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INTERNET EVERYWHERE: BROADBAND AS A CATALYST FOR THE DIGITAL ECONOMY

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PARTICIPANTS:

Introduction:

KAREN DYNAN
Vice President and Co-Director, Economic Studies
The Brookings Institution

Presentation:

ROBERT LITAN
Director of Research
Bloomberg Government

HAL SINGER
Managing Director and Principal
Navigant Economics

Moderator:

DARRELL WEST
Vice President and Director, Governance Studies
The Brookings Institution

Panelists:

JAMES CICCONE
Senior Executive Vice President
AT&T

THOMAS HAZLETT
Professor of Law & Economics and Director,
Information Economy Project
George Mason University

BLAIR LEVIN
Communications and Society Fellow
The Aspen Institute

ROBERT LITAN
Director of Research
Bloomberg Government

MICHAEL POWELL
President and Chief Executive Officer
National Cable & Telecommunications Association

HAL SINGER
Managing Director and Principal
Navigant Economics

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P R O C E E D I N G S

MS. DYNAN: Welcome. Thanks for coming today. We appreciate your coming out in the rain. I'm Karen Dynan, vice president and co-director of the Economic Studies Program at Brookings.

I'm pleased to introduce Drs. Robert Litan and Hal Singer, coauthors of the forthcoming eBook "*The Need for Speed: A New Framework for Telecommunications Policy for the 21st Century.*" The book addresses the proper role of the Federal Communications Commission in light of the rapidly changing communications landscape. There's a particular focus on broadband service because it is the technology behind the new age of telecommunications that is centered on Internet Protocol Based or IP-based systems that allow for the convergence of once were entirely separate mediums, voiceover telephone wires, television over air or through cable, and data communicated through the Internet.

Historically, the FCC has regulated each of these media in a different manner. The central thesis of their book is that the new digital IP world calls for an entirely different regulatory approach, one that recognizes the old telecommunications silos are outdated and that the industry of delivering information via broadband is dynamic and with the right regulatory environment, far more competitive than the 20th Century telecommunications industry that broadband is replacing.

These new realities play a much different role for the FCC going forward. Today, the authors will flesh out what that role might look like.

And now, about the authors. Bob Litan is the director of research at Bloomberg Government. Prior to his joining Bloomberg late this summer, he was vice president for Research and Policy at the Ewing Marion Kauffman Foundation in Kansas City, and also a senior fellow at Brookings.

Bob is incredibly prolific. He has authored or coauthored over 20 books and hundreds of articles in journals, magazines, and newspapers on a broad range of public policy issues. Bob has served in several capacities in the federal government, including as associate director of the Office of Management and Budget and deputy assistant general in charge of civil antitrust litigation and regulatory issues at the Department of Justice, where among other matters, he supervised the first Microsoft investigation.

Hal Singer is a managing director of Navigant Economics. He has served as adjunct professor at Georgetown University, McDonough School of Business, and is the coauthor of another broadband book, *"Broadband in Europe: How Brussels Can Wire the Information Society."* In addition to publishing widely in both academic journals and more popular outlets, Hal has served as an economic expert in high-profile communications battles including most recently Tennis Channel versus Comcast.

Please join me in welcoming Drs. Litan and Singer. After they give their presentation, my colleague, Darrell West, vice president of the Governance Studies Program, Brookings, will introduce and moderate the panel. And with that, I will turn things over to Bob. (Applause)

DR. LITAN: Thank you very much, Karen, and thank you, everyone, for showing up today.

Hal and I are happy to lead off a discussion, the future of broadband and how to accelerate that future. And I say "accelerate" because I think I can safely say that all of us here agree that there are huge social benefits to ensuring that broadband is universally available to everyone in the United States.

Broadband is more than a simple communications device like the telephone and has become the platform for new applications and business models and

health care through telemedicine and education and business processes throughout all kinds of businesses in the United States in retail and among other industries. But not all broadband is equal. The FCC's original definition of broadband defined it as a download speed of what now seems quite slow, 256,000 kilobits per second. That speed was satisfied by DSL and a first generation cable modem. But, today, your telco fiber to the home and new generation cable modems have download speeds of at least 10 megabits per second and the best wireless systems are near that speed or even greater.

For example, Verizon and AT&T's 4G LTE service has been clocked at 15 megabits per second, putting both on a par with the average speeds achieved by cable modem. As Moore's law continues to play out, fixed and wireless speeds will only increase.

So, why does this matter? Because the benefits of broadband speed are part of a virtual cycle. The faster the download and upload speeds you get, the more new services and apps are made possible, which only increases the social benefits of the whole thing in the first place. And, so, with faster broadband, we get broader uses, we get smarter electricity grids, we get faster productivity growth. With more investment in broadband, we get more jobs, we get more investment, and we also get more consumer benefits because the more broadband investment we have, the more choice consumers get, the lower prices they pay, and the faster speeds they can enjoy.

Next question: Why does it matter that there was this converge of wireless and wire line services or wire line and wireless broadband? Well, we say it matters for two reasons.

First, if wireless and cable are in the same product market, then we need a serious rethink of the right number of wireless providers in a local market. So, instead of issuing reports, separate reports, for each broadband technology, wire line and

wireless separately, the commission should take a cue from our neighbor to the north, Canada, which issues a broadband competition report that surveys all broadband technologies all at once because the two are substitutable. Which leads to the second reason why this convergence is important. It has antitrust implications. Because if the two are competing with each other, than antitrust authorities should be able to deemphasize horizontal competition issues and put much more emphasis on what's called vertical competition or getting access to key inputs on reasonable terms. The FCC already has a mechanism in place for deciding these access disputes in the cable television industry and we argue that with a few tweaks, that apparatus could be aimed at all vertical disputes in the entire broadband space.

Now, to its credit, the FCC has recognized the value of faster broadband to a limited degree by upgrading the definition of what is to be the minimally acceptable speed at which we're supposed to have universal access. Now their minimum speed is 4 megabits download and 1 megabit upload. The commission's stated policy is to ensure that everyone in America is able to access that speed.

But the fact is that goal is almost already met. According to an FCC study issued in August 2012, if you don't count high-speed wireless connections, only 19 million Americans or 6 percent of the population lack access to a broadband service. But when you count wireless competitors or wireless services, the number of people who actually don't have access to some kind of broadband at those speeds that I talked to you about drops to just 5.5 million or only 1.7 percent of the population. So, we are already almost at universal service.

Now, the FCC has a system of subsidies to complete the job and I'll get to that point at the end of my comments shortly.

We wrote this policy brief in this book that's going to come out shortly

next year largely to in one sense applaud the FCC's policies, but also to critique them and we critique them on several grounds as they relate to broadband.

