot of both economic and non-economic value there, and it is linked to the networks' openness to

independent innovation.

I would argue based on just the experience with the network to date that society has a very strong interest in ensuring the continued availability of this kind of open network, because the beneficial spill over effects to both the economy and society appear to be very large.

Having said all that, that does not mean that this is the only kind of network that should be allowed to exist or that experimentation with other models should be banned. It just means experimentation with other approaches should not be allowed to crowd out the structure that has been the source of so much innovation.

To use an analogy, I've sometimes heard in these debates people talk about the Postal Service and premium delivery services. Yes, by all means, a premium delivery service like FedEx should be allowed to exist. You shouldn't regulate that out of existence.

At the same time, there may be a very important policy objective of maintaining ordinary Postal Service delivery at an acceptable level of service. That, I think, is really what the goal ought to be here, to keep this neutral open Internet at an acceptable level of service, to keep that in existence even as experimentation with other networks and private networks, as discussed in the previous panel, even if that kind of experimentation proceeds.

If that is the goal, what kind of framework is needed to achieve it? First, I think relatively straightforward and at sort of the more blatant end of the spectrum, there is the idea that an ISP could simply block access to selected sites or services.

I think we have heard repeatedly over the last couple of days that network carriers have said they have no intention of doing that. You also have the FCC principles that seem to target that fairly directly by saying that users should be able to access the lawful content and services of their choice.

I think competition law could come into play there as well, particularly if the blocking was blocking of sites that were competing in some way with the ISP's own affiliated services.

I do think that having said all that, it might be useful to establish with greater legal clarity that blocking won't be permitted and in fact, enforcement tools will be brought to bear against it.

Where the rubber really hits the road in this whole debate, I think, is discrimination short of outright blocking. Short of outright blocking, ISPs could engage in various forms of discrimination, and the fears that could have the practical effect of driving innovators to really have now a practical need to seek deals with each recipient's

ISP.

It's not that they would find their traffic as outright blocked, it's not blocked exactly, but they would find that in the absence of striking that kind of deal, their services just aren't being delivered very effectively and they have trouble delivering the service at the level of quality that they'd like.

Here, too, I think there is a potential role for competition law and potentially for the FTC, for some types of discrimination. For example, if an ISP were to purposely degrade delivery of certain traffic in order to create competitive advantage for its own services, sure, that clearly could implicate competition law.

I think that certainly anti-trust remedies can be slow and cumbersome, and for some new entrants, that is not going to be a very satisfying remedy.

I think there is also another scenario to worry about, which is activities that don't on their face appear anti-competitive necessarily.

What if an ISP simply starts striking lots of deals for priority treatment with lots of different content providers? That becomes sort of the standard way of doing business. Those deals become common place enough that in fact ordinary unprioritized traffic now finds its performance heavily degraded because it's in the back of the line behind

lots and lots of prioritized traffic.

It's not clear to me that individually those kind of deals would run afoul of current competition law, but I think their cumulative effect could be to produce exactly the kind of result that I'm suggesting we should try to avoid, namely, making deals with all the recipients' ISPs as a de facto on necessity for someone trying to enter the market.

Again, this is a point that has come up several times, but I think it's really important. If that kind of web of deals were put in place, it seems to me it would be very difficult to unravel it after the fact, once all the investments have been made and all the business plans have been built.

If that is an outcome that policy makers want to avoid, it seems to me a clear signal needs to be sent in advance and it would give a lot more certainty to the marketplace to do so.

My view for framework is because of all this, there may well be a benefit to some new legislation in this area. I don't claim to have all the answers for precisely what it should look like.

It should deal with both the question of blocking and the question of discrimination, and that it could potentially have a transparency component as well, but just as important, I really want to stress this, it would need to

be very carefully targeted and you would have to be very careful to avoid creating a burdensome and bureaucratic regulatory regime.

I think there are a few ways that it might be limited. Number one, it would have some limits on its scope. I would argue its scope should be limited to consumer class broadband Internet service. It wouldn't have to apply to or preclude other services offered over a broadband provider's network.

If you look at the AT&T merger commitment, it takes exactly this kind of approach, it excludes enterprise managed IP services. It excludes IP television services.

There would be some scope limitation.

Second, it wouldn't need to take the form of a full common carriage regime. Some people have talked about price regulation. I don't think there is a need for any regulation on the prices that ISPs are charging end user subscribers.

They can develop different tiering arrangements for different kinds of volume or throughput, all of that should be fine. It shouldn't need to be interfered with.

