

Panel Discussion: Should the Net's Physical Layer be Regulated?*

**Randolph May
C. Lincoln Hoewing
John Nakahata
Adam Thierer
Joe Waz
Richard Whitt
Christopher Yoo**

Randolph May, The Progress and Freedom Foundation: Thank you, Christopher. I commend you to Professor Yoo's paper on the "Economics of Net Neutrality".¹ You can see why Professor Yoo is not only one of the country's leading young academics, but also, I'm sure, a great classroom teacher as well.

Now, we're going to hold the questions for Christopher and take questions to him as well as to the panel when we get through with the panel presentations. I had asked our panel earlier to take about eight minutes for their remarks. And it turns out that if we adhere to that limit, it's going to work out just about right. So I'm going to be pretty strict in enforcing their time limit. And they don't even know for sure what order I'm going to call on them, so I'm going to surprise them. I'm going to introduce them as each one speaks.

Our first panelist will be Rick Whitt. Rick Whitt, as many of you know, is Senior Director for Global Policy and Planning at MCI, Inc. Rick is responsible for developing, coordinating, and advocating MCI's positions on a wide range of public policy issues relating to advanced telecommunications and data services, online information services, and the Internet.

He represents MCI before the FCC, the U.S. Congress, and other executive branches. He has been an active member of the FCBA for a long time. Prior to joining MCI in

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¹ The panel discussion followed, and directly relates to, the presentation by Christopher S. Yoo, Professor of Law, Vanderbilt University, of his paper "The Economics of Net Neutrality: Why the Physical Layer of the Internet Should Not Be Regulated." Professor Yoo's paper may be found at: <http://www.pff.org/issues-pubs/pops/pop11.11yoonetneutrality.pdf>

1994, Rick practiced telecommunications law as an attorney in two D.C. area law firms -- Sutherland, Asbill & Brennan, and Bishop, Cook, Purcell & Reynolds. As some of you old-timers here may know, I had the privilege of working with Rick in those two law firms.

Rick, why don't you start us off, please.

Rick Whitt, MCI: Okay. Well, thanks, Randy, and good morning, everybody. I think there were several key points of commonality between Professor Yoo's thinking and MCI's own positions. And, indeed, I think that commonality may even extend to most, if not all, of my colleagues up here on the panel.

First off, I think there probably is general agreement in the industry that the current vertical approach to regulation that exists in the Communications Act and in the FCC's many regulations, no longer works for a host of important market and technology reasons. We can maybe talk about that later on.

Secondly, the horizontal layers approach, which MCI certainly didn't invent -- we kind of discovered it in our attempting to prophesize -- we think offers a useful conceptual tool for policymakers to employ in examining legal and regulatory issues related to the Internet as well as broadband technologies.

Third, I think most of us also would agree, if you look at that approach and apply it to the market as it exists today, in nearly all instances such an examination will lead you to the conclusion that the layers themselves, and the entities in those layers, should remain or become unregulated to the maximum extent possible.

This is because any economic regulation you can think of in this new digitized network economy should be premised primarily on a finding of market power. Thus, for example, there should be no regulation of ISPs or content or applications providers in the classic FCC sense. It's at the physical access layer for broadband where our path appears to diverge, especially with regard to the MCI layers approach. So I'd like to briefly summarize both Professor Yoo's objections and our own response.

First, please keep in mind that the layers model helps to identify and frame the pertinent issues related to IP applications in broadband networks. But it does not necessarily dictate any particular public policy outcome. Economic theory and empirical analysis are the proper tools to get you from the framework to a discrete policy judgment.

One can disagree vehemently with MCI's specific conclusions, particularly with regard to broadband, and that is a debate well worth having today, but that disagreement should not diminish the utility of the layers approach overall.

Using the layers framework, there are three primary questions we should be asking here regarding consumer broadband platforms. Is there market power today? If so, should we care? And if we care, what should we do about it?

For the record, MCI believes at the present time there is indeed significant concentration and power in this market, that we should be concerned about it, and that a wholesale access requirement -- sometimes called open access -- is the most effective and least intrusive remedy.

We would couple that open access with vigorous FCC action to promote alternate broadband platforms. Professor Yoo talked about how that was the primary goal of regulators. I suggest that both maintaining open access in the interim, but creating the long-term promotion of entry, is in fact the right way to go.

First off, there is market power today. Although Professor Yoo acknowledges in his paper and in his presentation that the residential broadband market is concentrated to some degree, he dismisses claims that the current dominant providers -- the ILECs and the cable companies -- have sufficient market power to harm competition. He gives essentially two reasons.

First he points to the so-called HHI index employed by the Department of Justice. Professor Yoo claims that the market for broadband services is not concentrated, because it's a national geographic market, not a local one, and that the HHI number for a national broadband market is around 1,079, which is well below the 1,900 mark that triggers regulatory scrutiny.

However, in our view, Professor Yoo's notion of a national broadband market is contrary both to established precedent at the FCC as well as common sense. In the AOL-TimeWarner merger order, for example, the FCC concluded explicitly that the relevant geographic market for cable modem services is local.

As the FCC correctly pointed out, end users experience the market as local. It doesn't help a consumer to know that Verizon offers DSL in Maryland if they happen to live in SBC territory in Illinois. In fact, as many of us can attest from first-hand experience, broadband coverage from any individual provider can vary not just from city to city, but from neighborhood to neighborhood or even block to block.

ISPs essentially are in the same boat, and I would note -- I would actually reverse the conventional approach that Professor Yoo suggested in his slides. I would view ISPs in fact as the retailers here, and the cable modem providers and the DSL providers as the wholesalers. What you're receiving primarily from the Internet is content packaged together by the unregulated ISPs, and in many cases the cable modem providers and DSL providers are mainly giving you the transmission mode. So I'd view them as the wholesalers, rather than the other way around.

But anyway, ISPs are in the same boat because some of the larger ISPs are national in scope, certainly AOL and MSN. That doesn't mean that their purchasing decisions about broadband platforms can also be made on a national basis. The essence of a local broadband platform is that it's local.

As Professor Yoo himself admits in his paper, if the proper geographic market for broadband platforms is, in fact, local, the HHI number jumps well in excess of 4,000, which is many multiples above and beyond the traditional trigger for antitrust concern. Thus, on this one point alone, if Professor Yoo is mistaken, his subsequent analysis and conclusions, I submit humbly, could be somewhat different.

