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"New Directions in Communications Policy"

A Celebration and Discussion of FSF's New Book

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The Scholars Panel

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P R O C E E D I N G S[1]

MR. MAY: What we are going to do now is move right into our next program with the scholars. I'm going to ask them to come up front and take their positions.

Thanks again, Blair.

In order to stay on schedule, we are going to start in 60 seconds. Let's go ahead and get started.

Each member of this panel is a contributor to the "New Directions" book, and I'm just going to introduce all three at the beginning together, and then they will speak in order.

The first speaker is going to be James B. Speta. Jim is a professor of law at Northwestern University School of Law. The chapter that he wrote for the book is titled "Refining the Landscape of Internet Regulation."

In addition to teaching at the Law School at Northwestern University, Jim teaches in the joint program of Law and Business operated by the Law School and the Kellogg School.

His research interests include telecommunications and Internet policy, antitrust, administrative law, and market organization.

Jim clerked for Judge Harry Edwards on the U.S. Court of Appeals here in D.C. and he practiced appellant telecommunications and antitrust law with Sidley & Austin before he joined the faculty at Northwestern.

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[1] This transcript has been edited for purposes of correcting obvious syntax, grammar, and punctuation errors, and eliminating redundancy. None of the meaning was changed in doing so. The editing assistance of FSF Adjunct Fellow Seth Cooper is gratefully acknowledged.

Jim, I know, is modest sometimes. He doesn't like me to say this, I know for a fact that several times he has been voted the outstanding faculty member at Northwestern, which is quite an honor.

With that, first we are going to hear from Jim, and then next from Christopher Yoo. Christopher is professor of law at the University of Pennsylvania Law School, and also profession of communication at Annenberg School for Communication at the University of Pennsylvania.

His chapter is "Network Neutrality After Comcast Toward a Case by Case Approach Towards Reasonable Network Management."

Christopher has written just prolifically for such a young scholar. He has testified before Congress and Federal agencies on communications law, Government regulation, and intellectual property.

He clerked on the D.C. Circuit for Judge Raymond Randolph and then also clerked on the Supreme Court for Justice Anthony Kennedy. Christopher, like Jim, practiced law before becoming an academic, and he was with Hogan & Hartson. I know when he was there, he worked with now Chief Justice John Roberts when he was at Hogan.

Finally, John Mayo. John is professor of economics at the Business School at Georgetown University's McDonough School of Business. His chapter is titled "Universal Service, Can We Do More With Less."

John has previously served as the business school's dean and he now serves as executive director of the Center on Business and Public Policy, which he founded in 2002.

His research interests lie in the areas of industrial organization, regulation and antitrust, and the application of microeconomics to public policy.

Professor Mayo served as chief economist for the U.S. Senate Small Business Committee on the Democratic staff, and he has a Ph.D. in economics from Washington University in St. Louis.

With that, we will get started with Jim.

PRESENTATIONS BY CONTRIBUTING BOOK AUTHORS

PRESENTATION BY JAMES B. SPETA

MR. SPETA: Thanks, Randy. Thanks for having me here. It's always nice to come out where the action is, as it were. It's a little disconcerting because even in the 30 minutes I've been here already, I can tell there is a coded language being discussed that out in Chicago, we're not exactly in tune with. That's a little bit of a link to my essay, and thanks to Randy again for putting the book together. I commend the essays to you. We're going to sign copies, right?

[Laughter.]

MR. SPETA: I just want to say a few words about the piece that I wrote and then a little bit more about how the piece relates to what's happening now. I quipped to my Dean, before tenure, unfortunately, that I was going to switch from Internet law to English legal history because I was tired of re-writing everything in midstream because things were changing so fast, and I've been trying to re-think what I had to say today just on the basis of what Blair said just before me.

That's because my essay was really a call for some serious thinking about first principles of communication regulation, whether there was in fact market conditions that justified regulation and what that regulatory regime should look like.

I set out a series of questions that I thought should be asked. I thought about the idea of using something like the Antitrust Modernization Commission in order to tackle this, right, which I think may have the benefit of taking it a little bit outside the Beltway.

I don't know whether that is a philosophical point or not a philosophical point because I'm not sure what is meant by "philosophy."

What I mean is rigorous attention to the underlying facts, whether there's a competition analysis and what is the justification for regulation.

At the time I wrote it, the essay came from two concerns. The first was that the FCC as it had currently and in the recent past operated had sort of lost sight of strategic thinking that I think had happened under several prior Administrations.

The more specific impetus was the Comcast order and a couple of reactions that I had to the regulatory philosophy, I suppose it was philosophy, of the text of the Comcast order itself.

In brief, I was simply astonished by three aspects of the Comcast order. I was astonished that the FCC had based its holding on a quasi-antitrust story that Comcast had an incentive to discriminate against unaffiliated video content, without doing what any of us would have recognized as an antitrust analysis, defining markets, market power analysis, et cetera.

The second reaction was I was startled that the FCC acted as if its long-standing policy of Internet de-regulation was merely something of its own discretion and not something that flowed from the Communications Act itself.

Third, I was amazed to read that the FCC believed that it had as much regulatory authority over folks on the Internet space as they had always had over

common carriers to regulate rates and terms and conditions and everything going to the customer experience.

I don't want to dwell too much on the Comcast order because the D.C. Circuit is going to tell us soon enough what it thinks and I've run out of synonyms for the word "surprise."