First and most important, by focusing so heavily on the un-served, the FCC is missing another critical challenge in this country, namely bringing a second or third pipe to the home where these homes are only currently served by a single broadband provider. According to an FCC report on the Internet access that was done recently, 55 percent of the American population lives in a census tract that is served by only 1 wire line provider capable of satisfying the FCC's 4 megabits standard. That is to say only half of all U.S. households have no choice about what wire line broadband provider they have. That's the first point. The FCC is really missing the forest for the trees by not focusing on this lack of competition issue.

Second, although cable deployed their super-fast broadband networks, namely those networks that deliver speeds much faster than 4 megabits, so, cable has gone to roughly 100 million homes. Verizon and other large wire line providers seem to have lost much interest in expanding their fixed broadband beyond the 55 million homes that they already serve. AT&T is an exception and we'll hear from their Vice President, Jim Cicconi and general counsel. Jim, I'm sure, will point out that AT&T has recently announced a plan to deploy fixed broadband to 75 percent of the homes in their 22 states, raising the homes that they pass from 24 million to 57 million.

We believe that public policy should be focused primarily on removing the remaining regulatory barriers that prevent or that discourage other wire line providers from essentially doing what AT&T is doing, which is expand service and provide competition in these areas that are only served by one provider.

In particular, we think that the FCC should focus on getting rid of barriers to wireless providers who have not been given their due. As of December 2011, surveys

indicate that 34 percent of all households have already cut the cord and gone completely wireless for their communications. Seventeen percent, according to the new survey, do most of their Internet browsing by their cellphone.

Hal will shortly outline some concrete recommendations for getting more fast broadband availability to the rest of the population, but I want to conclude with just a comment back on those subsidies that I mentioned briefly. We do not recommend that the subsidy program be eliminated even though we are already almost at universal access according to the FCC's definition. But what we do suggest is that the subsidy system be rejiggered in several ways.

Number one, the current subsidy system doesn't go to cable providers because their customers don't pay in. That should be changed.

Number two, a subsidy is now geographically based, which is understandable politically because, obviously, politicians want to reach rural areas, but we think from an economic point of view, the subsidy ought to be targeted based on income rather than geography.

And, number three, the subsidy does not go for the build out of wireless broadband, which in rural areas would be a lot cheaper than installing fixed systems.

One way to fix a lot of the flaws of the current subsidy system is to conduct a reverse auction instead of handing out fixed grants and we recommend that in our book. But remember, and I conclude with this, the stats that I cited earlier. If wireless broadband is counted, the United States is already about as close to universal access to broadband as one can possibly get.

So, with those remarks, I'll turn it over to Hal, who will tell us how to get to this brave new world of faster broadband more quickly. Thank you. (Applause)

MR. SINGER: Well thanks, Bob, and thanks to the panelists who are

about to take the stage in advance of their comments, assuming of course the comments are glowing. Seriously, guys, if you have anything negative to say, I'd prefer you just write me or Bob via e-mail.

Our intention in writing this book is to begin a public dialogue about reforming the FCC. We have framed our analysis through the lens of one policy issue, namely stimulating broadband both because broadband is topical and also to solve a concrete problem. But once you understand the challenges facing the FCC and the proposed solutions that we provide, it's fairly easy to extrapolate to other areas that are regulated by the FCC.

The root challenge facing the FCC on the broadband front is to incentivize carriers of all stripes, fiber, cable, wireless, satellite to extend their footprints and to continually invest in their networks. Now, this is not to say that maximizing competition is the proper objective. If it were, then we would advocate for eight wireless carriers in a market currently served by five or for mandatory unbundling obligations of wire line providers in markets already served by two. Instead, the proper objective of the regulator is to maximize consumer welfare which often points in the same direction as maximizing competition. But the two goals conflict when policy would stimulate entry at the expense of undermining investment.

So, what does maximizing consumer welfare mean in the broadband context? To begin, it means removing barriers that discourage competitive entry and refraining from imposing artificial barriers that do the same. On the wireless front, the key entry barrier in our mind is limited spectrum, which today is not allocated to its most valuable use. Although the FCC appears to be moving heaven and earth to find new spectrum, if the newfound spectrum is allocated or awarded in a way to maximize the number of wireless carriers, that is to maximize competition, then we will miss out on a

tremendous opportunity to advance consumer welfare. Policymakers must appreciate that the demand for bandwidth-intensive applications and the cost of supplying these networks are driving the industry toward consolidation. Recognizing these massive economies of scale and the fact that wireless is poised to be a significant competitive restraint on cable model prices, the ideal structure of the wireless industry might be a lot closer to two or three providers.

On the wire line of fixed broadband front, outdated regulation is the largest barrier to network expansion. Policymakers should eliminate the carrier of last resort regulation, quality of service metrics, and other vestiges of a regulatory regime that was designed for copper telephone lines, a technology whose time has passed. Freed from such obligations, fiber-based broadband providers could migrate their legacy technologies to IP.

Under the current rules, telcos are forced to operate two separate systems. This raises their cost and thereby impairs their ability to compete effectively against cable modem providers. Consider this fact. According to the Columbia Institute for Tele Information, nearly 50 percent of wire line capital expenditure is devoted to maintaining the old legacy network. Thus, relieving telephone operators of their obligation to invest in these outdated technologies will free up significant capital resources to invest in products that consumers actually want.

Another example of regulations standing in the way of broadband deployment is the open Internet order in what can only be described as a botchery of economics. The FCC effectively banned downstream Internet access providers from contracting with upstream Web sites for priority delivery at any costs. This is like banning Amazon from charging different prices for next-day delivery versus standard three to five-day delivery. And, ironically, the commission may have woken up to this fact when it

issued its more recent sunset order. There, the FCC chose to permit not just contracting between downstream cable operators and upstream cable networks, but exclusive contracting. The commission argued in this order that because exclusive arrangements could encourage the formation of new cable networks, the practice should be tolerated and police for anti-competitive effects on a case-by-case basis. It's sending that same logic to the Internet domain, broadband providers should be free to enter into priority delivery contracts with Web sites because such contracts could encourage the formation of new Web sites that make use of real-time delivery.

Moreover, replacing the ex-anti-prohibition of the open Internet order with the ex-post policing of the sunset order would benefit broadband consumers since the revenues that broadband access providers could raise from engaging in these priority delivery contracts could be used to expand their networks. In short, the FCC should embrace a rule of reason approach to all vertical arrangements in the communications landscape and not just those in the cable video industry.

In this book, we offer a host of additional policies that would improve consumer welfare and improve the FCC's image as an agency that has been too susceptible to what economists call rent-seeking activity or in English, it means trading current gifts for future ones.