Second, even if the market is highly concentrated today, Professor Yoo claims to see what he calls a host of other technologies waiting in the wings, and he lists a number, such as satellite broadband, fixed wireless, mesh networks, Wi-Fi, and 3G. These modalities may, in fact, be somewhere in the wings, but in our view they are still nowhere near center stage.

There are a number of problems with this alternate modalities argument, which boil down to questions about technical and economic feasibility, as well as actual consumer usage. Much of the excitement about new broadband platforms, particularly spectrum-based platforms, runs headlong into the harsh reality of physics. In particular, it's highly doubtful that there is enough spectrum available, at least today, to create a robust, ubiquitous, mass market wireless alternative to DSL or cable modem services. More importantly, we should simply look at the best-available evidence of market power -- the current take rate numbers.

Professor Yoo's own paper shows that DSL and cable modem services completely dominate the broadband market today. Predictions about whether and when certain technologies may or may not be successfully deployed, or seen by consumers as adequate substitutes, or subscribed to by real live customers, are not an adequate basis for market power analysis.

The second point -- should we care? In MCI's view, the answer is yes. Professor Yoo argues that it's not really a serious issue anyway in terms of market concentration, because vertically integrated companies can and should provide tangible benefits to consumers. And just to be clear, MCI does not at all dispute that companies with market power at the physical broadband layer should be allowed to provide services and applications in the other dependent layers. Verizon and Comcast can and should be free to invest in, provide, and bundle together any and all functionalities from the content applications and logical layers.

We think this principle is faithful to the regulatory nature of the layers framework. The real question here is whether policymakers should still be concerned enough about this kind of concentration to consider some tailored remedy that would be focused on the physical layer? MCI thinks so.

Professor Yoo cites with approval a recent paper by Joe Farrell and Phil Weiser. I would also commend that. If folks are interested, I can give you the citation afterwards. It describes the concept of ICE, or internalizing complementary externalities -- a lot of economic, heavy-duty lifting there. But a central thesis is that -- even if you have a vertically integrated company, or a monopolist, that company still has natural incentives

to voluntarily provide access to his dominant platform when it's efficient to do so and deny access when it's not efficient.

If you read the paper, I think the conclusions there are pretty soundly supported. At the same time, however, Farrell and Wisner are careful to point out that there are at least eight different exceptions to this ICE concept, many of which provide compelling reasons why a broadband provider, for example, with market power would have the incentive and ability to close its platform to other entities. These exceptions include price discrimination in a bundled services environment, bargaining problems, incompetent incumbents -- sorry, guys -- and regulatory strategy.

Moreover, no less a light than FCC Chairman Michael Powell himself seems to agree with the premise that vertically integrated broadband providers could cause significant potential harms by imposing restrictions on their end users. You may recall back in February he called on the DSL and cable modem providers to adhere voluntarily to what he called the four Internet freedoms for their customers, including freedom to access content, to use applications, and to attach personal devices.

Of course, it remains to be seen whether the Chairman's preferred reliance on public exhortations rather than regulatory requirements will successfully deter the improper exercise of market power. Still, the key takeaway here is that, at least in the Chairman's view, there is a potential problem, even if you may not agree with the regulatory solution.

And, finally and quickly, the third point -- we think the solution here is, in fact, a wholesale access requirement, also called open access, to remedy this market concentration. Professor Yoo raises three objections. I'll go over them really fast. First, he believes that compelled access will be difficult to administer. Even if that were true, which we don't believe necessarily is the case, that's not a compelling reason not to try.

Moreover, look at the FCC's enormously successful experience with the Computer Inquiry safeguards. As the law of the land for the past 25 years, those relatively minimal rules were instrumental in paving the way for the Internet, largely by imposing the straightforward open access requirement on the Bell Companies for narrowband Internet services.

Secondly, Professor Yoo cites UNEs and other examples of failed FCC approaches to compelled access. Well, we're not talking about UNEs here. We're not talking about TELRIC. We're talking about non-discrimination, just and reasonable rates, terms, and conditions, and a part of the Act going back 70-plus years. In essence, the broadband platform provider can set the rates and terms for itself and the other ISPs. It won't be easy to get behind those rates, but, of course, if it were easy, it wouldn't be worth doing.

And, finally, Professor Yoo notes that forced access regimes dampen ISP incentives to invest in alternate plant forms. This view presupposes that, in fact, such broadband

alternatives are not only possible in a theoretical sense, but can readily become a market reality in fairly short order.

In other words, you need both the physics and the economics to work before you can see any real investment opportunities in robust and ubiquitous alternative platforms. At least for now we don't see that. In the meantime, of course, consumers and other end users at the edge of the network could inevitably suffer significant harm. This is all the more reason why we agree with Professor Yoo that Congress and the FCC must do all that they can to pave the way for these new broadband platforms, even if they only end up as niche players. Thanks.

Randolph May: Rick, thank you very much. You know, I don't remember when you and I were practicing law us ever sitting around and talking about ICE. So I think we've learned something since --

Rick Whitt: I think it was Vanilla Ice.

Randolph May: Anyway, I think next I'm going to call on Link Hoewing to speak. As most of you know, Link is Verizon's Assistant Vice President of Internet and Technology. He is responsible for identifying and assessing emerging issues, developing corporate positions on Internet and technology industry issues. Link spent three years in New Zealand for then Bell Atlantic. Prior to that, he served on the Hill in various capacities. Link has a bachelor's degree from Carthage College and a master's degree in public administration from American University. Link, why don't you go next.

C. Lincoln Hoewing, Verizon: Thank you, Randy. I think this is a record this morning, because there are two people that have spoken before me that I think speak faster than I do. It's probably impossible, but I'm going to try to equal them.

Randolph May: You still only get eight minutes, either way.

C. Lincoln Hoewing: I thought they saved some time. I might be able to go a couple minutes longer. I've got some slides in front of you, if you want to take a look at Slide 2. In terms of the response to Dr. Yoo's paper, I think there are many areas in there we agree with.