[Laughter.]

MR. SPETA: My essay called for an expressed discussion of fundamental case for broadband regulation. Such analysis, as I said, would better allow us to answer not just specific questions about what if anything we should do about network neutrality, but address the broader question of why do we continue to have special regulation of this particular industry.

My essay was put into the can, however, just before the Recovery Act passed. As Blair was talking about, all you guys talk about here in D.C. is the broadband plan. I guess you say that in all caps, THE BROADBAND PLAN.

Let me say a few words about how my thinking interacts with the broadband plan and in fact, with a few things that Blair has already said.

There is good to the extent that it generates the kind of data on deployment that it is trying to generate. It should give us a better view of what the landscape for broadband services are, a better sense of how many providers are using what kind of technologies in exactly what geographic markets, together with a better sense of what sorts of deployments can reasonably be expected.

The workshops have brought together industry and academic leaders, lawyers and lobbyists, [and] representatives of corporations, in a wide ranging discussion of myriad issues of the future of the Internet.

Both of these are important. But they're not a competition analysis. Some of the data may--if it comes out better than prior exercises--generate predicates of a competition analysis. But it doesn't seem posed to ask broader questions, which is disappointing.

I don't particularly fault the FCC. I understand what Blair has to say. Since I'm an academic who doesn't live in the Beltway, I can say it is Congress' fault.

The Recovery Act starts with an unjustified assumption that a comprehensive Federal broadband policy is a good thing, and why does it think that? Well, the Recovery Act asks the FCC, in my view, to consider far too many issues with far too vague goals. Had it only focused on the issue of deployment to all parts of the country, say a classic universal service goal, which John will probably talk about more, that would have been a big job in and of itself, but more manageable.

The inclusion of everything from education policy to electric smart grids, health care, jobs, et cetera, simply detracts from what at least to me is the fundamental question, which is as I've said: why do we continue to have special regulation of this industry?

At one time, we had an answer, remember: the telephone company was a monopoly, utility regulation protects consumers from monopoly, and utility regulation requires a special kind of regulator.

The answer implied by the Recovery Act is simply: broadband is important. Maybe that's in all caps again. “Important” has not been a basis for regulation. Threats to health, market failure, needs for the provision of essential goods; those are justifications for administrative action.

I will note that the FCC itself, at least in a few places in the Notice of Inquiry, had compounded the problem by following the line that it put forward in the Comcast order, that it now has the authority and the interest in regulating all aspects of the consumers' satisfaction with their Internet experience, because consumer satisfaction with the Internet experience will drive demand and demand will drive supply. This reasoning has very little delimitation to recommend itself.

To take one example, the NOI includes Internet privacy matters within its orbit, notwithstanding that the FTC has previously had stewardship of this issue, saying that concerns over privacy may deter adoption.

Let me be clear, I do think one can make a case for some continued regulation of some aspects of communications. Randy and I don't agree on everything. That case is going to be more limited than either the FCC's Comcast order or the matters encompassed by the broadband plan in the Recovery Act.

Why is it important to rigorously delimit that case, to carefully draw the boundaries and the basis for regulatory action? It's because if we do so, it drives better answers in particular controversies, and it should take a whole host of controversies simply out of the public debate.

Let me close by saying a few words on net neutrality, although I know Christopher is going to pick up this thread in much more detail, especially because some of the parties have sought to make the broadband proceeding about network neutrality.

The big divide in the net neutrality debate is between those who think all discrimination however conceived is anti-competitive, and those who believe discrimination is only a problem when it is anti-competitive. I think it's fair to say Christopher and I are in this latter camp.

Although the broadband proceedings may help us to some extent on the issue of how much competition now exists, competition analysis is too much in the background. Economics is too much in the background. Broadband in general is not a monopoly market. To the extent that it is a duopoly or something more, we will get a peek at this if the numbers come out in the near future. I'm hopeful the numbers will come out.

Until that is translated in general and in specific cases into a competition analysis in the modes that I suggested in my essay, net neutrality regulation, any of the traditional tools of communications regulation, what indeed we are up to when we are talking about communications regulation, is a question we just can't answer.

Thanks, Randy.

[Applause.]

MR. MAY: We're going to hold our questions until the end. Be thinking of questions. When we go through the presentations, there will be time to ask those.

Christopher?

PRESENTATION BY CHRISTOPHER S. YOO

MR. YOO: Thank you. It's a pleasure to be here. I'm happy to talk about the chapter. It is about network neutrality, as Jim indicated, and I think of it as the gift that keeps on giving, since it never seems to go away. That being the case, it's one of these things where it is one of the problems of living on Internet time.

It was written in February, as we said, before the Recovery Act was passed, and in fact, the debate has moved so far beyond it, that I'm going to draw on the chapter but not speak directly to it. The question I'm going to ask is: what can we take

from that as part of the debates about the broadband plan and how to implement it on a going forward basis?

Basically, the network neutrality debate, as everyone in this room knows, is asking for what I think of as categorical bands on certain kinds of practices. That is discrimination on content, on the basis of the source of the application with which it is associated, charging different amounts for different levels of service, and charging generally premium prices, different levels of service for different providers.

Basically, Comcast rejected embracing any categorical approach to this in favor of a case by case approach, and the interesting question that the FCC now faces, and people like Blair face, is what to do about that.