For example, we advocate removing the FCC's discretion to condition the sale of spectrum on a bidder's identity, spectrum holdings, or business plans. And when a former FCC high-ranking official walks into the commission and asks for the auction rules to be slanted in a way to favor his client, I would like the current commissioner to be able to say sorry, I just can't do that.

In a similar vein, we advocate removing the FCC's merger authority and limiting its review of secondary market transactions. Now, this is not because we want

more anti-competitive mergers to be approved, rather, we have faith that the anti-trust agencies are equipped to root out anti-competitive mergers. Moreover, the experienced anti-trust generalists at the FTC and the DoJ are less susceptible to rent-seeking activity than the communications specialists at the FCC, who often will go to work in the communications industry after their public service tenure is complete.

Now, this is not to say that the FCC's experience should be ignored during merger reviews. By all means, they should have a seat at the table when the DoJ or the FTC is reviewing a merger in the communications space. They just should not have a vote.

As a final example of rent-seeking gone wild, consider the conditions demanded by petitioners not just in the recent Verizon spectrum co-transaction, but in even the smallest secondary market transactions. Divestitures to a predetermined firm, mandatory roaming, bans on handset exclusivity and handset interoperability. Each of these conditions would increase the profits of the petitioning competitor, but they have little to do with improving consumer welfare. Even worse, by shifting merger-related profits to competitors, this horse trading chips away at the expected gains of the acquiring firm. Too much redistribution of rents means that some procompetitive acquisitions will never occur.

To conclude, you know there is an image problem when an FCC commissioner gets lampooned on the Jon Stewart show or when Cecilia Kang reports the parlor games that go on during merger reviews. The media, however, only interested in embarrassing the individuals involved, they are not interested in identifying the structural reform that is needed to fix the FCC.

As economists, we understand that agents will maximize their interest subject to the rules. If you don't like the outcome, then don't blame the individuals, just

change the rules. In the communications arena, the rules that need changing are excessively broad regulatory powers and unlimited discretion. Curb the FCC's powers generally and its discretion in particular and you will make socially unproductive rent-seeking much less lucrative. As competitors shift their resources into more productive arenas such as building the next broadband network or designing the next must-have app, consumers are sure to win. Thanks. (Applause)

MR. WEST: Okay, so, we've just heard one perspective on the role of the FCC and how the authors think that role should change, but we want to introduce other points of view into the discussion. You may notice there are two empty chairs here. This is not a Clint Eastwood moment. (Laughter) After we've had a chance to discuss this issue on the panel, we will invite Hal and Bob to come back up to offer whatever rejoinders they want to make.

But we have an outstanding panel of experts here to discuss broadband as a catalyst for the digital economy. Blair Levin is a communications and society program fellow with the Aspen Institute, and prior to joining Aspen, Blair served as the executive director of the Omnibus Broadband Initiative, where he oversaw the development of the National Broadband Plan. And before that, he was an analyst at Legg Mason and also Stifel Nicolaus and served as chief of staff to then FCC Chairman Reed Hundt. He also has an exciting new venture Gig.U, which promotes various innovation possibilities in higher education.

Michael Powell is the president and CEO of the National Cable and Telecommunications Association. He was nominated as a member of the FCC by President Bill Clinton and designated by President Bush as the FCC chairman in January of 2001. Prior to his tenure at the FCC, he served as a chief of staff of the Antitrust Division in the Department of Justice, where he advised the assistant attorney general on

substantive antitrust matters.

Jim Cicconi is senior executive vice president external and legislative affairs and chair of the AT&T Foundation. Previously, he served as general counsel and executive vice president for Law and Government Affairs at AT&T. He also served in the White House under two presidents, including two years as deputy chief of staff to President George Herbert Walker Bush and four years as a special assistant to President Reagan and to White House Chief of Staff Jim Baker.

Tom Hazlett is professor of Law and Economics and director for the Information Economy Project at George Washington University. Tom has published widely in academic and popular journals on the economics of the information sector and he's also served as a columnist for the *New Technology Policy Forum*, hosted by the *Financial Times*.

So, I want to start with Blair. So, in their remarks, Bob and Hal envision a very different role for the FCC and they argue that federal regulations should move to an ex-post case-by-case approach to broadband as opposed to particular policies being in place.

When I talk with people in the business community, my concern about this is they are always complaining about the great uncertainty and how this has an effect on stifling innovation because there's less predictability. And, so, the question I have: If we move to a case-by-case approach to regulation, is this going to achieve the results that we want? Blair?

MR. LEVIN: Well, first of all, thank you very much for hosting this and I really want to thank Bob and Hal for writing this book. There's a lot to agree with, but even the parts I disagree with, I hope that every member of the commission or all their staffs read it. And because I think it certainly focuses on what I think of as the most

important problem today for the commission, which is how do you stimulate investment both in terms of expanding the network's reach, but also very importantly constantly improving because I think that is a fundamental problem that we're going to have.

Having said that, I think I disagree not so much from my time in government, but from my time as an analyst in an assertion you made that outdated regulations are the biggest barrier to investment. I think we see very significant investment in the wireless side and we should all be grateful for that and America is actually leading in that. We don't see the same thing in wire line.

There are definitely regulatory barriers, but I don't think that's what's really holding it up. What I think is the fundamental problem that I get from my old friends on Wall Street is that cable not only has a superior network today in most places, but also has a superior upgrade path. And that makes it very difficult to justify investing effectively in wire line; though Jim's company is doing some more of that and Jim can address that. But I'm not sure we want to fiddle with those economics, rather, we want the kind of experimentation that Jim is doing, we want to see whether wireless, in fact, can compete, we want to encourage experimentation like Google is doing in Kansas City or the Gig.U communities that I work with are doing.

I also think the government wants to do more, and actually my old boss and I just wrote a book that focuses on this, to encourage demand side activity. That is if we transition government services, education, health care to more and more bandwidth delivery, we increase the economic case for further investments.

But as to the specific question you asked, I go back and forth on it, particularly on the question of neutrality. I might say when Rebecca and I were both working together at Legg Mason, Stifel Nicolaus, we talked a lot about net neutrality, but it was never clear what the economic impact of the rule would be. In other words, if you

were to ask an investor if you assume a rule, what would your model be? If you assume no rule, what would your model be? But in no case do I believe that if Verizon wins its lawsuit and I actually believe they will, I would not expect a huge new amount of wire line investment by the telcos. Because I don't think it changes the fundamental economics that much.

And I would note that there were two republican chairmen, and one is sitting next to me, who in fact acted on that neutrality in a certain way and I don't think that that really dramatically affected to the negative investment case. I go back and forth, frankly, on whether you're better off setting a clear rule, and, so, you get that certainly, or whether you're simply having a rule of reason because no matter what, I know this: industry will complain. But that's okay, but I could argue it, in fact, either way.