I'd like to focus on just one issue that he mentioned specifically that I think is very important, and that is the issue of network differentiation and innovation. One of the things that is going on in policy with respect to broadband today is an effort, I think, to help companies or encourage companies to invest in new technologies like fiber -- like broadband technologies, like broadband over power line.

And so, in effect, what the policymakers are looking at is ways to help companies differentiate their networks. It has already happened, if you look at wireless. Verizon Wireless, for example, is already spending a billion dollars more this year to build out

3G technology called EBDO. It's already in Washington and San Diego. It's up to 500 kilobytes, maybe even a little faster in some areas.

So, basically, we already are seeing the emergence of new broadband wireless networks that are already out there. And one of the areas that I would agree with Dr. Yoo is in the network differentiation area. If you look at our ads for Verizon Wireless, for example, the wireless guy goes around saying, "Can you hear me now?" The reason that works is because people, in fact, know that our network has a quality issue, a quality edge. And I think that's not just us saying it; the Consumers Union says it, too.

So we have been able to differentiate the network by investing, and that was possible in large part because there wasn't a lot of regulatory overhang, and there wasn't a requirement to have essentially uniform types of access required. And so we built a new network that has new capabilities.

Go to the second slide and just quickly look at what MCI says. The only thing I'd point out there is that the bottom layer where they are talking about the need for regulation, they are, of course, part of that bottom layer. They have a backbone. Now, I don't know the market shares today. I haven't looked at it recently, but I am assuming they probably have around a 30 percent market share in the backbone market. That's about what DSL providers have in the local market. So the issue of concentration -- that's really what they're talking about, is kind of bogus if, in fact, it's applicable to our market and not to their market.

Don't just look at their white paper. Look at the bill. They have a bill, a draft bill that they are supposedly proposing to implement their white paper. And if you look on one aspect of the bill, it doesn't just talk about access at wholesale rates, and basically the light hand regulatory approach that Rick referenced. They also talk about -- and I'm quoting -- all ILECs -- that's local telephone companies, local loops capable of supporting broadband capability, regardless of underlying loop technology, should be provided at incremental forward-looking rates. Essentially they're saying fiber -- networks that we deploy also have to be unbundled. So the idea that this is a very limited approach is just not true.

If you go to the next slide, Rick, I actually did an analysis last night. I consulted Scott Adams, and basically he said that if you look at the assumptions you're making, and then the conclusions, they really don't line up. In a sense, the reason I did this is partly as a joke, but also to say I do agree that the analysis they have conducted is right, that in fact today's technologies that we have are much different than the stovepipe technologies we had in the past.

And the way we need to look at regulatory policy certainly needs to change. But to make the leap from that to say that the physical layer needs to be regulated in essentially the old way, with unbundling requirements, just doesn't make any sense. And it doesn't encourage investment or innovation and differentiation, as Dr. Yoo is referencing.

If you go to the next slide, I've got some policy questions that I think are important to look at, and certainly the issue of why we have regulation in the first place, especially economic rate and entry regulation. Usually, the key reason we have it is because of a dominant player in the market.

And I think that on the IP platform -- on the applications side we certainly have a lot of entry, a lot of VOIP applications, all kinds of IP-enabled services. So entry is not a problem, and cable services -- cable VOIP services -- are clearly an indication of that. And so, basically, there's a lot of competition there. The issue of any regulation for that, I would agree we don't think economic and rate regulation for those kinds of IP-enabled services makes any sense and would discourage competition.

If you look at the next slide, there are some projections of, for example, what VOIP might look like in the cable market. That alone might result in millions of lines that would be essentially on the cable companies networks. So there's a lot of competition in that market. There are companies that are offering services. Clearly, we agree with them on that point about regulation in the IP-enabled space.

But the next slide -- if you look at the market share in terms of the broadband market, the physical layer of the market, you, again, have a situation where we're not dominant. We have about a third of the market in terms of DSL today. It is increasing. We are marketing more successfully, and the market is getting vigorously competitive.

The issue is: Are consumers getting a good deal? And is it competitive? And if you look at what companies are doing, which are lowering prices, which are increasing output, that just doesn't seem like a market that's not competitive. It's very competitive. Otherwise, you wouldn't see that kind of activity. And, again, you've got companies entering the market today with new technologies, and I don't think broadband over power line is actually a pipe dream. There are companies today like Current Communications that is, in fact, already offering broadband power line in the country, in Cincinnati, at \$29.95. They are going to offer VOIP over it very soon. AT&T is investing in it, or at least doing some joint trials in it. Earthlink is investing in it. So, clearly, there are alternatives out there beyond what we're seeing today, and you already have, as I said, networks like Verizon's cellular network that is already beginning to move to the broadband space.

If you look at the next slide, in terms of what Dr. Yoo already said, I just wanted to show you graphically what it looks like. Very, very competitive market with lots of competitors. The market share is very small for all of these players. All of them are investing in various new technologies. Verizon is actually committing to a \$20- to \$40 billion build out of new fiber technology. SBC announced a major deployment of new broadband technologies. This is what the policymakers want to see. This is the kind of competition that will be helpful if network providers can, in fact, differentiate and not have to come up to a regulatory structure that, in fact, will act as a disincentive to investment.

So this is why this is important. I think it does encourage more of these build outs of new technologies. The next slide I think is one of the important ones, and it's a picture of a 1977 ad for AT&T. And basically AT&T was saying if you put all of those different telephones out there, you've got a lot of different choices. Well, we all laugh at it because we know that the underlying network didn't have any different services. You all had the same kind of basic voice service. You didn't differentiate based on different kinds of calling technologies or services. The circuit switch network was pretty much what everybody had. The switches themselves had the same feature sets. So you didn't have competition and innovation much in the network in those days. You largely had it in the devices. And even in the devices, they didn't do much other than access the telephone network.

Look at what is going on in cellular today. Again, in a market that is very open and competitive, doesn't have a lot of regulation, you have handsets that differentiate a lot, have different feature sets of all kinds. And you have networks that do the same thing, differentiate and provide different kinds of services. So, again, I think what we're trying to do is get competition in both areas, get companies to invest in networks and in the handsets and the applications set right on top of it.