It's interesting to me. I've been called many things in part of this debate. I've been called both a regulationist and a de-regulationist. It is interesting because I have largely favored a more or less permissive approach in this space, but some people have constantly asked me why even go case by case. Why not open this up to a complete per se legality? And the scholar in me says that as a purely theoretical matter, it is possible to create situations where harm could possibly exist.

The good news, for those of you who are antitrust lawyers, the antitrust laws and the Supreme Court's antitrust jurisprudence, gives us a very nice framework about how to deal with these sorts of problems.

The first is if something is always harmful, we call it per se illegal in antitrust law and you categorically ban it, or in actual Supreme Court lingo, if it's always harmful or so rarely harmful, it's not worth the time and effort to sort out the wheat from the chaff, you allow it to happen. If it's something that's always beneficial, you call it per se legal and you always permit it.

The interesting case is what happens in the ambiguous case, if it is sometimes harmful and sometimes beneficial to consumers, innovation and so forth.

The Supreme Court's answer is to apply something called the rule of reason, which is a case by case approach. The most important aspect of which is it puts the burden of proof on the person challenging the practice. Why? If you put the burden of proof on the other side, ambiguous practices disappear.

If you put the burden of proof on someone to prove what's going to happen once it emerges, it stifles the kind of experimentation we have seen that engineers and economists have done on the network to make it really vibrant and evolving. What is really interesting in this analysis, in the core of this analysis, is that there -are there benefits to providing these kinds of practices that network neutrality would oppose.

The bulk of my work has been exploring--and that's what I'm going to focus the rest of my remarks on (and the way I would say this a little bit more broadly)—is the failure to appreciate that there are benefits to deviating from network neutrality causes network neutrality opponents to misinterpret practices, or potentially misinterpret practices.

What you may see is, in fact, network providers are innovating ways to try to make the network better, more functional, serve different consumer needs. You can't always infer that from their practices that they had an anti-competitive motive.

The other thing that I would say that is really striking to me is a lot of the discussion has been about economics. I've actually spent most of the last six months trying to bring in the engineering literature to try to understand what's going on, and what strikes me that both engineers and economists share is the acute sense of tradeoffs, that solutions, absolute categorical positions rarely make sense, and the hard part of policy

making, as Blair said earlier, is making those tradeoffs. And what I find is the debate has missed sort of the fact that there is a baby in the bath water that we might be throwing out, and part of the rest of the talk is going to be to start to explore different kinds of the baby, different aspects of the baby.

First, the Internet is not what it was when it first emerged in the mid-1990s. In fact, what we may see is a radical change in the way people are using the network, and the point I'm making here is the natural thing we should expect to see is the network to evolve in response.

The network began as standardized, in a very, very uniform way. That makes complete sense if everyone wants the same thing from the network. If everyone wants the same thing, you create one network and you optimize it a certain way for what people want.

Guess what? That's true generally, but not all products are standardized across all industries. In fact, what you will see, as people want changes, you naturally expect the firms that are providing those services to evolve and start offering a more differentiated set of offerings in response.

What have we seen? We have seen a radical change in the heterogeneity of what people want from the network, the way people are using the network. A~~, a~~nd the point I would like to make is that what we may see is the evolution of the network. This may be nothing more than the natural response of industry players to meet the increasing heterogeneity of demand of what people want from it.

What you will start to see are~~is~~ these sorts of evolutions. Most of you are familiar with it. What are these innovations? It's basically the change in applications that are becoming much, much more demanding.

We have talked about VoIP. The big question now is video. There are a very complex set of arguments saying a streaming video can be buffered, stuff about pre-recorded non-interactive might be downloaded the night before, the way the BBC is trying to do with its I-player. It's a very, very complex and different situation.

What you will discover is different solutions work better for different kinds of content. Even lumping it together as video is too general because different kinds of video content are susceptible of different kinds of solutions.

Depending on what the particular niche each player is serving or the customer base is demanding, what you should likely see is different technical solutions to those exact problems, and it shouldn't be surprising.

Something that's not in this paper but is part of my work, the different technologies that make up the Internet have completely different capabilities, different vulnerabilities in terms of available bandwidth, sensitivity to local congestion, reliability against packet loss, and you would expect those different technologies to implement different solutions at different times.

The traditional answer from a lot of the debate is: well, we just need to build bigger pipes. The point I've been trying to make in my work is that in fact building bigger pipes is not always available as a solution. Frankly, it's not a complete solution under any circumstances.

One, adding capacity may be impossible. The most easy case is wireless. As Blair said, there is an absolute limit. You can't simply go acquire more bandwidth. Even if you had sufficient bandwidth, you have to make forecasts of where it's going to go. Nobody is perfect.

You will get the geographies wrong. You'll get the services wrong. They are necessarily imperfect.

My favorite moment is the NSF net, when the PC deployed, the NSF net stopped having dumb terminals attached to it, and people started transferring files. What did the NSF do? It actually gave priority to terminal sessions for the people who were sitting there waiting and de-prioritized file transfer sessions. Otherwise, the guy who is sitting at the keyboard was running unacceptably slow.

Files that took an extra 60 seconds or even a couple of minutes to transfer, people expected that, and they could tolerate that.