I do think that in some ways because of the dynamic of the industry and because it's so rapidly changing, the business model has changed so rapidly, we might well be better off with a rule of reason. I look forward to reading the full book for that, but I think it's always a challenge because if you basically just set a kind of very thin principle and then you react, you do create a problem where people have effectively invested based on their assumption about what your rule is going to be rather than what your rule is going to be.

MR. POLLACK: Okay, thank you.

Michael, you served at the FCC and Department of Justice, and particularly in the Antitrust Division. So, one of the proposals is limited FCC authority to review mergers. Do you think it's time to remove those powers from the FCC?

MR. POWELL: Yes. (Laughter)

MR. POLLACK: And could you elaborate? (Laughter)

MR. POWELL: That's all I have to say. (Laughter) And, by the way, I

wouldn't say this because somehow I think they are a bunch of incompetents or anything negative associated with it. Having been involved directly with mergers at the commission and having testified in Congress on this at least 15 years ago, there is a duplicative nature to the review that has a huge efficiency loss to the reviews of mergers and I think if you did a sober analysis of what incremental benefit was gained by that additional level of review, you would find it so trivial compared to the cost associated with the exercise that it really wouldn't be justified.

I would secondly say unless you're going to completely change both the resource base of the FCC and the talent that it recruits, it is at an enormous disadvantage in terms of the kind of scholarship teams and antitrust expertise that would allow them to rival the Department of Justice or the FTC in doing horizontal merger analysis using the merger guidelines. Without a huge cadre of people with that kind of training, expertise, and experience, and whether they're adding anything incrementally to the actual anticompetitive question has always struck me as very little evidence of that fact.

I would also argue there are a lot of other mergers in society that I could argue are more important than communication mergers, more critical of the lives of American consumers, and no one requires them go through a duplicative set of industry-specific merger review and our society has done just fine by that. So, I don't know that I agree that somebody makes a case for why communication is singularly unique in meeting something that looks like the merger guidelines being applied to this industry where they aren't applied to whether it be food, oil, gas, any other kinds of transactions in society.

The second part of it that I've always been concerned and critical about is because there isn't going to be a substantial contribution on the anticompetitive effect side of the question, it turns into an open legislative bazaar because the public interest

standard, and I'm not one that says things shouldn't be in the public interest, but if it comes to mean whether you think the jellybeans on the positive side of this scale outweigh the jellybeans on the negative side of the scale and the exercise is about forcing companies to put enough goodies down on the scale to satisfy the commission that this thing on balance is good, even when those things may have absolutely nothing to do with whether the harm that the merger is supposedly going to affect, it's almost like oh, this merger, the dog is biting me, but give me a free Xbox and I'll forget it, and the dog will still bite you, the consumers will still be heard, but somehow, the regulators have been satisfied that they extrapolated some set of benefits. Worse, they're often benefits that they wouldn't have any legal jurisdiction to obtain otherwise, which I think raises serious administrative law and constitutional questions about whether an agency can extract from a company under some vague notion of voluntary commitments, stuff that they could not otherwise impose through their existing regulatory power.

And the last point I would make about that, that to me is a dark side of that process, is because it's voluntary; it's not reviewable by the judiciary. So, you have an administrative agency that goes through the merger process, has a company over a barrel, forces Jim to write a long letter of pledges and promises that he'll do to get it approved, which we all will do because we need to get it done, and, oh, by the way, if any of them are nefarious or unfounded, we're not allowed to go to the D.C. Circuit and complain because we will be said to have voluntarily agreed to those things as opposed to have those things imposed on us. That is not responsible and defensive review in my judgment and it starts to just create a mini legislature where all kind of constituencies come in and try to take advantage of that process to get whether pet project they want imposed on the process.

MR. WEST: So, Jim, consumer rights organizations worry about the

dominance of two major carriers in mobile broadband. So, they argue that we need robust regulation to protect consumers.

Is now really the time to deregulate broadband?

MR. CICONI: Well, I think the answer is clearly yes, but we've got a system by and large where we've approached broadband in a light touch way. This has been a policy that's been in place for a long time. It was put in place even before Michael got there really and it's been bipartisan. And I think it's been successful.

In terms of the wireless component of it, I don't think he can take one segment of broadband, as Bob and Hal are pointing out and separate it off, consider it as being in a silo when consumer conduct is exactly at odds with that. And, increasingly, the commission finds itself doing that because the rules it has in place carve everything up into these silos. And, so, I think increasingly the commission, even though it knows better, finds itself having to deny reality and the reality of the marketplace. Everybody that experiences this market understands the choices that consumers have available to them, and, yet, the commission find itself in situations where even when it comes to legacy-wired voice service, they refuse to consider wireless substitution for that, even though people are dropping wired phones and for wireless services.

We, in our legacy footprint states, it's hard to even talk about it in those terms anymore, but there are 22 of them where we offer traditional phone service of a wired sort and only 30 percent of the locations in those 22 states continue to have wired telephone service. So, obviously, 70 percent of the people have found some other means of communication, yet, the FCC finds itself from a regulatory standpoint refusing to acknowledge that in order, I think, to preserve its authority.

So, this is a situation, I think, that cries out for a more modern approach and for reconsidering not just the role of the FCC in these areas, some of which Michael

discussed, but, frankly, a reexamination of the purpose of regulation in markets that are this dynamic. Even if you take wireless by itself and people talk about a concern about “dominance of two carriers,” you have the number three and number four carriers there who between them have over 80 million customers. I don't think you can simply ignore the reality of that, say there are only two dominant players in this industry when 80 million customers, and frankly more than that, have alternative providers or where you have other means of broadband communication or communication available to you.

So, I think consumers get it. They see the choices available to them in the market, they're making those choices, and increasingly I think the FCC finds itself in a position of playing catch up with the market and it has to, I think, move faster in terms of modernizing. I give them credit for doing a lot of things in this area.

I think the current chairman took a big risk in trying to modernize the Universal Service Fund and focus it much more on broadband. This is the future. It's an acknowledgement that plain old telephone service as we know it is going away and that the future really is getting everybody connected up with broadband. And if we're going to have a subsidy system designed for universal service, it ought to be focused on that and not just giving people an increasingly antiquated service.

And but I think the commission clearly needs to move faster. We've stepped out there a bit, as Bob mentioned, with the investment announcement we made a couple weeks ago on top of our current capital budget, which I think is the largest that any American corporation invests in America and I think it's been that for the last three years. On top of that, we're adding over the next 3 years around \$14 billion, all of it focused on broadband, extending 4G LTE coverage to 300 million people, raising, as Bob mentioned, the number of people with wired broadband that's competitive with cable to 57 million customer locations. So, far more people actually would have that available and

even bringing fiber into 50 percent of the multi-tenant buildings within that 22-state footprint, where we have wire line service.