It is important here to point out -- this is actually the ISO model of what the layers look like (slide). It's a little more complex than what MCI has laid out. The important thing we're trying to point out here is there are competitors at all of these layers. Some of them are equipment makers. Some of them actually have networks. Some of them make routers applications and software makers. The point is that all of these players have to work together to get the packets to the customer. We all have incentives to work together. So the idea that we're going to actively try to interfere with the traffic and try to degrade some of these services intentionally is just not feasible and not plausible.

The market is going to work. Companies are going to work together, because they all have to make this network work, so we all can get benefits out of it.

Finally, in terms of key challenges, I think the key challenge is: Because we want to keep this kind of robust investment going, we want network differentiation and new networks built. We do have to continue to stimulate innovation and investment, which means we do have to remove regulation. I do believe that regulation tends to drive things down to least common denominator services. When you require unbundling, you are requiring essentially a company to provide everybody the same basic access. So it's very difficult for anybody to differentiate based on that. You can't innovate very easily, and you can't certainly get the benefits of that innovation when you come up with the innovation.

We have said -- and we have told the Chairman this and the FCC this -- that although we believe competition is very, very vibrant in the market, and investment is going well and we continue to believe that we can move forward and try to create new value with new network investments, we also see that it would be valuable for the industry, not just us, but players in the Internet space, generally in the broadband market, including

applications providers, frankly, to live by a set of principles that include the fact that consumers should be able to go where they want to on the Internet when they have a broadband connection. They should be able to run any application they want to. They should be able to run compatible devices that work with a network -- to do what they want to with that broadband connection in terms of gaining computer access, and so forth. So we believe that this is important to open this market and allow competitors a chance to compete.

The only final point I'd add is, again, take a look very closely at the bill that MCI is proposing. It is not a light-handed regulation approach. It is a very heavy regulatory approach, if they actually had that bill and adopted it. Essentially, I look at it as what I would call the new version, or the enhanced version, of unbundling, that we have already had with the old physical networks. And it just doesn't make sense if we're going to encourage investment in innovation.

Randolph May: Thank you, Link. One thing I want to remind the panelists, of course, is that when we get through with their initial presentations, I'm going to give them a chance to go back and forth at each other, so they can take notes, mental notes or written notes, and we're going to give them a chance to go at each other and, of course, bring the audience in as well.

One thing that Link brought up a couple times that is important to have in mind as we listen today is that the issues that we are talking about obviously will be at the core of any new attempt to rewrite the Communications Act. And so in a forward-looking sense, I think we ought to be thinking of them in that way. Next I'm going to call on Adam Thierer to present. Adam is Director of Telecommunications Studies at the Cato Institute. Now, on Adam's website -- I'm going to quote -- it says he "conducts research on how government regulations are hampering the evolution of communications networks, including telephony, broadcasting, cable, satellite, and the Internet." So Adam will let you know right up front where he is coming from. And he is one of the most eloquent, oft-cited people here in town and in our think-tank community, of course, that studies, writes, and speaks about the issues that we are talking about today.

Prior to joining Cato, Adam was the Alex Walker Fellow in economic policy at the Heritage Institute. Before that he worked at the Adam Smith Institute in London. He's got a master's degree in international business management and trade theory from the University of Maryland, and he got his bachelor's from Indiana University. Adam.

Adam Thierer, Cato Institute: Thanks, Randy, and thanks for inviting me here today to comment on Professor Yoo's wonderful paper. I'll just run through very briefly three things I really like and agree with about Professor Yoo's paper, and a few things after that that I think are missing from the paper, and then I'll have some concluding thoughts.

First of all, I won't go into great detail, but I will just reiterate what Professor Yoo said about vertical integration, which is to say that it's my belief that both net neutrality and

the layers legislative proposal are really at war with the concept of vertical integration and high technology markets. My biggest fear here, simply put, is that a "layer breaker" might become a "lawbreaker" if the layers model becomes a formal regulatory paradigm. Simply by trying to make sensible business decisions and investments and diversifying into other lines of business, you might potentially run up against the law because you've crossed a certain layer. I don't think I need to say anything more on that. Professor Yoo's paper is wonderful in this regard. I highly recommend it.

Second, the point that Professor Yoo made about competition in Internet architecture or standards is a very important point. Do we really want to lock in an industrial policy scheme that says one type of architectural configuration is permissible and others are not? I don't think so. Open systems, while they do have many advantages over closed systems, and if that's the way things evolve naturally, then so be it. But other times, however, closed systems make all the sense in the world, as Professor Yoo noted. But policymakers shouldn't try to dictate the outcome one way or the other of what essentially is a standards or architectural battle. They should remain fundamentally agnostic with regard to network architecture and the Internet world. In the end, the Internet, or whatever future interactive platforms develop, will probably be a mix of open and closed systems, and that's probably how it should be. We should encourage that sort of competition.

Third and final point that I want to stress about what I agree with Professor Yoo's paper is the impact of net neutrality in the layers model on network innovation and investment. This is something I've done a lot of work on. It was the subject of one of my recent books on forced access regulation, which is that we do not want to do anything to artificially discourage the growth of alternative infrastructures or pipes to the home. Net neutrality proponents obviously feel quite passionately about the question of innovation at the edge or the margin of existing networks. But where is the concern for innovation at the core of the network? Or the innovation and investment needed to bring about entirely new network infrastructures? The principle -- and it took me many years to finally articulate this the way I wanted -- but the principle that net neutrality proponents fail to understand is this, and indeed all forced access proponents fail to understand. Innovation and competition within existing networks is important, but not nearly as important as competition in the creation of entirely new networks and services. Net Neutrality and layers legislative proponents need to put more thought and energy into the question of how the network is funded and built instead of being myopically focused on just trying to optimize outcomes on older networks.

Now let me mention two things very briefly that I think are missing from Professor Yoo's paper that surprised me a little bit. I know he's aware of these things because he's written about them in other papers. So maybe it just wasn't something he focused on in this one.

But first of all, there's missing a discussion of a potential for regulatory gaming of the system that Net Neutrality mandates might bring about and this is a very serious problem all regulatory economists understand. There's a rich diversity of literature out

there in the economics field on this question. I won't go into it and I know Professor Yoo has written about it elsewhere.