This is not some sinister move by the NSF to try to hurt certain kinds of applications. It was just the natural response when they could not because of bad forecasting, because they didn't anticipate the PC revolution, and their inability to do that.

The other example is there is actually a tradeoff. Network management began with our alternatives. To me, the choices are illustrated very nicely between the best that Verizon has made on FIOS and comparing it to AT&T U-verse strategy. U-verse has less bandwidth and it's going to be cheaper to deploy in terms of capital investments.

It is not policy-makers' jobs to figure out who has it right. Two companies have bet their ranch on what's going to happen. If you watch the trade press, people have taken various opinions on the strategies over time, increasingly sympathetic or unsympathetic, and to me, this is exactly the kind of experimentation that we are trying to foster.

The other interesting thing, by the way, is even building bigger pipes doesn't protect you, as big as your pipes are, to the big surge that ultimately wipes out

your pipes. Even bigger pipes can never be a complete solution because the variability is just too huge.

Network management, always an alternative, and we need to create policies that keep options open. Instead of biasing it in one direction or the other saying network providers need to do it one way versus the other way, we need to have a policy that allows Verizon and AT&T to take the business strategies that they have without saying, oh, this one's better and this one is worse.

There has been a lot of criticism of tiered services saying only the rich get the fast lane, these sorts of aspects. What is overlooked in the debate is actually forcing everything into a single class of service actually disadvantages people who like the network just fine the way it was.

People often point to bloggers. Bloggers usually almost exclusively convey text. It's a low bandwidth, a latency tolerant application. If you force everyone into a single class of service and we upgrade the network, prices go up for everyone.

One of the problems is with a single class of service. What ends up happening is even the people that don't need the service are having to pay for it.

I think the idea that only the rich get the fast lane is just wrong. It confuses willingness to pay with wealth. Put simply, the example I constantly give is when FedEx rolled out, it is not true that only the rich used overnight mail and everyone else was cut out from it. Actually, what happens is only people who need it use overnight mail.

I still send first class mail for some bills that I'm not sending electronically now. If it gets there in three days, that's perfectly fine with me.

Forcing it into a single class of service narrows those sorts of options in ways that I think are actually quite harmful.

There is elaborate literature coming up on what's called two-sided markets. It's very technical. I'll just make it as simple as I can. The ultimate example to me is broadcast television. Broadcast television is actually analogous in structure to the Internet. You have networks that aggregate content like the backbones of the upstream ISPs, and you have last mile providers that are a lot like broadcast stations. They provide retail distribution on the bottom end.

If you look at the network neutrality debate, what they are really trying to do is limit the pricing flexibility that the broadcast stations or the last mile connector can really impose on content sources.

What's interesting to me is if you look at the history of broadcast television, there used to be a very uniform pattern, which was that networks paid local stations to affiliate. It's not a question of the last mile provider paying for those services. It made sense for the content providers to subsidize the last mile connectivity of television viewers.

Why on earth would they want to do that? The answer is advertising. If it's a national advertising world where it's flowing into the content provider's side, if they subsidize more connectivity, it more than pays for the cost of that subsidization by the additional advertising revenue by making their networks more attractive.

What you see is that was a historical pattern. What has happened since then? Most of you know. It has completely changed. Weaker television stations started getting charged more and paid less. In the extreme case, the direction of the class went

the other way. You're going to have to start paying us in order to stay part of this network.

Why? Because of the nature of the competition and the flexibility and availability of new data sources.

What does this tell me? In a real free flowing market, the magnitude of prices paid changes station to station and across time. The direction can even reverse.

All this is healthy and good. In fact, if you look at the actual theoretical literature on two-sided markets, it predicts all this. What it says is you have these markets, you should expect the numbers to flow to be widely asymmetric and in fact, you should expect the content providers to be subsidizing the connectivity of the last mile providers from time to time, which is what would happen if they had the kind of pricing flexibility world we talk about.

I don't want to run too long. There are implementation problems. The data show access mandates reduced investment in an alternative network capacity. This used to be primarily a theoretical argument.

If you look at the actual empirical literature that has now started to roll in, very consistently there is no correlation between an open access policy and broadband innovation, broadband investment, or last mile investment. And more to the point, it actually seems to be counterproductive in many, many cases. It's beyond theory. It's actually going into the hard data.

The other thing that's really interesting to me is the number of people in this debate who have no experience with regulated industries and the history of these problems.

These sorts of open access requirements have been tried. People in this room have lived through the words that you will understand, video dial tone, open video systems, least access, all these things.

What they discovered is that these sorts of regimes worked best when you're talking about natural gas or water where they are very simple products and their dimensions of quality are stable and don't change.

There is very vibrant literature and recognized explicitly in the Supreme Court's Trinko opinion, that when the product is complex, it's not just about regulating price and access.

One of my favorite 1996 UNE-access stories, someone came into a space and said I need to use the bathroom. The ILEC said to them, I'm sorry, the UNE-order said nothing about me letting you use the bathroom.

Anyone who has lived with regulated industries knows this. I loved airline regulation, where they had rate regulations, so they competed on meals. We started writing secondary legislation about what could be a meal. They said it had to be a sandwich for lunch. They put a steak on a piece of bread. We now have a regulation about what sandwiches are. You understand this. This has been the kind of world in a world where products vary, and it doesn't work.