So, there's a lot of modernization going on here. The core problem we have, as we've explained to the commission, is that when you want to go in and build a modern IP infrastructure, you have to be able to get the savings from turning off the old infrastructure. And, currently, the FCC doesn't allow us to do that. We have to get their permission to do this, which makes no sense. The rules, in other words, are designed on the assumption that a copper line voice service is needed forever, that it's never replaced by something better, including an IP infrastructure.

And, so, with fewer and fewer people on this infrastructure paying for it, the maintenance costs are nonetheless going up over time. There's a lot of this equipment people don't even make any more when it breaks and we have to keep engineers who are past retirement age available because some of them are the only ones who know how to fix some of these things when they break. We have to be able to start this transition from the old to the new and we have to have the FCC in a position of facilitating that, not slowing it down.

MR. LEVIN: Okay, can I just add a very quick thing?

MR. WEST: Sure.

MR. LEVIN: Number one, I completely agree that the FCC needs to articulate a path toward an all IP transition. And this is an example of where I don't think that you do it on a case-by-case basis, but they need to have a timetable and metrics and also it's really redrawing the social contract that we've had for years. So, I think that's one of the most important proceedings for the next FCC or the next four years, I should say. But, again, this is one case where a case-by-case won't work, I think.

MR. WEST: Okay, Tom, I want to bring you into the discussion. So, Bob

and Hal argued that it's time to end price regulation of legacy networks by the FCC. Is this the right thing to do and are there any risks for consumers and the marketplace if we move to that approach?

MR. HAZLETT: Yes, it's the right thing. I mean, a lot of this is going away. I mean, it's been a gradual transition over the last 20 years and we've gone to price caps from rate of return and now we've gone to the substitution of wireless for wire lines.

So, the fact that the right regulation product only has down from 95 percent to 67 percent or something of households, that it's dropping rapidly shows you there's a lot of dynamics in the market. We have had fixed line competition, thanks to cable coming in in the last decade going head to head with the old Ma Bell monopoly, the legacy of the Ma Bell monopoly. So, that's been actually a very quiet but major victory. I mean, that was the number one big-ticket item in terms of what people were talking about in terms of competition under the 1996 Telecommunications Act. And it happened pretty quietly. It actually happened after the D.C. Circuit provided some adult supervision and stepped in and did the right thing that some regulators had tried to do on their own and basically allowed some of that mandatory network sharing stuff to go away and then that brought in more investment and competition. That's a very strong case for what they're trying to say in this book.

And I just have to add, and thanks for having me and thanks for Brookings putting this on. It's a very timely sort of effort here. This is an opportune moment. The topics you're talking about are really big-ticket items. People should take this moment at the FCC and other regulatory agencies around the world to think big, to think about this transition from the copper world to the all-IP world and to think about this amazing transition from wires to wireless and to really try to understand what that means

and I think when you talk about things like universal service to not talk about wireless.

I mean, all the growth and the funding has come from this ridiculous system. I may differ a bit with the authors on this, we are paying for duplicative provider of last resort subsidies in hundreds of markets around the country and we have, I mean, just to flip this terrible \$8 billion a year -- did I say "terrible?" No, I mean awful. (Laughter) Eight billion dollar a year waste in universal service subsidies, which does not help consumers and does not expand the network.

And the research on this I think goes far and deep and a lot of it's been done historically here at Brookings. And it really is inimical to the development of competitive markets and more efficient markets and how you could ignore the fact that satellite broadband now delivers what the FCC identifies as "broadband," 4 down, 1 up, for \$40 a month. That's a footprint that serves the entire United States. How you can exclude that, it takes a very nimble regulatory -- does the word contortionist fit into this sentence somewhere? (Laughter)

Anyway, you've defined what broadband is. Satellite companies are actually offering that. Wireless companies certainly are offering that in many markets. They'll be more. The news we get from Japan is people are giving up fiber to the home to get 4G LTE subscriptions, and somehow, we're surprised by that. Somehow, we're shocked. Oh, you mean wireless can substitute for wire line. We never thought of that.

So, anyway, this world is changing rapidly and these legacy rules whether or not they have a large investment, I think net neutrality and the open Internet order are a problem and the world will be much better to go back to where we were which is an antitrust regime to take a look at foreclosure issues and to monitor that. And in some instances, clearly, it's had a very positive effect on broadband expenditure and CAPEX to do away with those legacy rules. Certainly, that accounts for the rise of fiber

to the home in the United States. You didn't get that until we cleared away the mandatory network sharing obligations particularly in fiber and network neutrality is a step back in the other direction. I agree very much with the authors on that.

Anyway, this is a great moment to have this kind of evidence-based policy book come out in this area.

MR. WEST: Great. I'd like to raise a couple of issues, and anybody on the panel who wants to jump in is welcome to do so.

One, Blair made what I thought was a very insightful comment in thinking about the role of the FCC and the regulatory regime. He made a point about seeing if and how wireless ends up competing with the rest of the ecosystem. So, I was wondering if we could get thoughts from the panel on where they see the nature of that competitive universe taking place now.

And then the second issue is there are certain areas where we have seen the rise of dominant niches. We see it in social media, we see it surge. Apple has achieved some dominance in the tablet marketplace. Does the rise of dominant niches and niche players suggest we still need a competition policy? Anybody who wants to jump in.

Michael?

MR. POWELL: One thing I would like to say, I sort of agree with Tom. There are days I sit back and I'm flabbergasted that somehow we haven't come to resolution in the collective consciousness in the United States that broadband access via a wireless device is a big time for real broadband provided service. Look at a few things around the world instead of just comparing speeds.

The first thing I would say is I think we often make mistakes by treating the competitive question as one about speeds and linear progression of speed. One of

the things that Blair did in the National Broadband Plan Report, if one went back and read it, is to sort of really urge to re-conceptualize the way you think about broadband in terms of functionality and use by consumers.

Okay, so, if you want a Facebook, you don't need to be talking to me about gigabits, speeds per second, you don't need to say that's an inadequate substitute. If anything, what's the biggest drain on Facebook's stock today? It's the market's concern that they don't have a mobile strategy that will drive the stock to a higher price given the demand of mobile. If that isn't a testament to the importance of that service's dependability on the rise.

Google felt the need to build its own operating platform and drive the Android market to protect its Internet access future. Apple did exactly the same thing. All right, I don't see them other than the Kansas City Project, which I think is humorous more than anything. (Laughter)

MR. WEST: Is this because of Kansas City or the project?