Third, it wouldn't need to involve a complete ban on all prioritization, even on the Internet part. I think in particular, an ISP should be free to offer prioritization capability that enables subscribers to choose what services to use it with.

If there are some applications out there that would like to run on the Internet but would need some priority, I would say absolutely, let subscribers have the option of buying a prioritization capability that they then decide what ISP provider or what other application provider they'd like to use it with.

Finally, I also think anything in this area should avoid granting just open ended regulatory authority to an agency. Clearly, there would need to be some enforcement authority by an agency, probably the FCC or FTC, but I do think the basic parameters should be set forth in statute rather than just an open invitation to go forth and do whatever seems right with respect to the Internet.

Just to sum up, I do think the goal of all this is not to create some radically new principle, it really is to preserve something that's been the status quo on the Internet.

I think the lesson of the history of the Internet is that it is important to preserve this and waiting until it's too late would be a mistake.

Thanks.

MS. OHLHAUSEN: David, I just wanted to follow up on your vision with tiering. I think I understand you to say tiering is okay as long as consumers are willing to pay more for the tiering, to get certain services delivered more

quickly.

If most consumers preferred that and ended up paying more, so that you ended up with a low grade tier that many people didn't use, would that create problems for you or simply the fact that it's consumers who are making this decision to greatly prefer the tiered services would that take care of your concerns?

MR. SOHN: Yes. I think so long as the decision rests with the consumer. The consumer and the ISP can work out between themselves what level of volume or throughout the consumer wants to buy, if the consumer finds a certain amount isn't adequate, they can upgrade.

I think if there are special add on services that provide a temporary capacity boost or something like that.

I think there is no problem with that as long as the consumer can really choose whatever suits their needs and is free to use that with whatever services and applications the consumer chooses to use.

MS. OHLHAUSEN: Thank you. Now, we have George.

George?

PRESENTATION BY GEORGE S. FORD, PHOENIX CENTER

MR. FORD: I'm going to take a slightly different tack. I'm not going to really propose anything specific for network neutrality legislation. I didn't think that was what this panel was about.

Rather, I'm going to talk about policy and how the policy debate might be improved. The first thing I've noticed from this event, and I've been here for the past two days, is that the network neutrality debate is totally transformative, in the sense that lawyers are now economists and engineers and economists are now engineers and lawyers, and engineers are now engineers, lawyers and economists. The engineers always stick close to what they do, but deviate every now and then. They are the smartest of us all, so I guess you have to give them some room for that.

What happens a lot of times or most of the time, I think, in this debate, is that people get out of their area of expertise, and some nonsense comes out.

For example, a firm offering a low quality, low priced product and a high quality, high priced product, it's not price discrimination, and the economics of price discrimination is not going to be terribly informative on that issue.

If a firm chooses to do that, they generally would not choose to offer low quality product at a low price only. Imagine if the broadband providers called everybody up today and said here's what we're going to do, we're going to raise your price $5 and cut your bandwidth in half.

That would not be a profitable strategy. Yet, some people today seem to think, and yesterday, think that's a

profitable strategy. It's not. It's because it's not economically informed, the arguments are not economically informed, generally because the people giving the arguments aren't qualified to talk about economic arguments, and I'll discuss that a little bit more later.

The economists are just as guilty. The market is not contestable in any sense of the economic use of the word.

I'm not even sure that would be good if it was contestable for the people who are making the arguments regarding investment, if investments can be immediately retrieved upon entry and exit, does a rule really hurt you that bad. I don't know. It's the chunkiness in the long lived investments that seem to make the issue more relevant. I'm not sure. I haven't worked through the math yet. That seems sensible to me.

I also heard yesterday that the local market for broadband is global. I think that is kind of a strange argument. The economists who are being lawyers, those economists being economists, economists being lawyers in reference to Trinko, the Trinko decision applies when there is regulation.

You are not protected by Trinko today. If we pass network neutrality legislation, then you are protected by Trinko. Keep that in mind when you argue about this issue.

Also, the notion of sabotage, and I think that is

really what a lot of people are talking about, and we call it "discrimination." Nobody defines that. I think really what we are talking about is sabotage or some kind of leveraging strategy.

Sabotage is generally and certainly in the economics literature a result of regulation. It is not something firms do for fun. It's not something firms do for profit absent regulation.

The sabotage that we observed in the UNE world, as we have discussed in Phoenix Center policy papers, was the consequences of regulating the price of unbundled elements below the opportunity costs of the phone company. I didn't say below costs necessarily, below opportunity costs, what they view their costs to be, not what the social cost is.

In competitive markets, that's fine if they want to charge that. That's the efficient component pricing rule, which is efficient under certain conditions.