The thing that always bothered me the most and one of the things I'd like to interject into the debate is access regimes have no exit strategy. In fact, they imagine perpetual regulation. The idea of stimulating additional investment envisioned today, even though it takes a long time, let's say DBS is going to diversify the multi-channel video world, well, it was authorized in 1984. It took over a decade for it to become a real competitor.

What the people would say is the important thing is not that it took so long, but that it happened. Cable said we're going to start doing voice. People said: when is that going to happen? It's now a reality. It's enriching the reality. We now have multi-channel competition and voice competition in ways that are quite vibrant.

In a way, I think that people misunderstand that even though it takes longer than any of us would like from a policy standpoint, now that we have those worlds, we're in a position where we can get the Government out of these roles and start to allow the market to take over.

If you regulate access and keep the prices down, you basically destroy any incentive for anyone to build that third pipe to the home. There is no reservoir of frustrated content providers who are worried about their access.

I always loved the fact that the investment by content providers and equipment providers after Brand X and the 2005 decision spiked, because they were worried about losing regulatory access. Of course, they started making strategic partnerships with other last mile providers in ways that I think are very, very beneficial.

What is interesting to me is they say “oh, let's regulate these rates” without having any conception of the problems of defining a rate base, the problems of defining a rate of return, capital expenses versus operating expenses, and all the problems with classification. All of that has completely been eluded in the debate in ways that I think are bad.

In conclusion, what would I say? I would say policy makers really need to create a balanced perspective to understand that practices have benefits as well as potential harms. As for providing the data to policy makers to figure out what that's going to be, the interesting thing is it's not static. It's not as if Blair is going to sit here

and put together the data that you give them and create a situation that's going to be unchanging for all time. It's going to vary across the network and it's going to vary across time.

We need to create policy structures that allow the breathing room for that kind of evolution to occur. One size fits all solutions won't work any more. That vision is from a world in which a limited number of users use the Internet for e-mail and web browsing across a telephone provided line, whether it's a dial up or a T-1 line. We now have a much more heterogenous world in terms of applications, users, technologies and business relationships.

Lastly, the one thought that isn't as strongly put in the paper, in the chapter: a lot of people have said the problem with case by case is it would lead to regulators designing networks, which I agree would be a disaster.

I actually have more hope for case by case. I think the Supreme Court has done a very good job having a regime of case by case in terms of principles that are predictable and take competition policy and innovation policy seriously. And particularly the way things are set up now, it makes more sense to talk in a constructive way about how to do that sort of regulation than it does to tow the line and say we should declare this be per se legal, because I think that as a purely theoretical matter you can't actually make the case. But frankly I actually think in practice, the real reason ends up being a very restrained means for enforcement and intervention, and hopefully we can create a policy here that would have a similar effect.

Thank you.

[Applause.]

MR. MAY: Thank you, Christopher. Listening to these gentlemen almost makes me wish I was back in law school again, they are so good. I'm really proud that they are members of the Academic Board for The Free State Foundation.

I'm sure once I listen to John, it will make me wish I'd gone to business school as well.

John Mayo.

PRESENTATION BY JOHN MAYO

MR. MAYO: Randy, thank you very much for the chance to be here today. I wanted to especially thank you for inviting me to write a chapter in the book on the subject of universal service, which is a subject that I've spent the last 20 years thinking about.

Many of you at that point started to think what a sad, pathetic life that this man has led.

[Laughter.]

MR. MAYO: I have done some other things. I'd rather show you pictures of my fly fishing trip this Summer, but that's not what I was invited here to talk about.

Let me take just a few minutes to talk about universal service. In this chapter, I look at the underlying economic principles of universal service, the evolution of universal service, the effectiveness of universal service, the cost, and the challenges and opportunities that confront us in the realm of universal service on a forward going basis.

I do this in a way that I hope will be really quite clear, and that is to ask an economically, I think, rather profound question. Can we do more with less? Can we do more with less?

In some ways, that question itself by an economist is somewhat heretical because the basic proposition in economic science is that we live in a world of tradeoffs, that you observe optimized situations and necessarily have to make tradeoffs of getting some good while giving something else up.

In this particular instance, what I'm going to suggest to you is that we can answer this question--Can we do more with less?--in the words that were made famous by then candidate and now President Barack Obama, "Yes, we can."

Yes, we can do more with less on the subject of universal service. (Notice on the slide you will see an exclamation point, and that is something that in Washington really should connote a very close debate that someone intends to win in a political sense by pounding his fist or her fist on the table when adding exclamation points.)

I want to distinguish my exclamation point from those of politicians in this regard. My exclamation point reflects not a sort of lone voice trying to pound his fist on the table and carry the day, but rather an honest representation of where the economics community is in this regard; not just my own research but a consensus opinion of economists has suggested that yes, we can. Yes, we can do more with less in universal service.

An example that I have drawn from the literature, one of many, suggests that "The welfare losses endured in the name of universal service have undoubtedly totaled in the tens of billions of dollars over the years."

That was spoken or written in 1998. We have now had well over a decade of universal service expenditures, and as I will argue, perhaps mis-spent dollars over that period. So, this is certainly an understatement.

Just to give a sense of this and to give a perspective, many of you will be familiar with this, (on the chart you will see that) we spend every year in terms of universal service subsidies right now, over $7 billion of subsidized universal service funds to promote universal service in this country.