MR. POWELL: I'll leave it at that. (Laughter) But if you look at the companies that are the profiteers of broadband access and look at where their dollars go, where their business plans are focused, where they're fighting vociferously for share, enormous amounts of that investment is to driving the mobile ecosystem.

So, it is a very serious substitutable ecosystem whether you're using speed as the metric or not. I would argue that even before we got to 4G, 3G provided us sufficient base for the rise of the Apple iPhone and the app environment, and in the app utility driven format for accessing the Internet, it is often not only adequate as a substitute, it's superior.

If I am on the ground mobilely wandering by Starbuck's and want to use Square to create a mobile payment opportunity for me, wire line broadband is not in my

equation, right? And if I went up and said what are the really cool startups we're talking about today? Uber. Groupon. Square. These are things that are dependent on local access to broadband through a wireless device.

So, look, I love what we do in wire line. We do it well. We're proud of it, but to suggest that the wireless side does not provide competitive discipline and to the average consumer as a logical extension of the broadband experience, it is just fantastical and the fact that some critics of broadband in America want to completely eliminate wireless from the equation and the fact that the 706 Report produced by the FCC refuses to account for wireless in its description of the health of the market or other reports consciously eliminating it, I find almost unconscionable.

MR. WEST: Jim?

MR. CICONI: I think the underlying question really is, I mean, I certainly concur with much of what Michael just said, but I think the thing that bedevils us here is what should the role of the FCC be in this space and is their role and, if so, what is it?

I think certainly the Congress has responsibility here for addressing this because I think increasingly, we find the commission kind of stretching its authority and incited to do that by the external pressures in many cases. And, so, they end up stretching their authority to meet expectations, but the underlying statutes really aren't designed for the current situation. They were written and designed for a Bell monopoly communication system that doesn't exist anymore. We have competitive markets. We can argue about how competitive, but it's clearly not a Bell system where it's a single provider for voice services and where the function of the commission and the statutes and the rules are mostly designed to protect small companies against one big monopoly.

And, so, I think as we took a look at what the FCC should be doing, I

think they should be getting out of the business of protecting company A against company B. I think the thing that people in this town are probably the most cynical about is how the rent-seeking that was described, but where companies go into the commission to petition to seek advantage against other companies and then those companies come in and try to counter it by seeking their own advantages and the FCC has its authority enhanced by the fact everybody is coming in there asking it to exercise its power in what are essentially competitive markets. And they should not be doing this.

So, what should they be doing? Honestly, if the markets are competitive, if there is not evidence of market failure, then the commission's role should be focused much more on a level playing field for consumers, protecting consumers against abuse by either companies and ultimately against market failure. And I know there's a lot of details that go into that, but that's really I think what the expectations today are on the commission, but they're taking these statutes and rules which are designed for something different, stretching them to try to apply this here.

I think the second point I'd make would be this, that I'm not sure I want to get into the case-by-case versus overall approach, but I think the commission would be wise to focus its regulations going forward on actual problems in the market rather than hypothetical problems and I know we may have some differing views on the issue of net neutrality, but this was essentially a hypothetical problem and one of the reasons we supported and I supported and testified and supported the compromise was because it was creating a regulatory overhang on investment, okay? It affected the decision-making within my company. I saw it, okay? And every other company because ultimately when a regulatory agency bases its regulations on hypotheticals, there is no limiting factor because there are an endless variety of hypotheticals that are possible.

So, they should be hinging their regulations on actual data and on actual

problems and not on hypotheticals dreamed up by some advocacy group. And I think we'd have a much more focused commission. I think it would be better equipped to deal with the modern age rather than continuing to try to drag us backwards based on outdated regulations and authorities that are in need of reform and haven't been.

MR. WEST: So, Blair, has the FCC just been making policy based on hypotheticals? You were there.

MR. LEVIN: Why do I always to be in the position of defending the FCC? (Laughter) Why don't you do this? You were --

SPEAKER: A long time ago.

MR. LEVIN: Look, there's a level of which I agree with Jim and I have managed, thankfully, to stay out of the net neutrality debate for a variety of reasons and don't want to jump into that pool, but I just intellectually found a lot of the debate problematic on both sides because you were very creative about hypotheticals, as well. (Laughter)

MR. CICCONI: When you're in the ether, you get --

MR. LEVIN: No, I agree. I would do the same thing if I were you.

MR. CICCONI: Yes.

MR. LEVIN: I'm just saying that that --

MR. HAZLETT: He takes that as a compliment, Blair. (Laughter)

MR. LEVIN: And, by the way, your hypothetical is much better than this. But I do think that there is a problem. I, again, struggle with that as to whether you're best off doing what I hope the commission does on the IP transition and just lays out a clear path versus just addressing things when the problems arise. So, let's put it this way, I am sympathetic to the problem of a hypothetical situation, but, look, anyone who's ever gone to a Supreme Court case knows that the judges are asking about

hypotheticals.

MR. HAZLETT: Scalia lives by hypotheticals.

MR. LEVIN: Right or whether the government can impose broccoli on all of our diets or something like that. So, that's just part of the rulemaking problem. You can't solve the problem, but you can mitigate it and I think Jim's right to raise it in the way.

I do think it's worth saying that there's no doubt wireless competes in the voice market. There's also no doubt that wireless broadband is a very big phenomenon. What we have not yet seen or and if we have then I -- we thought a lot about this with the broadband plan and we were skeptical, frankly, that wireless broadband would compete in the sense that it would cause people to cut chord from wire line broadband. That most people will buy two. But we didn't want to prejudge that and part of the reason we emphasize spectrum so much was because if wireless is going to compete, it's going to need a lot more spectrum. And, so, the incentive options grew out of that idea. I am actually quite concerned we won't produce enough spectrum out of that auction to really enable wireless to compete. So, I think that's a problem.

A second problem is I believe that there's going to be applications that wireless can't do or that the cost of wireless doing them in terms of the need for either the price or the spectrum, the usage caps are going to make it problematic for people to really substitute. I do think that another problem that next FCC is going to have is that wireless will be very successful in competing in rural America, will undercut a number of wire line providers. That's the market speaking, not regulation. By the way, some of those wire line providers will go to the FCC and say you have to give us more money for USF, but whereas the market is speaking, I hope the FCC says look, it's not really about us, it's about the markets so they don't give them more money and I think wireless should absolutely be part of that USF component.

But I worry, and I'm not sure this worry should turn into a rule, but I worry that as applications as we start to deliver health care and education and a lot of other great forms of entertainment and news and information with higher bandwidth applications, the wireless ultimately can't do it and I think a government has to hope for something, but hope is not a strategy. It should definitely get more spectrum out there. Some of those recommendations in the book I think are very good in that regard, but it's not clear to me, Michael, that it competes in the same way that very clearly it competes in voice today.