When you think about the sabotage, and I think we should start using the proper terminology, if I'm going to wipe you out, say the Madison River case, I'm just going to preclude you from this market. Why did they do that?

Because they are regulated to the hilt. If they could have said I'm going to offer you for $20 a DSL package that blocks port whatever, where you can't get Vonage, and offer you a $25 package, then there would have been no

sabotage. That is the deal they were willing to take.

You say, well, that's horrible, and we heard some people say that was horrible yesterday. That depends on what that $5 measures. Even if we had God herself running the network as a social planner or social welfare maximizer, we would observe that behavior. If somebody could do it more efficiently, I will sell you the right to do it.

It's not a bad thing, per se. It could be bad under certain conditions, usually when there is monopoly markups. There is going to be markups in this business. It's a fixed cost business. Price doesn't equal marginal costs. That will never go to zero.

Just the general consternation about duopoly, that started in the FCC in 1994. If somebody would have sat me down and told me there that what we are going to have is a duopoly in telephone, a duopoly in high speed Internet, but really fast Internet, and a duopoly in video, we would have had a party.

That is just the best of all worlds. When you think about this market structure, and you should read Policy Paper No. 21 by the Phoenix Center, which doesn't tell you what to think, it tells you how to think about the issue, this is generally going to be a concentrated industry, and you need to think in terms of that and realize that is not necessarily a terrible outcome.

Duopoly is not the same as monopoly, except for people who used to complain about monopoly and didn't get what they want, so now they are going to complain about duopoly and are not going to get what they want, and now we have five firms of the business, and we are going to complain about that.

In general, this is crazy. Markets do not guarantee that you are going to get what you want at the price you want to pay. Claiming this is not what I want is irrelevant.

I think it ought to be like this. I think my gym, my health club, should have a dry cleaning shop and wash my car when I'm there. They don't do that. Well, there is only three of them within 30 minutes of my house, that must be the problem.

No, it doesn't work that way. You just don't get it. The economic incentive, like the Carterphone discussion. Talk about context. Carterphone, that was a decision about a vertically integrated highly regulated monopoly, where as regulated local phone, if you just said, look, you can raise your phone rates by a few dollars and give away the equipment market, they would have probably said fine, I'd be happy to do that.

I'm only using that market to try to get more profit because you won't let me get it all here in the local service. We want to apply Carterphone to an industry that's

not vertically integrated, that's not regulated, where we have a competitive equipment market upstream, which is the end result, and calibrate our phones.

Can you plug the phone into an R-11 jack? You can't. Can you plug a Skype phone into an R-11 jack? You can't. I can't plug my cell phone into an R-11. There are plenty of phones that don't plug into that thing.

Every phone I get from Sprint, I can use on Sprint's network. Who is to say that Verizon, with their fiber network says you know, this connection is not very good, we can improve service with another connection.

Is there going to be a ruckus about that? I don't know. Should we stop that? I don't think so. It's not like the old days where you have a connective device, right, which exposes the problem of regulation.

The Carterphone decision, we will allow you to do it but you have to buy a connective attachment, this little thing that protects the network, right? I'm just going to get all my equipment rents from this little thing. I'm willing to do that.

You have to understand the economic incentives to talk about economics. I think what this argument really, really needs is some discipline.

First, don't talk about things that you don't understand. That's number one. It's not that lawyers can't

do economics. Make the connection, the nexus direct. Don't just make stuff up.

You can't prove leveraging or to sabotage without a very sophisticated mathematical model. All the easy ones have already been done. If you have a new one, it is going to be very subtle and it's going to be very complicated.

The general rule that I think everybody in this room should accept, and I'm going to miss a few, but I think this is a pretty good rule, if you can read it and understand it, it's wrong. Even the Ph.D. economists generally has to stare at these things for days, and even still might not really understand the subtlety of the argument.

There is a famous paper on sabotage that was published in a highly respected journal, and it is probably the most cited paper on sabotage, that contains a serious and fatal mathematical error.

An incentive to sabotage the firm, in that paper, only occurs when output is negative. Someone forgot to check. Even economists, even with the sophistication of their tools, get it wrong sometimes.

A verbal discussion of undefined terms is not generally going to give you any information.

Let's get specific. If you want to call it "discrimination," what does it mean? When you describe it, think of an economist who says I've got to model this. I

have to write a function out for this. What is "discrimination?"

What is a complementary product? What does that mean? Does it affect the demand for this, does it affect the demand for that?