That seems in an absolute dollar sense like a lot of money to me. It might violate your sense of sensibilities. Just to put it in perspective, let me mention two other programs. We could pick on others. Let me mention two. The trade adjustment assistance expenditures. This is the country's primary tool, economic policy tool, to blunt the force of globalization of inevitable job losses that will happen as jobs shift globally.

We spend less than $1 billion a year on that primary economic policy tool in this country. Everyone, I think, would agree that is an extraordinarily important policy. We spend one-seventh on trade adjustment assistance than we do subsidizing telephone service in the United States every year.

The Job Corps program, (which is the other bar up here,) is similarly a program that is vitally important to the economic policy of the United States. We spend less than $2 billion a year on Job Corps. Job Corps, of course, is a program designed to train and educate our disadvantaged youth to get them ready for the workforce.

It seems perhaps to me and perhaps to you, too, that this might violate your sense of sensibilities about how we spend our universal service dollars.

The theory the chapter deals with, the theory of universal service, I'll commend to you to read. I brought my signing pen. Please feel free to talk to me later about that. It will make a great gift for Christmas.

Let me say that in some ways, the notion of an academic discussing the theory of universal service seems a bit moot at this point. The train has left the station,

both in terms of narrow band telephony and broadband telephony, we have adopted a policy goal of universal service.

I don't think it is mis-spent writing or words to reflect on what the underlying economic motivation of universal service is because it has the prospect of fine tuning our policy and improving in the future.

Of course, the foundation for universal service is something called network externalities. The prospect is that the value to society in either a narrow-band or a broadband telephony system, exceeds the private values that individuals might place on subscriptions, so absent some public policy, you might have an under-subscription to either narrow band or broadband telephony.

The reality is probably that policy makers were not motivated as much by a network externality argument as they were by just a plain old pure political drive that said it is unacceptable to have service not available and not subscribed to by some segments of society, whether they are the poor or rural citizens. We do deal with that in this.

The evolution of the system. Many of you will be familiar with this. Let me just go through this very quickly in stepping stone fashion because I want to draw on a couple of points.

In 1907, Theodore Vail, from the private sector, not the public sector, was the first person to articulate the notion of universal service, under "one system, one policy, universal service." By 1934, that had moved into a public goal, in the Federal Communications Act, to make available as far as possible to all people of the United States a rapid, efficient nationwide wire and radio communication service.

By 1996, that goal was beginning to move into the broadband world, by [the Telecommunications Act] saying the FCC and states shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.

Again, notice here we are focusing on deployment and making available these services.

By 2008 with the Broadband Data Improvement Act, we see a shift in the rhetoric and the language of the law. The preamble to that Act says "The continued progress in the deployment and adoption." Now we have shifted from deployment to deployment and adoption "of broadband technology is vital to ensuring that our nation remains competitive and continues to create business and job growth."

Of course, with the Recovery Act, we now have a mandate for the FCC to develop a national broadband plan that "Shall seek to ensure that all people of the United States have access to broadband capability and shall establish benchmarks for meeting that goal."

There are several things to take away, I think, from that evolution. Number one -- these are simple observations but I think they are relatively profound as we look forward -- corporate and governmental goals of promoting universal service may not be at odds with each other. They may be quite complimentary.

After all, private corporations have it in their interest to promote services to as wide a possible set of customers as will pay for their services. It may not evolve to the entire nation, but these goals may be complimentary rather than substitutes.

Secondly, it is quite clear that the language of universal service has moved us from a narrow band world to a clear focus on broadband and that begs the question: well, what shall we do about narrow band?

Finally, there is a transition in the evolution from the term "availability" or "deployment" to "deployment and adoption." The addition of that word "adoption" is going to create special challenges for us as we move forward.

If we look back, what lessons might we have learned from the narrow band world? In narrow band, we now know that 95 percent of all households have access to a telephone, that there are 270 million handsets out there. What do we think about that? We have done that at a very significant cost. (I showed this slide earlier.)

I think it is time to declare victory and move on, to change our focus from what is clearly a 20th Century policy to move forward to a 21st Century policy.

If we are going to move forward on broadband, how does that look? (If you look at the broadband deployment rates, these are data taken from the FCC.) I applaud everyone's emphasis on data acquisition.

Here are the data provided by the FCC in terms of broadband deployment in the United States. We have moved in what I think to be a relatively short time from 2000. In the year 2000, we had five million broadband lines deployed in the United States. In the year 2000, we had five million. Today, we have over 130 million broadband lines deployed.

Just to give you a sense of this, there was a mapping done in the State of Tennessee. (Pink are areas where wire line broadband is available and the area of blue is areas where wireless broadband is available.) You will see that deployment is happening

in pretty rural areas already if you start thinking especially in terms of wireless service. This is not counting satellite provision of broadband.

In terms of the adoption, it has happened very quickly. (This is a chart, and some of you will be able to see this better than others, but it is simply on the horizontal axis counts the number of years from the time a technology has been conceived and plots on the vertical axis its deployment rate.)

You will see that broadband service tracks as being deployed much more rapidly than was color TV or the VCR or the cell phone, about the same rate as CD players or the personal computer, at a very rapid rate.

I struggled to find and finally was able to find something that deployed more rapidly than broadband and that is opinions about broadband deployment.

[Laughter.]

MR. MAYO: That's the only thing I've been able to find that has exceeded broadband deployment rates.