MR. WEST: Okay, Michael and then Tom.

MR. POWELL: But a quick twist on that, right? So, the antitrust measure where the market is healthy is not necessarily that you will completely drop a service in order to completely use another service as a direct substitute. It could be that you use the second service sufficient to create price discipline and innovation incentives on the existing incumbent to keep that market healthy.

My argument would be, and I'd probably come to agree with you, I'm certainly not a household that thinks I want one thing over the other. I do think for everything I do on my iPhone that I don't do on my cable broadband is one less unit of use that can discipline both the growth, the innovation investment, and the price of the wire line infrastructure. So, we shouldn't be so quick to make the mark being that I cut the cord and I only then do I count it.

The other thing is I think there is some evidence to raise questions about this. The chairman of the FCC frequently talks about the adoption problem where we have huge amount of the country is passed by infrastructure. Usually we cite things in the 93 percent range and then we talk about 66 percent adoption, and then frequently the next statement will be that particularly hits minorities and Hispanics. But then you go look

and those same populations are extraordinarily high users of broadband on those mobile devices. They may have made the very substitutable choice that you're talking about. We're treating it as a problem, but maybe they found a device at a price point they're more than satisfied with to take care of their information needs as those things become more specific.

I don't completely know the end of the answer to that, but I do think that those are sort of interesting evidentiary basis.

The second quick thing I would say is this point about hypotheticals. This is really the reason why the tension between ex-anti and ex-post is so important. At least in ex-post, you have demonstrable evidence of harm; you have some rigorous record on which to evaluate the competing claims is what we do in antitrust. Here are the records, here are the documents, here's what they say, here's what the evidence suggests.

I do think there is a tendency when it's ex-anti to really be talking about prescriptive medicine. We need to give this medicine in advance and I think there is a long, sorted history of the predictive powers of the FCC being highly questionable in fast-moving, innovative markets.

You wouldn't have told me in 1999 Facebook would be the most compelling application today. You wouldn't have told me a few years ago -- I mean the never-ending transformation of this market of what's important. Particularly take something like Facebook, maybe the hottest application out there. Very low bandwidth, right? If you asked a consumer are you a heavy user of the Internet, they go: yes, I'm a heavy user of the Internet. And you say really, how much bandwidth do you use? I don't know, but I'm on Facebook six hours a day. (Laughter) Well, to the consumer, "heavy use" means time and to a company, it means capacity and we're not even talking about

the same things with them.

So, before we're so certain that we know the future, I just think a little humility in the regulatory process bends you to ex-post to try to at least have an emerging situation that you can evaluate with some credibility.

MR. WEST: Okay, Tom, I want to give you a chance to jump in.

MR. HAZLETT: Yes, well, not that this is a fair fight on net neutrality, but I'll go ahead and pile on. (Laughter) I like to pick my shots.

So, yes, no, it's an important issue and I have to say in 2006, and maybe I'll give myself more credit than I deserve, but I used wireless net neutrality as a *reductio ad absurdum* argument for why you needed network management and net neutrality rules would be inimical to investment and efficiency in the market. Well, lo and behold, wireless and net neutrality soon became part of the issue and was, of course, folded into the open Internet rule. So, it's taught me something about *reductio ad absurdum* arguments.

Part of the basis for that was to look at Japan, and Japan today is still acknowledged as the leader in wireless broadband. It started as the leader in the wireless narrowband. It really created the wireless Web and it did so through a business model that is a net neutrality nightmare. You go to the development of DoCoMo and the i-mode system, you have this some would call it a dictation of standards and even pricing by the carriers, the competing carries, have ecosystems that they are very actively managing to try to give their customers a very friendly experience on everything from billing to customer selection and ease of use.

Of course, now, that sounds to some Americans like oh, that sounds something like the Apple. Well, that is something like the Apple model, which came later and did take much from DoCoMo and is also in many ways a violation of neutrality. We'll

see how far the rules might extend there to the applications world.

But, at any rate, there is nothing that is categorically efficient about a certain particular platform with so-called open access rules. Competition in business models is a discovery process where you come to various alternatives and in today's wireless market, you have some very exciting competition between different approaches sponsored by companies like Apple, Google, Microsoft, Nokia, and RIM, BlackBerry, how could I forget them? They were the innovator in the western world.

And, anyway, these rival ecosystems are very, very demonstrative of a discovery process in favor of consumer welfare and innovation that really is quite positive and to the extent that there are categorical rules that attempt to cut market competition in that dimension short, you're going to lose on that. So, to me, it's much broader than just this network investment issue; it's really an innovation issue that goes much further and I think that the antitrust world has grappled with this not perfectly, the vertical integration, vertical restrictions, law, and economic literature still developing. It has a lot of interesting disagreements, but it's so far advanced compared to the communications world and these categorical prohibitions that I think that we really have to be very honest about that and where net neutrality is led and the fact that it is inimical to economic progress.

MR. WEST: Okay, yes, Jim has one quick comment and then we're going to open the floor to questions.

MR. CICONI: Yes, I know Darrell probably wants to put a fork in this particular line of thought, but just one other point on the notion and the dangers of regulation based on hypotheticals as opposed to evidence of a real problem. And I think we're seeing it today and I think it's a very disturbing trend within this industry and that is when regulations are based more on hypotheticals and you end up in this ether where it's our hypotheticals versus theirs or something like that, you very quickly end up in this

conflict of belief systems.

And if you think back on the net neutrality debate which really started seven years ago, it really became too quickly a religious war and that's how it was fought and it's contributed to this development leaching over into other issues and I think it's made telecommunications issues which really should be subject to belief systems or frankly the degree of partisanship that they are today, but this has happened and I think when you operate in this zone when you regulate based on hypotheticals, you force this into this more partisan conflict of belief systems and I think it makes it much harder to solve the type of problems that Bob and Hal described in their teeing up with their book. It makes it much harder to have a legitimate and informative discussion about reform of communication laws or reform of the FCC because one side immediately goes on the offensive and the other side leaps to the defense of the agency without regard to the issues involved.

And this is not the way we ought to be examining these issues and I think it's one of the reasons when we did a recent filing at the FCC on the IP transition, we tried to avoid this very consciously. We were very conscious of the way we posed the questions and trying, frankly, not to throw in our preferred answers in each of these areas. We wanted to start a debate and frankly challenge everybody to approach it I think in a less partisan and a less contentious way and maybe apply some fresh thinking and not reflexively go back to the barricades that we've established in these other debates, unfortunately.

MR. WEST: Okay, I'd like to bring the audience in. So, if you have a question, raise your hand.