You have to define what you mean by these terms, and if you are going to make an argument, prove it, either have a story, either keep your argument so simple that basic economics covers you, like on Ramsey pricing. It was a very nice statement of Ramsey pricing. He didn't push it too far and say there is some result here that's kind of unrelated but this is proven by this argument. It was just a simple statement.

You can certainly do that. Don't just make stuff up, because that's where you are typically wrong and the reason economists actually do all the math is because they are wrong, too, in their head. You write this stuff down, a lot of times, oh, man, what was I thinking, that was a stupid idea.

I don't really don't care what you want. I don't think any of us should care what you want, how you want the market to work. The question is is there a market failure.

The fact that you don't like the result is not a market failure. I don't like the fact that the seats recline in airlines. That's tough.

Tell me any business, any of you sit here and think for the next ten minutes, one business where you get what you want at the price you want to pay. You will not think of any.

People who complain about things, like developers, if you watch the show where people go into Wal-Mart and they try to get their product to be carried by Wal-Mart and they don't and they cry because they can't make a business if Wal-Mart doesn't carry it, or American Idol. People come on there and they can't sing a lick, but by God, when they walk out that door, they think they can, when they walk in and walk out, they think they can.

Does the fact that they complain and can get it off a blog mean Simon really is an idiot? I don't think so. You lost. That's not what our business does. We are not in that business.

I've been in the telephone business. The idea that you have an infinite number of telephones on your network, wireless network, is insane. It's insane, because every product has to be supported.

Your personnel has to know how it works, how to program it, how to service it, how to repair it, all those, keep batteries for it, keep pockets for it. You have to do all these things.

It's just too complicated. If you ever worked for

a telecom company, you realize how complicated it is to make the most trivial adjustment to your product. It is exceedingly complicated. Even if there is just a billing issue. It is so complicated.

Just change the billing. That will take us six months to do that and half a million dollars.

Just be careful and be specific and don't get out of your bailiwick too far as possible, please.

MS. OHLHAUSEN: Thank you.

QUESTION AND ANSWER SESSION

MS. OHLHAUSEN: I think I will give Tim a chance first. George, I think you made some specific references to some of Tim's presentation. I will give him a chance to weigh in first, and then we can kind of go through the panel if anybody would like to comment or just weigh in on some of the things the panelists have raised.

MR. WU: I want to actually comment on -- this will be a very general comment on George and Christopher's presentations.

One thing I think in general, I think if we apply traditional anti-trust principles and some of the economic models we have seen in this area, I think we may end up with industries that grow at the rate that we have seen with a lot of the traditional areas where we have let anti-trust apply.

What I think what we won't see and what I think

what we are doing here is we are trying to understand why certain markets, like the PC market and the Web market, have been growing so fast. What is it that's happening here and why exactly -- what is it in the technology, what it is in the design that is fostering both this giant level of consumer surplus that we have seen, this phenomenon, and also just the raw economic growth we have seen from these sources.

I don't think anyone in this room really understands that question very well. I think economists flatter themselves if they think they can come up with existing models to cover all these kind of situations.

I think there are areas we don't understand well. I don't pretend to understand them well. I think we know empirically that we have seen something strange in these industries, that some industries are growing very fast and other ones aren't growing at the rate we would expect, and I think that is what we are trying to do here, to understand whether there is something important in the design.

A lot of people in this room and in D.C. are, I think, reasonably suspicious of centralized planning, suspicious of command and control strategies.

Why they are not suspicious of those strategies when they are practiced by the Bell companies and when they are practiced by the cable companies? There are central planners in these networks. Bad central planning decisions,

like I think we have seen in the cell phone world, do have adverse consequences.

You can decide if it's the FCC who is doing it or it can be other entities that are doing it, but central planning as opposed to decentralized planning comes at a cost. I think that is something you can see well if you understand the technology in this area.

I would also like to make a specific comment for George, Mr. Ford. I agree that we should stay within our competencies, and I would like to ask you whether you feel or how well you understand the design of the Internet protocols and the various technologies surrounding the Internet, and you feel you are competent to talk about them?

MR. FORD: I've never talked about them and I've never written a paper about them. I write about economics and I write about law, because I write papers with lawyers, and that's the level that I deal at.

I'm not an engineer. When an engineer comes in and tells me that this is possible to discriminate, I generally believe him. I'll probably check with another one or a couple of them to make sure that's true. It certainly sounds plausible to me.

I'm not in the business. You can look at -- you are more than welcome. Phoenix Center's work is free for download, go look at it. We have written a number of papers

on network neutrality. We propose a problem. We use a mathematical theory to prove it or empirical measures to prove it. It's there. If you want to criticize the work, we are more than happy to put it up on our website right next to the paper, and we will respond to it if we need to.