Please excuse the simplicity of these statements, but there are a fundamental set of economic principles that I think will serve us very, very well as we look toward broadband.

They spring both from economic science and from the lessons that have been learned through mistakes we have made in the narrow band world.

Number one, we need to establish clear goals about what is to be accomplished by the subsidization scheme. I won't go into it in detail here. I talk about it a little in the chapter.

We failed that goal miserably in the narrow band world. We simply didn't make it clear what goal it was we sought to achieve and to accomplish. We need to be

extraordinarily clear about what the goal is we seek to accomplish with subsidization in a broadband world.

Number two, we need to make the subsidies explicit and transparent. Again, I won't belabor the fact, but we missed the boat on narrow band and it cost us dearly in that regard. Subsidies wound up getting worked into inter-carrier compensation schemes. They distorted prices of local telephone service, of long distance telephone service, all in the name of universal service, and nobody knew where those subsidies were buried. We certainly don't want to make that mistake in a broadband world.

The third and fourth one here that we need to collect the subsidies from the widest possible funding base and we need to target the assistance to those people and parties that are in need of assistance.

We need to fund it broadly and target it narrowly. Again, in the narrow band world, a lesson that we have learned is we did things exactly the opposite of that. We funded the narrow band subsidy very narrowly by putting it on the back of long distance usage, and we targeted very broadly, we gave the subsidy essentially to everybody. We need to reverse that as we move forward in a broadband world.

The final point I make here is perhaps a bit cryptic, that we need to design subsidies to relax complimentary binding constraints to the achievement of the goal. The job of universal service in the broadband world is going to be more complex than the achievement of universal service in the narrow band world simply because if nothing else, people need a computer to subscribe to broadband.

It doesn't matter what price broadband is. It doesn't matter if it's available or not. If you don't have a computer, you likely aren't going to buy broadband service, no matter how affordable it~~hat~~ is.

We need to think more broadly about removing binding, perhaps, complimentary constraints.

In conclusion, I think we certainly have achieved universal service in a narrow band world. We did it at too high a cost. We paid too high a price.

There is certainly at this particular moment an opportunity to reform the system, to change the system and not simply bring the mistakes we made in the past forward and adopt those in a broadband world, and by adhering rather rigorously to these economic principles, we have the opportunity to craft a nice set of economic policies for the achievement of the goals that Congress and the President have set out for us, and to do that in a manner that cost less. We can do more and at lower cost.

Thank you very much.

[Applause.]

MR. MAY: Thank you to Jim, Christopher and John. We do have time for questions. That is always important at a Free State Foundation event.

One thing that I might ask the panelists to think about, since a lot of the focus today has been on the broadband plan, and then you can think about it, and if there are other questions, we will come back to you, but if you were giving advice to the FCC today, just name, if you can, two or three points that you would say to them in terms of what should be in the broadband plan or how they should approach it. That might be a way to summarize some of the thoughts we have had.

MS. ESBIN: Barbara Esbin, the Progress and Freedom Foundation. I have a question for Professor Yoo. I think I know the answer. I just wanted you to clarify something.

When you advocate a case by case approach for net neutrality violations, we'll call them, I presume you mean under the antitrust laws rather than under the Communications Act. Could you just address that?

MR. YOO: The locus of where the decisions are made is frankly less important to me than the principles animating it. If you look at the Trinko decision itself, it puts a clear preference in putting it in an agency. It says that antitrust courts cannot oversee the kind of cost information in a sustained sort of way.

I always go back to Richard Posner's original study of what he called regulatory decrees. He said the institution of a regulatory decree is in fact a concession by the antitrust court that the case probably should never have been brought.

It is just one of these things that these kinds of access decrees would require ongoing oversight over a long period of time. One of the great things that people don't realize is that Terminal Railroad went to the Supreme Court four times. We all cite the first case.

It's one of those things. All of a sudden we have the courts overseeing these things, and with Trinko, the implication is the better locus for that kind of decision-making would be in an agency.

I know there is a lot of debate over: is that right, is that the only way to do it and which agency? Many people say the FTC instead of the FCC. I'm reasonably open minded about it in terms of sort of drawing on other insights other people have had, but I think it's less important where that happens and more important that it happen with the burden of proof on the person challenging the practice.

If you really want to go way back, there was a huge fight in the 1900s: should we replace all case-by-case decision making, what we call common law, with

statutes? There has been a general assumption that we haven't completely gotten rid of common law, and as ambiguous as it is, we still know the tort laws and we still manage to adjudicate traffic accidents.

There is a way you can do case-by-case adjudication if you give people clear guidance, whether it is something like the merger guidelines or safe harbors or something of this nature where there is actually some hope to be able to do it.

MR. MAY: I want to note we have two of the very best communications trade press reporters back there, Adam Bender and Ted Gotsch. I want to make sure you get recognized. They are two of the best.

Dan?

MR. BRENNER: Dan Brenner with Hogan & Hartson. This is a question for Professor Mayo. By the way, it was a terrific panel, Randy.

Anybody who has studied universal service for 20 years deserves admiration and sympathy.

[Laughter.]

MR. BRENNER: I've been thinking about it myself recently. When it started out, it was low cost dial tone service. I think part of it had to do with emergencies, if someone has to call a doctor, there better be a phone handy to do it, in addition to some of the other points you made.