Secondly, he's also written about this elsewhere, but it wasn't in his paper. What about property rights? Can we not view this debate through the prism of property rights? Today's broadband service providers are all private, shareholder-owned entities. The risks inherent and the massive on-going investments being made by these companies now fall squarely on the shoulders of firms and their investors. Simply put, shouldn't they have the right to call the shots about how their networks and infrastructure get used once they spend billions deploying them? I believe so, but apparently some Net neutrality proponents do not.

Two final notes. In thinking about the layers model in particular as a replacement regulatory paradigm for the vertical silos regulatory model, we need to ask ourselves: Do we really need a regulatory replacement paradigm or model at all or should our goal to be minimize regulation to the maximum extent possible, which I would obviously favor?

When we deregulated airlines and trucking and railroads, we didn't necessarily search out an alternative regulatory paradigm. We just got rid of the regulations and the regulators. So I think that's one thing to be considered here. Just as a matter of practical politics, if the layers model comes before Congress as I'm sure it will, I am willing to bet that they will not look at, they being Congress, this as an all or nothing tradeoff with the existing vertical silos model. Instead we'll end up getting some sort of an ugly hybrid of the two models that ends up not being purely vertical or horizontal, but may be diagonal or zigzagged, or I don't know what. It's a real problem though, and it reminds me of the on-going debate about long-term tax policy reform in this country between sort of flat-taxers and sales-taxers and I think the killer argument that the sales-taxers have is that the sales-tax guys say, "We want a national sales tax that's preferable to flat tax, but the problem is you have to get rid of the income tax first." I don't think that happens. I think it's better to work within the existing system and constructs and reform from there.

Second and final point I'll make. It should be evident by now after hearing Professor Yoo speak and hearing this discussion that Net Neutrality mandates in the layers legislative model will ultimately result in more regulation of the Internet, not less. It's not just the physical layer providers either. Think of what the layers model means if it's put into place for a company like Google. It's in a different layer. It's in a layer we're not worried about here today. I guess it's up in applications, although maybe you could say it's even a little bit in the logical layer. But what happens after that big IPO and they have all that cash sitting around and they start investing in other companies or services or vertically integrating into other layers? What will it mean if you go search on Google for Google as a public utility? You'll be surprised to see how many people are already proposing to regulate that company as a public utility. The layers model opens the door for that potentially.

I know Rick doesn't think that will happen. He doesn't hope that will happen. But I think it could because there is always the potential for a regulatory system to grow and become fair game by others. So, in conclusion, I just have to ask the question, "Whatever happened to hands off the Internet?" I think what we have with Net Neutrality and the network layers model is hands all over the Internet. Thank you.

Randolph May: Adam, thank you very much. Maybe we'll get a chance to ask Rick what he thinks about that. Can you believe Adam's cynicism about the "Congresspeople" and what they might do on the Hill? It's unimaginable. Can you imagine them just saying, the Republicans saying, "We'll take those two layers over there and we'll fund-raise from those guys and you Democrats take those other two layers and you fund-raise from them. And we'll see what happens." But, anyway, I'm only being half cynical here.

Next I'm going to call on John Nakahata. Then you'll be able to figure out who will be our anchorperson. John is a partner in the D.C. law firm of Harris Wiltshire & Grannis. His practice focuses on the development of competition in telecommunication markets and the convergence of communications technologies and services. He represents local, national and international companies in these areas before Congress and the FCC and the Hill and other places.

Now, important for our purposes, before entering private practice, John was Chief of Staff of the FCC where he was one of the principal architects of the FCC's implementation of the Telecommunications Act of 1996. So you can either throw your kudos or your criticism to John for playing that role. Prior to his service at the FCC, he spent a number of years as a legislative aide to Senator Lieberman. John, we're glad you're with us. Why don't you go next?

John Nakahata: The difficult, or maybe easier, task of going near the end is that a lot has already been said. I guess I could make a few observations. First, I commend you, Professor Yoo, on a really well done and thoughtful paper and it raises a lot of issues and a lot of good points, and certainly challenges anybody on any side of this debate to really go back and think analytically about their assumptions. It's a job very well done.

In reflecting on a couple things here, one other thing is in looking at the layers model, I think I agree that it is a very powerful analytic tool regardless of what policy conclusions you draw out of that. I would certainly commend that to be as I think about it, I would add actually one layer to the four and make a fifth layer, sort of like MCI's picture.

But I think that you don't think about rights-of-ways separately from the physical layer, even though it is sort of part of the physical. I think that you miss a whole set of issues, whether this be conduit poles, franchising issues and things like that that plague communications regulations. So it's very important, I think, to keep that sort of fifth layer in mind.

Stepping back one step, the data is really interesting, but I don't think it's really, as Randy put it earlier, should broadband be regulated in a public utility-like fashion because I don't think that anybody is really looking at the broadband market as a classic monopoly public utility. I think there are aspects of it that are less competitive than others. But even those aspects, in sort of a broad-brush way, people generally look at as being at least a duopoly.

There are other parts of the country where people would challenge that, and even if you go and talk to business users, business users don't feel like they have a lot of choice in their communications providers. So in terms of broad-brush, it may be a little too broad. But I don't think that anybody is looking at this as traditional monopoly public utility regulation. I think that we're struggling with the issue of how we approach something that may be a duopoly and the question is, is it a transient duopoly or is it a longer term duopoly and what are the implications of that? I don't think the answer to that is necessarily what the Europeans might decide, which is if you find joint dominance, then you subject everybody to everything. I don't think that's right and I think that in fact the FCC has used that approach in the long distance market even in the AT&T context with long distance.

But I also think that in general the FCC's doctrines, if you look at the cases, have said they don't think their price regulation is all that good. Especially tariff-related price regulations where you publish prices in an open market and you put prices out there in the open. This is not all that good an approach for duopolistic structures because, in fact, it facilitates coordination in the pricing of the inputs. So I think that's another lesson.

If you're going to say that you don't think price regulation is very good, then I think Professor Yoo is right. There is a question at some point about what is the efficacy of access regulation. On the other hand, I don't think access regulation is a tool that should be forsaken quite as quickly. Everybody would agree the best solution to a duopoly is to make it a triopoly or a quadrapoly or whatever else you could make it that it would not be a duopoly. The issue is: Is it a longer term problem? And then access regulation is a tool that does need to be looked at, even though it does have flaws.