No. I'm not an engineer and I'm not going to sit here and say I know how it works.

MR. WU: I understand that. My point here is the facts here matter. If we don't know what the facts are, how can you apply a working economic model if the modeling isn't in fact the facts that are here. That's what I'm saying.

You have to understand the technology. There has to be a certain level of understanding of the technology. I have a background in technology that I bring to this table.

I focused my comments. I didn't focus on the economics, just on the facts of what's going on. I think we see a big factual difference between the kind of innovation we are seeing in cell phone applications and web applications.

I think it has a lot to do with the technological design of the network. I think we need to understand why that's going on, and that's what I'm bringing to the table.

MR. FORD: The technical design of the network, I'm certainly more than willing to leave that to an industry that has by your own admission produced competitive prices. That

means they are certainly not colluding to do anything harmful to consumers. I'm not ignorant of the network. I've worked in telecommunications firms and bought circuits and built models and helped our engineers build switching models.

I'm not an expert in that field, and I'm not going to argue with Vint over Internet design because that is his expertise. I'm more than happy to hear what he has to say, just like I'm more than happy to hear what lawyers have to say about law and engineers have to say about engineering.

Engineers and lawyers can advise economists on ideas, certainly, that's true. You should be careful and do your research when you talk about ideas, talk about telecom history, and why it is that certain rules were applied.

MS. OHLHAUSEN: I'd like to give some of the other panelists a chance to weigh in. David or Christopher?

MR. SOHN: I don't think I want to get into the back and forth of different expertise going on.

MS. OHLHAUSEN: You don't need to do that.

MR. SOHN: To sort of bring it back to just to the basic question of whether some kind of action might be necessary here, Christopher pointed to the break up of AT&T as being kind of the model of how we could go forward if we don't regulate here and could address the problem afterwards.

I think there is lots of uncertainty here, and I think this back and forth does indicate that. George said

economics involves complicated mathematical models, that if you can read it and understand it, you're probably wrong.

That suggests to me that we are probably not going to get definitive answers to all the questions that we are wrestling here today from mathematical models. I don't suggest that we get it from any of this debate, because none of us are going to be able to predict exactly what the future holds and how all this is going to play out.

That does lead us back to the place of trying to figure out, we see some potential threats, we see some potential threats on both sides. There is some risks of regulation. There is some risks of not regulating. What should we do at this stage?

I guess when I think about the risks that a neutral Internet is allowed to be frittered away and then we have to try to pull it back with something on the level of complexity of the break up of AT&T, I'm very concerned about whether that would actually happen.

MR. YOO: What's interesting to me is we used to have a vision of competition which was vertical integration, mix and match. The parts suppliers can sell to any of the auto manufacturers and they can deal with any of the retailers.

The teaching of the last 50 years of vertical integration theory is there are just different ways to

organize an industry. What's really interesting to me is think about the example that Tim makes, cell phones.

I do think with Carterphone, we don't have a monopoly, they have choice, and not only that, the integration between hand set and service has to be a lot more tight.

For example, one service that some cell phone manufacturers are experimenting with is when you walk across the room, you get hot and cold spots based on the wave propagation. They will hold onto the stuff that's not time sensitive, like your data, and they will keep sending you this stuff that is time sensitive, like voice. Until you get to a hot spot, then they will dump it to you all at once.

To do that, you have to have a pretty tight integration between device and network, and they have to do some interesting validation.

The other point I'd make is the break up of AT&T is about inducing competition in long distance, regardless of who your last mile provider was. I don't have a choice in the cell phone world any more. I'm locked in when I choose that. I get a bundle and it's very competitive, in fact, so competitive, no one can make money doing long distance any more.

I see two different ways of organizing it. If you were concerned about the kind of foreclosure aspects, it

doesn't lead you to a general network neutrality rule. If you are worried that people are going to favor their vertically integrated content, you wouldn't say, therefore, you have to run everything, you'd just say, well, if you are a cable company and you offer cable, you can't discriminate against IPTV.

There is no story there about why they would discriminate against -- a cable company would discriminate against VoIP or a DSL provider would discriminate against IPTV.

That's a God send to them. What do you end up talking about? Expropriation, as we heard earlier today. Expropriation is not determined by the vertical integration, it's determined by the number of options you have. The more options you have, the lower the prices you pay. That's your bargaining power.

Vertical integration in this case, network neutrality will not give you more options in terms of broadband suppliers. I've got two choices, DSL and cable modem.