We are now at a point where I think there is a general consensus that there should be universal broadband, certainly deployment and adoption, too.

Internet access is a different kind of product than dial tone service for an emergency phone call to a doctor. There is a lot that goes on. We all know the things that make broadband essential to being a citizen. There are some things you can only do

with the Government now on the Internet. The D.C. Government makes it hard to do anything without the Internet. Lots of other things you can't do, it's hard to buy a plane ticket without being on the Internet. It costs more.

There are lots of reasons why you would want to see universal broadband.

What are you worried about, however? Since you stated the problems with telephone--voice, what should we be on the look out for in terms of the problems with an universal broadband model?

MR. MAYO: That's a very good question. I think the thing that I worry most about, since worrying is a theme of the conference now, what I worry about is that there may be a policy minutia, that as we move from a focus on narrowband universal service into the broadband world, that the policy minutia will bring forward many of the same mistakes that we made in a narrowband world into a broadband world.

Because of what you said in the first part of your statement and question, broadband is a more complex and more expensive service. Any mistakes we made in a narrowband world will, I believe, compound by an order of magnitude in a broadband world, if we don't adhere to those principles.

MR. YOO: If I may, our first conference was on the 25th anniversary of the break up of AT&T. I did a panel on intercarrier comp reform, the future of inter-carrier comp. Jim was on the panel. It was a great panel.

It rapidly became a panel about universal service, and what they said -- my panelists were Jerry Brock, Jim, Kevin Werbach and Simon Wilke, former chief economist.

Three of the proposals came down to what are we going to have to pay the rurals to buy them off. A pure political solution. I don't mean to take anything away

from what John is saying, principle gives cover, you know, policy is an important part of the debate, but the fact that a panel as diverse as that was so D.C., inside the Beltway, ruthless about what it was going to take to get the reform, to me, was very revealing, coming from a set of academics who are probably less programmed than anyone in this debate to think in those terms.

MR. MAY: Scott?

MR. CLELAND: Scott Cleland, Precursor.

Blair started it by saying this isn't going to add up, and the whole reason for the panel is we have a national broadband which you connect to. Really, I think, a national broadband plan is a stand-in for universal broadband service, in the sense that we haven't talked about that, but that's my question.

The national broadband plan, if it doesn't add up, it's going to lead somewhere to your area, John Mayo, where your 20 years of waiting in the wilderness will be rewarded because I think it's where everything is going.

[Laughter.]

MR. CLELAND: My question is, and what I thought was very interesting, you said one of your things was collect subsidies from the widest possible funding base. Agreed.

What are the principles beneath that principle about? Is it people who use it the most? Is it people that benefit the most? What is the analytical construct of how you figure out how wide?

MR. MAYO: There are two parts of this, Scott. One is on the funding side and the other is on the expenditure side. On the funding side, I'll offer an all too easy solution; that is, it should be funded out of general tax revenues, ideally. Or the widest

base possible of users of telecommunications service, which approximates today that same body of taxpayers. The widest possible base on the funding side.

On the expenditure side, it's not my job as an economist to identify the parties that are worthy of receiving those funds. But my sympathies lie most with those people who could not otherwise afford broadband universal service as opposed to rural interests, as Christopher said, citizens in rural areas. There are many citizens in rural areas who are quite wealthy.

I know there are some discussions about providing specific one time broadband grants for deployment purposes in rural areas. I personally find that to be much more economically palatable than providing an ongoing set of subsidies to rural areas.

MR. YOO: I think John's presentation about the dangers of being captured by the past sort of makes my point about how we need to be flexible about new technologies.

I might take it a step farther. I might be prepared to give up on wireline altogether. If you look at how broadband is deploying in rural parts of the globe, they are skipping the wireline step entirely and moving directly to wireless.

From a capital investment standpoint, that is a much more sensible way to do it. Even John says we need to think about PCs. If in fact the future is wireless, we don't. The platform for universal broadband connectivity may be the smart phone.

Don't get me wrong. Wireline has done this country very, very well. The point I'm trying to make is not let's do wireline instead of wireless. Regulation should not be making that decision. We should create a structure where both models are likely to succeed because the world in which we live in is littered with the corpses of people who

have bet the ranch on business plans that didn't pan out, and will continue to be so in the future, and that's a wonderful thing.

MR. MAY: I agree it's a wonderful thing. I'm going to have Jim speak and then if Christopher and John have just a few seconds, we can do that.

Commissioner Baker is here now. I want to wrap it up. Jim, why don't you take just a minute?

MR. SPETA: All I wanted to respond to is Scott's suggestion that the broadband plan will become about broadband universal service. As I indicated, my great fear is that it's really about so much more based on the way it's written. If it were only about universal service or deployment, I'd prefer John's narrower definition of what universal service means.

Imagine the world in which the Federal Communications Commission doesn't worry about broadcast any more because Blair is right, we kicked the broadcasters off the air.

Second, imagine the world in which the FCC doesn't worry about indecency matters any more. Imagine the world in which the FCC doesn't worry about universal service, which is actually the thing maybe John doesn't want me to take, but I take away as one of the most important questions to ask, don't worry about it.

Imagine what they could focus on with all their resources.

MR. MAY: With that theme of worry still at the forefront here, I think that's a good place to end. I think this has been an absolutely terrific panel. I know it was educational for me. Please join me in thanking these scholars.

[Applause.]