I think that Link's points are overstated. And which of Link's points are overstated? Many of Link's points are overstated. But the point in particular --

C. Lincoln Hoewing: But right nonetheless.

Randolph May: Just take a couple of them now because I want to make sure we have a time for questions. We have to move along.

John Nakahata: I'll move along. The point that I think is particularly overstated goes to, and of course you made this point as well, the disincentives that access regulation creates for investment and alternate networks. The reason I think it's overstated is it does not really comport with the reality of what people who are dependent on access actually face.

Nobody who's dependent on access regulation wants to have their fate in the hands of the guys who control the access, although AT&T did make this mistake post '96 Act. That's too unstable. You are subject to too much regulatory risk. Companies that I know that are concerned about access are also actively trying to invest in alternate means to get around what they perceive as the non-competitive portions of the network. So I think that the statement is just too broad.

The last point I think I'll make is that, and I didn't really understand in Professor Yoo's paper, is the four freedoms that Chairman Powell has talked about are really similar to the High Tech Broadband Coalition principles. I didn't understand about how that prohibited companies from rationing bandwidth, or how it's going to affect price to ration bandwidth and to prevent congestion. I just don't think that's accurate. I think that all the references with the terms of your plan, the bandwidth limitations of your plan, are meant to recognize that companies have to have price tools to ration bandwidth and to deal with congestion. They just don't want it dealt with on a preferred provider basis. So I think that's it.

Randolph May: Thank you very much, John. And last, but not least, of course, we have Joe Waz. Joe is Vice President, External Affairs and Public Policy Counsel at Comcast. Joe has primary responsibility for the company's public policy activities. He oversees the company's political action committees and works closely with Comcast's federal, state and local government relations and also the public relations professionals of Comcast. You can learn a lot more about Joe in his bio. I just want to emphasize that Joe has been President of the Federal Communications Bar Association Foundation as well as his own company's foundation. As someone who has been an observer of the FCBA over a number of years, I know the time and energy that Joe has spent with the FCBA's foundation, and the good works that he's done which have required a lot of time. So I've been able to observe that. And I've been one of the people that have appreciated it.

Joe is the author of numerous articles in communications journals on different public policy topics. He's actually had a Book-of-the-Month Club selection from 1983, Reverse the Charges. We will have to save that for another presentation. Joe, you know you have eight minutes. If you want to use some of that and tell us about Reverse the Charges, you can do it. Joe is going to wrap it up for us.

Joe Waz, Comcast Corporation: Thank you, Randy. If it were still in print, I would make a pitch, but 20 years is a long time ago. It was actually the first consumer book about the changing telecom landscape and how you could buy your own telephone and subscribe to competitive long distance.

Well, having the last name that begins with a W and being six foot six, I'm used to going last, but hopefully, I can do a little differentiation of my own and try to provide a little different perspective on this. Also since I'm probably the most seasoned panelist here,

a nice way of saying oldest, I can talk about some personal experience and some issues that I think parallels what we're talking about today.

First of all, I don't know how you argue with success, and I think broadband in America is huge raging success. Cable really did lead the way in bringing broadband to the mass market, to the residential market. The phone companies followed in rapid succession. Today we beat the tar out of each other in the competitive marketplace. I think that's good for both of us. It makes both of us better. And I think the imminence of competition from BPL powerline, from Craig McCaw's Clearwire, from Wi-Max, and from whatever comes along with the broadcast spectrum when it gets back into the marketplace, these are truly imminent competitive threats that keep us both on our toes.

I don't share Rick Whitt's pessimism about that. Once upon a time, people said there could never have been more than three broadcast networks. Once upon a time Andy Grove said cable modems will never work. There will never be a cable modem business. So experience suggests optimism in this realm as a better course. As Professor Yoo suggests, and I want to join all my colleagues here in commending his extremely thoughtful paper, if the government winds up diverting its time and resources into imposing Network Neutrality or regulating broadband networks under layer regulation theories instead of focusing on ways to open up new opportunities to invest in broadband networks, we'll have a self-fulfilling prophecy. There will be fewer competing networks and government will never get out of the business of regulating.

As I was thinking about this self-fulfilling prophecy concept, it called to mind a movie I saw a couple of years ago called "Minority Report." You all might remember it. Steven Spielberg directed it and Tom Cruise was in it. It was about a futuristic system of law enforcement, something they called pre-crime. It was being used here in D.C. to prevent murders from occurring. There were these three psychics in this vat of something or other maintained like in the "The Matrix" and they called these three psychics Pre-cog, which stands for pre-cognition. They had knowledge of future events before they would occur. So Tom Cruise plays this law enforcement agent and he completely and utterly believes in the pre-cog system. That it's perfect, that it's flawless, just like a Federal regulator. That is, he believes in the system until he's on the receiving end of pre-crime justice. The pre-cogs perceive that he's going to murder a man whom he's never met. His own agency turns on him and wants to pull him in. So it turns out that the system isn't flawless and that it's been set up in fact so that if one of the pre-cogs doesn't agree with the other two, their minority report is never filed. It never exists, because if the system is not unanimous, it's not perfect.

That's sort of what I see going on here. Some people are asking Congress and the FCC to be pre-cogs to foresee pre-discrimination and to apply preemptive justice before there's any evidence of a problem. If the proponents of Network Neutrality and layer regulation are heeded, we're going to see a similarly unjust result to what Tom Cruise suffered.

We don't have to speculate about what happens when the government is asked to be a pre-cog and adopt prophylactic regulations based on a flawed view of the future. I can think of at least four good examples, but for gravity sake here, I'm going to cut it to three that I've lived through personally where government presumed the existence of a monopoly or oligopoly, tried to perceive a market failure before it occurred and took regulatory measures that either became the cause of market failure or were utterly ineffectual even after tens of thousands of man-hours and effects to implement the regulations.

My life kind of straddles Titles I, II, III and VI of the Communications Act so I'm going to jump around a bit to get some various examples here. But let me start with something about the financial interests and syndication rules that you old-timers will remember. These are rules that were originally adopted in 1970 and they apply to broadcast television.

Certainly the original sin of broadcast TV is the way the VHF spectrum was given out way back in the 40s and 50s so that effectively there were three strong VHF broadcasters per market around the country. That led ultimately to there being the creation of three national broadcast networks. And just like we heard today, everybody said, "Well there can never be more than three broadcast networks. It's a natural oligopoly."