It's not about expropriation of the consumer. It's about expropriation between content providers and network providers. That is exactly the kind of bargaining -- that is all about bargaining power. That is not a policy issue, in that traditionally, we have left that to markets because we

shouldn't be picking winners and losers in bargaining power spaces.

The last thing is what do you do with uncertainty? I think you just let people experiment. You adopt a series of rules that doesn't forbid anyone from trying a particular practice. It's network diversity. In fact, you tolerate the fact that different owners might be trying different things at the same time.

I think that competition policy has taught us what you do when you are uncertain is not to tell anyone they can't do anything unless it's so bad, if they even try it, all life on earth will end as we know it, basically.

The thing is it's not clear. We can have a discussion about that. The question is if we allowed one network provider, one wireless provider, to expand prioritization, I guess if we have four network providers, it's unlikely to lead to harm and stopping them from doing it might be worse.

MS. OHLHAUSEN: I wanted to ask a more general question, kind of stepping aside from no, network neutrality or yes, network neutrality, or some other paths that may address some of these issues that we have been grappling with.

I wanted to get the panelists' comments on whether changes in spectrum policy could obviate some of the concerns

that network neutrality proponents have, and your views on incentives to build more bandwidth.

David talked a lot about, for example, sort of the public externalities of the Internet, so that the benefits that extend beyond the economic. Is this some kind of basis on which there should be more subsidy for that, for more bandwidth or however you build it out, whatever way, is that helpful or is that not helpful, doomed to failure, or just simply not enough?

MR. YOO: I think more spectrum would be incredibly helpful. What does vertical integration theory tell us? A vertical chain of production is only efficient if every level of the chain is efficient, is competitive.

What does that mean? Vertical integration policy should seek to find the level of production that is the most concentrated and the most protected by entry barriers and an attempt to de-concentrate that.

For us, it is not backbone. It's not the ISP on the business side. It's not content and applications, which is already the most competitive and the least protected by entry barriers, it's the last mile.

If you take that as the analysis, in a way, the debate should be not about how do we protect content and applications but really how should we induce competition in the last mile, and basically, ever since Brand X was decided,

all these content and applications and device manufacturers have been pouring money into alternative broadband, and the OECD data suggests the same.

MR. FORD: I think allowing people to create products is very important and certainly improves the communications packages available to consumers.

Wireless could be a complement or a substitute. I don't know. Wireless telephones are sometimes substitutes and sometimes complements to standard telephone services. It's not clear.

What is clear is that if you get some wireless and you get one, maybe two competitors out of it, that the debate will not stop. Public policy will continue on network neutrality.

Does it solve the problems in networks that are complained about in network neutrality? Maybe.

Let's say it's yes, will it stop the debate? No, it won't, because today we found out that network neutrality is about unbundling from EarthLink. We can append all kind of things to the network, or I just don't like the way this market looks, it doesn't suit me. I want something more. We have heard that today.

This brings me to a somewhat related point, which I didn't get to mention earlier, and that is some people need to stop arguing about the economics of this issue. We have

some issues about privacy today.

I don't care what the economics is and what the market structure is and how many competitors you have. Privacy is an important issue.

Why get bogged down in economic argument debates and attacking duopoly and all these things you don't know, just cloud the minds of people and say privacy is important, I don't care what. I don't care about any of this.

Democracy is important. The First Amendment is important. Clear of all these incentives to discriminate, clear of all these incentives of sabotage. Free speech is important. We need to keep an eye on it. Why not argue that?

I just wonder why Harold Feld keeps arguing about the economics. He doesn't have to go there for his story. It's privacy. The guy from Texas, we don't have to go there for that story. They are legitimate independent of whatever incentives we could come up with in this business.

AUDIENCE PARTICIPANT: Harold is not here to defend himself. He talked about values and freedom of speech repeatedly.

MR. FORD: Yes. Let's talk about that. That has value itself.

MS. OHLHAUSEN: Please do not just shout things out. Thanks.

AUDIENCE PARTICIPANT: Excuse me.

MR. SOHN: I think I will just echo what both the other panelists said. I think changes in spectrum policy have a lot of potential. I think in general, absolutely, it's worth considering and having a full debate about what kind of policies could promote more bandwidth deployment.

I think it would be particularly useful to focus on deployment of sort of ordinary Internet access that's neutral and has some of the benefits that I've talked about, but you know, other services being rolled out, too, is beneficial. I think having more spectrum available creates a lot of avenues for all of that.

MR. WU: I don't really have that much to add to spectrum, except for the way spectrum is used as a rhetorical tool. I think this relates to what Mr. Ford is speaking about.

The reason I think people start talking about competition is you will have people come up here and say well, because of the spectrum options, you know, in no time flat, this will not be a problem at all, so therefore, this should never be discussed, and we shouldn't expect and worry about any of these things.

People are put into a lens where they feel, well, you know, if there is going to be competition in this market, then there can't probably possibly be any social problems.

That's just not true. As you just pointed out, there may be fraud problems and privacy problems, there may be all kinds of problems that show up, whether or not we have these miraculous spectrum options or not.

I also think there is a certain level of disingenuity or maybe that is not the right word, but there is this tendency to look at something that might happen in the future and say for that reason, we can't talk about the present.

John Thorne was here earlier and he was saying, well, you know, broadband over power lines is spreading across the country like wild fire. I have been hearing that for ten years. I've never met anyone who has a connection, broadband over power line, and it has been used a million times to say therefore, you know, what are we even talking about here. I've never met a single person in my life.

Does anyone in this room have broadband over power line?

AUDIENCE PARTICIPANT: (Inaudible.)

MR. WU: Does anyone have this? Why do we allow that kind of discussion of that or spectrum options to kind of distract from the debate, and which I think is right, about what kind of networks this country should have.

These are innovation policy issues and they are infrastructure issues. I think they are marginally

competition issues.

The reason I think we talk about it is it is kind of crazy to talk about these options and so on as if they are sort of a pressure gauge or some relief for any kind of potential problems that might show up.

MS. OHLHAUSEN: To the extent that people are saying the problem is the lack of competition in the last mile, and if there is entry about to happen or a sufficient amount to discipline what a wireless provider can require or offer its consumers, isn't that relevant?

MR. WU: I'm not saying -- it's obviously relevant how many market players there are. I'm just saying it's dangerous to look at broadband sources that are potential possible future sources and over emphasizing this as if they are here right now, or to look at entities that are under one percent of market penetration, if that, and say you see, we have no problems whatsoever.

MR. FORD: I have a problem with that. I think you are right to some extent that there is a lot of exaggeration and I think it's 2,900 broadband power line subscribers today.

You have to remember that the history of cable regulation and franchise reform was based out of overbuilds in less than two percent of markets.

Just because it is in some places and not in others

doesn't mean it's irrelevant. We learned something from that limited competition. Cross sectional variance is very important to understanding problems because theory often doesn't give you a solution. You need empirical evidence.

If we observe, for example, that AT&T or Comcast behaves differently in a market where there is a broadband provider or it behaves just the same, price doesn't change or anything like that, then we can say something about the market where the guy is not.

If price doesn't go down with the addition of a competitor, the duopoly provided you with the full benefits of price competition.

It's not irrelevant. It can certainly be over blown and over stated. It's not irrelevant. I used to say that about VoIP. VoIP is always around the corner. It's always around the corner. We were trying to buy this stuff and nobody could provide it to us, and bam, all of a sudden, it was there. That kind of came quick.

It really put an end to the whole unbundling regime, I think.

MR. WU: No, I agree with that.

MR. YOO: The Commission has a framework for evaluating these claims. If you look at the anti-trust merger guidelines, they say hypothesize a five percent increase and everyone who comes in in two years is part of

the market. In fact, in a world where Sprint is making a multi-billion commitment to come in by the end of 2008, that's a reasonable time frame to have.

I once wrote a paper thinking satellite might be some help, and I'm much more humble about that. I'm humble about technology generally.

I guess my point would be if we are going to be skeptical about the potential de-concentrating benefits of entry, potential competition applies to that and also the threats to competition as well, in that they are equally contingent.

I guess the reaction to the rule of reason says let stuff happen until someone shows an anti-competitive effect, and that includes both entry and to try to hypothesize what is going to happen there, but also the anti-competitive practices, allegedly.

MR. WU: I was really objecting to the exaggerated use, of which I think we both agree, you just point to 2,900 consumers and say therefore, this problem with consumer fraud can't possibly exist, it's going to go away, whatever, or privacy, whatever problem you want to talk about.

MR. FORD: There is a long history.

MR. WU: I want to address your second question, which I think is really interesting and one on which we probably are not going to have a lot of time to discuss.

This question of who is going to pay for what. I think that maybe the next generation and maybe what people in this room should start thinking about, network neutrality, is this question of pricing.

Someone wrote a great paper on this. Unfortunately, I reviewed it anonymously. I have no idea whose it was. Maybe it is someone in this room.

There are a lot of similarities, if you study this properly, between the questions here and the questions of pricing in general in telecommunications.