So the FCC had elaborate rules regulating the relationship between broadcast networks and the people that produced programming for broadcast networks, which are mainly the Hollywood studios either directly or as facilitators for independent producers. These rules were great. They made the studios rich and they pretty much ensured that there would continue to be only three broadcast networks.

The battle went on for years. I was on the wrong side of it. I did a lot of work with Hollywood in those days. I can confess to my sins, and finally in the Bush I Administration the rules were lifted. So the first sign of success, the FOX network was created, a vertically integrated studio broadcast network. And suddenly we had a fourth and very compelling choice in the marketplace followed by WB, followed by UPN, followed by PAX. All these networks came forward because the artificial system based on a precognition of a non-competitive marketplace was blown away and we opened up the market. So the moral of the story, if you presume there's an oligopoly and you regulate accordingly, you'll have an oligopoly. If you focus on encouraging investment in new networks, you get new networks.

Second quick example; I'm going to skip my open access example. That sort of picked up really as the Network Neutrality discussion today. But let's talk about UNE-P. Rick referred to the advisability of having open access regulations in the interim until competition emerges. Well, we just had an interim from 1996 to 2004 in the telephone marketplace where having a resale and UNE-P regime in place I would submit was without a terminus state. This really led to the regulatory gaming and disincensed long

distance providers in particular who would be the most likely ones to invest in competing facilities. So it was a transition to nothing.

We may be at or near the end of the road on the UNE-P debate and at the beginning of the VOIP era which is going to bring in incredible amount of competition to the voice marketplace. But I would suggest again the bad policy choices made in the '96 Act that were intended to create interim competition have only delayed facility-based competition.

My third example, and this one probably would not be on the radar of a lot of folks, but I think it's a perfect fit here, is AOL Instant Messaging. You may recall back when AOL and Time Warner wanted to merge a few years ago. AOL, in fact, had been a big proponent of open access and then they decided it made more sense to invest in competitive facilities instead of trying to gain regulatory access to other folks' networks.

There were two big hang-ups in the merger. One was an open access requirement which was in fact imposed by the FTC. I'll ask anybody here who wants to suggest that there's a strong pro-consumer outcome to that to voice their views later. And the second was a requirement that AOL had to make its instant messaging system interoperable with other instant messaging competitors. This became a *cause celebre*. It was pushed hard by AOL's two primary IM competitors. Then FCC commissioners said that if AOL didn't make IM interoperable it would "distort a worldwide pathway of communication."

Arguing against interoperability here was akin to arguing against the whole concept of the '96 Act and the pro-competitive interconnection policies of the Act. So the FCC presumed AOL/Time Warner would have a bottleneck and spent months and months hammering out regulations to mandate interoperability.

Jump ahead two years, 2003. AOL/Time Warner files a petition with the FCC and it says, "Well, you mandated interoperability of IM, but nobody wants to talk about interoperating so can we make this condition go away?" Put it out for public comment. Two people filed in support of maintaining the IM condition. It happened to be the two folks who were in the agency at the time who were primarily responsible for the imposition of the condition, and the condition went away. In fact, somebody told me this morning that as of this week there may now be private sector interoperability agreements between these players. So here we are.

There you have it. We have three big public policy errors I would suggest that really go to this point: If you assume the existence of monopoly or oligopoly you get it and you don't get competitive facilities. So I would suggest let's learn from these mistakes. We've seen this movie before, whether we call it Network Neutrality and I'm afraid it's just a bad sequel to the other three stories I just told you. Thank you.

Randolph May: Joe, thank you very much. I think Joe has just demonstrated that if your career does span enough titles over the Communications Act, you can develop a very informed perspective and a very useful perspective. Thank you, Joe.

Now here's what we're going to do because we're a little pressed for time. So even I am going to try and talk faster. First, we're going to have Professor Yoo. I'd like for him to take just a couple minutes and give him the opportunity to respond to anything that he's heard. As soon as he gets through, I'm going allow each one of the panelists to do the same thing quickly and then we're going to open it up for questions. Professor Yoo.

Christopher Yoo, Vanderbilt School of Law: I'll keep it really brief. I want to make clear what I'm not arguing and what I am arguing. I'm not saying that there isn't concentration in the last mile when end users are involved. What I'm saying is vertical disintegration won't solve that problem.

Even if you force the last mile providers to sell off all their applications and content properties, I'll still just have two choices and that's not going to change. What strikes me is that if you analyze what Network Neutrality is designed to help, it's designed to help not end users. It's not going to change their prices. It's to protect applications and content markets.

When you analyze it that way, it's a different analysis. What I'm saying is that it is a national market. There is a local market here that is important. There's a national market here that is important. In fact, my conclusion is that the local market in which end users meet is very important and is the key one, but that Net Neutrality proposals are at odds with promoting competition in the market we should care about.

I do think that the focus for policy should be promoting entry by alternative network platforms to solve the end user problem which is the central problem. What's happening though is we're tending to focus on the end user market as a justification to protect the applications market and say, "Well, it's concentrated. Therefore we should regulate to protect applications." They are different markets and the solution of vertical disintegration is not going to solve that problem and in fact, could make it worse because of the impact that it will have on investment.

Randolph May: Thanks. I'm just going to go down the line and ask if anyone wants to make a comment. Or if you want to pose some questions you can do that. We'll do it pretty quickly. Rick.

Rick Whitt: Okay, a couple quick responses to Link's point about the backbones. That's ridiculous. We have 30 percent of a market of dozens of backbone providers. You have 30 percent or 40 percent or more of a market with two providers, again, at best.

To Adam's point, the "layer breaker" becoming a "lawbreaker", again, our whole notion here is not that you use the layers as a club to bash the heads of the various producers

in these layers. That's actually supposed to be a proscription to the government. When the government is supposed to respect the integrity of the layers, they are not supposed to go out there and attempt to prevent people from moving from one layer to another.

In a competitive marketplace where Google operates, for example, they are free to do what they want to. The issue comes up if you find market power and, again, that's an empirical task. That's an analysis you can have on separate grounds.