One way of putting this is the Internet has grown naturally for some reason, maybe by design. It is a born "bill and keep" system. The way it is now is that Google has an ISP. It pays several millions, maybe billions, but probably tens of millions of dollars to its ISP. That is its customer, that's who it pays.

On the other end of the network, you pay your local ISP somewhere between $30 to $40, something like that, for access to the network. The whole network neutrality debate or at least the prioritization is about whether your ISP can charge a termination fee to Google. That is what it is all about.

A lot of this prioritization, complicated word, "discrimination," a lot of it has to do with whether or not termination fees could be charged. I think there are a lot

of strong arguments for "bill and keep" in general, and you can keep a form of price regulation, you can also say it's a big zero, that is you are not allowed to charge termination fees. You have to allow them -- you have to allow the customer to reach you.

I think that sort of maybe a useful direction for this debate to go is to ask whether or not we want terminating -- companies that have terminating monopolies over their customers, companies that have their customers, to be able to charge, if we want to reach those customers, which is the same issue we are facing in other areas, and maybe that is a very useful way of thinking about this.

Who funds the network? We have the same question. I think there are -- I could be wrong. I am interested in what people have to say about this. I think there are distortions that are introduced when you have companies charging people who are not their customers.

MR. FORD: I think you run into a huge problem when you just outlaw an entire class of commercial transactions.

I can see the content providers have this fear. There are certainly cases where those fears may be based on legitimate economics. I also see opportunities to get something that they might want through some kind of transaction with a provider.

If you make the rule very broad, if you look at the

current proposals, AT&T couldn't contract with McAfee to provide a virus software, despite the weirdly added appendage to the end. I'm taking this from my lawyer, by the way. You couldn't do it, because that would be an exclusive arrangement, and that includes the applications available on the web and virus software is an application available on the web, so they can't -- I have to deal with everybody and it costs me money to do all this.

It is not obvious that it's a good thing, in a blanket way. To say we're not going to do anything, is that too far the other way. We have to find some middle ground here. What's the middle ground? I think in the end let's see what it looks like. I don't know where the line is, but I'll know it when I see it. That may be the best route to go, like we say.

MR. WU: That paper I talked about on the facts side is outside if anyone wants it. It is the wireless paper. I just wanted to mention it's out on the table.

MS. OHLHAUSEN: I wanted to give David and Christopher just the last chance if you wanted to weigh in on who funds the network.

MR. YOO: At the risk of making a prediction, which is always hazardous in this business, I will make one. What I have seen in this industry will become more complex, it's been relatively simple up until now. We have enjoyed

relatively low upward pressure on prices because of the over built fiber, and we are going to see more innovative pricing, more experimentation, just as we have seen in cell phones.

I think we have other people here who have written some stuff on this. Even they would concede, or their analyses concede it's not always the solution.

I'm actually quite sympathetic to "bill and keep." What we are going to see is it may be the right solution in some places, it may not be the right solution in other places.

It is unlikely to me that any uniform solution, price solution, will be the right solution in every circumstance and we should allow more flexibility in that.

MR. SOHN: Sure. I guess my concern is I do think as Tim said there is some strong arguments for "bill and keep" on the Internet, and I also wonder if it may not be possible to have a framework that permits some of both, where you preserve a core Internet capability that has a basic "bill and keep" system, and where nobody has to pay the delivering ISPs for termination fees, but at the same time, you have the ability of broadband providers to be offering some parallel services that are special delivery type of arrangements with different content providers off the basic Internet, and you have both options.

I think that would be a good way to fund the

network while still preserving the basic benefits of the pro-innovation Internet.

MS. OHLHAUSEN: I just wanted to remind everyone if there are things you didn't get to mention or to raise, the record is still open for another two weeks.

We have public comments. They will all be posted on the workshop website. There is your open forum completely. You can put them in there.

I wanted to thank the panelists and thank you all for coming, and this concludes the workshop.

(Applause.)

(Whereupon, at 4:46 p.m., the workshop was concluded.)

C E R T I F I C A T I O N O F R E P O R T E R

DOCKET/FILE NUMBER: V070000

CASE TITLE: BROADBAND CONNECTIVITY POLICY

HEARING DATE: FEBRUARY 14, 2007

I HEREBY CERTIFY that the transcript contained herein is a full and accurate transcript of the notes taken by me at the hearing on the above cause before the FEDERAL TRADE COMMISSION to the best of my knowledge and belief.

DATED: 2/23/2007

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C E R T I F I C A T I O N O F P R O O F R E A D E R

I HEREBY CERTIFY that I proofread the transcript for accuracy in spelling, hyphenation, punctuation and format.

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