And finally to Joe's point about the pre-cog idea, I guess you all are basically pre-cogs about a robust competitive future. We're pre-cogs about the concerns about consumer choice and innovation at the edge. I have a pre-cog proposal for you. How about if we give you guys, let's say, 18 months or let's say two years of an environment where it's completely unregulated? You can do everything you want to with your broadband networks and the same thing for Link's folks. If at the end of those two years, the two providers' market share together is no greater than ten percent, then we'll impose open access on you forever.

Randolph May: You can see that when Rick was working with me at that law firm I always told him to come up with counterproposals. Adam.

Adam Thierer: Really briefly. Just to respond to Rick's response to my point about layers, take a look at things that have happened in recent years. I mean look at the debate we're having right now over the Brand X case and "information services" and the question of the applicability of certain titles to certain types of services. Now, with all due respect, I know you don't think that the layers model will come to be used to regulate different layers. We're talking primarily about physical layer here.

But I don't buy it. I guess I'm a skeptic in that regard and I think if you open up the door to allowing other layers to be regulated and give regulators a tool, it will come to be regulated. So I'll just leave it at that.

Randolph May: Thank you. Joe.

Joe Waz: Do you want to do Link next?

Randolph May: Okay. We'll keep the same order. Link.

C. Lincoln Hoewing: Just two points responding to Rick's response. One is in terms of promoting entry as Professor Yoo has been suggesting. There really is a lot of entry already and I mentioned what Verizon Wireless is doing with EVDO. There are alternative broadband technologies that are beginning to happen and many of the players who were in the ISP space who have been most vocal on the access issues are in fact doing partnership with a lot of these alternative providers. So they are beginning to find other ways to get into the market and different ways that make sense for them.

In addition, the market is changing. A lot of the ISP's no longer are worried about physical access. They're worried about the content they are selling because that's a lot of where the value is. So you see AOL today with bring your own broadband. Why? Because that's a good market for them. They essentially are connecting in effect at a higher level on the Internet so they're not worried about the physical access and they know that they are going to be able to get to the entire, essentially national base that they have today.

So the market is already changing a lot and I think that's another point that people aren't recognizing. Companies do look at how they can get to the customer. They know how they can get there. They know how to invest to create new value and so it's really changing a lot already.

One of the things I have a real problem with is that a lot of the regulatory proposals tend to lock in a static view of the marketplace, which is the point that Joe is making. That's not a good thing. We want to continue to encourage people to find new ways to address the market and come up with new innovations.

Randolph May: All right. John.

John Nakahata: I guess I would just make this observation. I think we are ultimately coming down to the question: Are we jettisoning not the regulatory paradigm, but the underlying normative values. Do we expect our networks to connect everybody to everybody and to allow you to pass the messages that you want to pass?

Some of what we're talking about here does come awfully close, if not explicitly saying, we are jettisoning of that. It may be right. It may not be right. But you have to ask yourself: Are you ready for the world where you call Lands' End and they say, "I'm sorry, you can't get there because we have a deal with WalMart."

Randolph May: Okay. Joe.

Joe Waz: If you do place your confidence in marketplace forces, and I do because I think we have proven time and time again that if you break down barriers to entry and get more networks out there, those problems go away. To have the kind of overhang that Rick proposed with an 18 month or two year deadline, I am sure that would give Craig McCaw, BPL providers, along with a lot of other folks, a disincentive to be investing money in competitive networks knowing that these rules are waiting for them at the end of the road.

Randolph May: Great. Well, I think we've really set up this debate and framed it quite nicely. Now what I want to do is this. We'll have a couple questions if there are any from the audience and then we're going to go into lunch. Our lunch speaker, Ken Ferree, is here. I'm hopeful that all of these gentlemen will actually be with us at lunch, and we're going to have a question and answer period. We can even call them back up

for more if we want to. But do we have a couple questions right now? Just identify yourself. The mike is going to come up in a minute. We're taping this.

AUDIENCE MEMBER: My name is Logan Clarin and I work with GAL. My question to the panel is could you speak to the lessons from Japan's developing broadband policy either positive or negative, what you see is coming out of that?

Randolph May: Anyone want to speak quickly to the Japanese experience?

PANEL MEMBER: A couple of points on that. I don't know all the details about Japan, but I did talk to the economic counselor recently and he talked about their experience. One thing he was asked on this whole issue about unbundling is: Do they unbundle? They do require loop access, but they don't have a UNE-P regime or anything like it. They certainly don't have the kind of extensive unbundling process that we have.

They do have a lot higher penetration, but there are a lot of reasons for that. It has to do somewhat with culture. Gaming is bigger there to some degree. But their speeds are today around 26 megabytes and part of that is because they have shorter loops. So there are some things that make it easier for them to transition to a faster speed more quickly than the United States.

One of the challenges we have, that's one of the things that Verizon is trying to address with our broadband deployment, is that we have a network which needs upgrading and we're trying to do that. That's one of the reasons this policy is so important. It's a pretty challenging and risky undertaking, but we're doing it. I think the biggest issue from our standpoint is to finish the broadband policy so we continue to do the deployment.

PANEL MEMBER: Two quick thoughts. The Japan environment is affected by the fact that NTT is still 50 percent government-owned, and they have a public service obligation and it shows up in almost everything they do. So it's a very strange environment.

Actually I think the better example for you is South Korea. South Korea is even more successful and all that happened before unbundling hit. It is all facilities-based competition driven by private ownership.

Randolph May: Rick, did you want to say something?

Rick Whitt: Yeah, just on the Japan point, as Link mentioned, there is unbundling there for loops for broadband and that's precisely the MCI position. Give us the loops and we'll do the rest. Verizon's view is no, it's our fiber loops. Now it's going to be their hybrid loops. Soon it will be their copper loops. Nobody else gets access.

The Korean point is actually a very interesting one because I think part of it is the demographics of the situation there. There are five large cities. Lots of people live in apartment buildings. Cyber-cafes are very popular there. So I think it's somewhat

difficult to translate into the U.S. experience, particularly in the Tier 2 and Tier 3 markets and people live in rural areas. But certainly there are lessons to be learned from both countries.

Randolph May: Okay. What we're going to do now is adjourn to lunch. Again, these gentlemen will be available if you do think of questions. I want to ask you to join me in thanking all of them for what I think was a very, very informative program.

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