In the very back on the aisle, and Bob and Hal, if you want to come up and you can help answer questions, as well.

Yes. And if you could use your name and your organization, please.

MS. HIGH: Okay, great. Kristal High with Politic 365.

As many of you have alluded to, this question of the Internet being everywhere seems to not so much be about access to infrastructure, but about the adoption question. So, I wonder as you talk about ways in which the FCC ought to be reformed, is the more proper functioning of the commission to focus on not only consumer protection, but perhaps adoption programs? So, it's not so much about let's regulate, but let's do more of the connect to compete model and figure out how to increase adoption in digital literacy so that people are actually using the technology that's accessible to them.

MR. WEST: Blair?

MR. HAZLETT: I could take a shot at that. I think Blair's probably got more trenching comments based on the national broadband plan, but I think the things you cited there, while I think the commission has done an admirable job of highlighting these issues and the challenge of adoption, I think by and large, the solutions are going to be private sector solutions.

First, the companies in this industry are highly motivated to encourage adoption of their products. When we build this infrastructure, it doesn't help us once it's built if people don't use it. So, obviously, we're motivated to encourage them along those lines. I think private organizations are, as well. I think the cable industry has certainly done some very interesting things in this area, as well, and I think the role of the commission is probably more to encourage the private sector to be moving in these areas than to actually run something itself, I'd suggest.

MR. POWELL: Blair, do you want to --

MR. LEVIN: Yes, very quickly, I would say, number one, it's not only

private industry, it's also a lot of local efforts. And I think the commission has a role in kind of creating the learning community, but, frankly, MTIA -- and Larry is sitting here -- they've actually probably done more work on that and I think they have greater expertise and that's all to the good.

I would say that one problem I see coming up is as we move to a digital platform for a lot of government services; we want to make sure we don't create a new digital divide in terms of usage caps. I don't want to regulate that right away. I think businesses should be free to develop business models, but I just think it's one of those issues, without getting into hypotheticals of this or that, just something you have to monitor. We don't want to create a situation where we deliver education over a tablet, but half the class can't watch all the videos. So, but I do think there's a government role that is more about making sure that people see ways to do it, but it's got to be locally-based.

MR. WEST: Okay, there's a young man right here who has a question.

MR. PESNER: Jeremy Pesner with Georgetown University.

I heard this talked about through the discussion a bit, but what I'm not sure really was focused on enough is the question of content. When people are accessing the Internet, they're not really focused on speeds or even in some cases, frankly, whether they're wired or wireless, but it has to do with what content they're looking for. And if we make content the central question, a number of different questions arise. For example, is the nature of the content that we're looking at, is it content that will be viewable despite the potential availabilities and susceptibilities of wireless to packets and that sort of thing? Are we designing our telecommunications network for the content of tomorrow, which may be more bandwidth-intensive or less bandwidth-intensive, we don't know.

And when the FCC does its Internet usage surveys, does it break it down by what people use the Internet for? Again, some people might be using it predominantly mobile, some people might be -- heavy gaming and media consumption users which will ensure higher broadband. So, from the content perspective, how do you think that weighs in?

MR. WEST: Hal?

MR. SINGER: I could take that. Look, I mean, just pull out your phone, whether it's an Android or iPhone or whatever, and I don't know how many apps are written for this thing. It's probably 50,000-plus and it's growing. That's content, and, so, I sort of take the view that if we allow maximum incentives for people to produce these things, the content providers will follow. And we have a huge industry of them that Mike Mandel of the Progressive Policy Institute has done this well regarded or well-known paper where he estimates something like 500,000 people are engaged in building content for these things.

So, I'm not worried about content. I think if you build the platforms and the content, natural forces of competition will arise. And that also relates to a previous answer on the usage. We use this phrase, and we didn't invent it in our book, the build it and they will come. But it's really true. You build this stuff and consumers will adopt it and the more stuff, the more choices you have, the faster the prices come down and people will buy this stuff. It's not that complicated.

MR. WEST: Okay, Adele has a question. Right here if we can get a microphone to her.

MS. MORRIS: Hi, I'm Adele Morris with Brookings.

My question is for Hal and Bob, and, as you know, independent agencies aren't subject to the same kinds of regulatory analysis and review requirements that

executive branch agencies are. And if you're in a world where you're designing new FCC authority, what would be your thoughts as to the mandate or authority of the FCC to conduct cost benefit analyses of rules or engage in some of the same kinds of regulatory impact analyses that executive branch agencies do?

DR. LITAN: Well, I'll take that real quickly because I've spent most of my life writing about this subject. So, I firmly believe that independent agencies ought to be subject to the same requirements of the executive order, although, constitutionally, they're not subject to the executive order. I'd put it in statute so that all rule-making by all agencies be subject to a benefit cost requirement not just doing the analysis, but the actual statutory mandate. You can't issue rules unless the benefits outweigh the cost. That goes beyond just the analysis, which is what the executive order says. But then, of course, with respect to the FCC, to boil it down in a nutshell, Hal and I are arguing for a much more limited scope of the FCC. So, you won't have as many rules coming out.

MR. WEST: Okay.

MR. CICCONE: Just one comment on that, I mean, I think we ought to be questioning whether it should be an independent agency going forward or whether it should be an executive branch agency. In all honesty, I think the assumption is that the political accountability for an independent agency still rests with the Congress and I think we're sitting here talking about the conundrum created by outdated laws and outdated regulations, and, clearly, I think there's probably more of an argument that can be made for executive branch oversight there.

I take a lot of comfort in political accountability in the system and I certainly think that, I mean, they can operate I think just as the Justice Department does, in a way that's insulated from I think the political concerns in its decision-making. That

can clearly be accomplished, but I think we ought to be asking fresh questions about that, especially if it's playing more of a consumer protection role in a competitive market.

MR. WEST: There's a gentleman in the very back room with his hand up.

MR. MOTLEY: Thank you. Seton Motley with Less Government.

As far as the USF and the broader FCC, I would like to paraphrase Jesse Jackson, end it don't mend it. But beyond that, as far as statute, as the cost benefit analysis, there is the Paperwork Reduction Act that's on the books and they're supposed to preemptively examine a proposed rule, determine its cost benefit analysis before they vote on it. No one does that. The FCC doesn't do it. They do it after the fact, after they've already voted to impose the rule.

What can we do to get them to actually adhere to the law and do it before to determine whether or not the benefits outweigh the cost rather than after as a *pro forma* exercise when they've already imposed the rule?

MR. WEST: Michael or Tom, do you want to jump in on that?

MR. HAZLETT: Yes, all of us who look at the FCC know exactly what the Paperwork Reduction Act is. That's the 20 pages at the back of the order that says that this complied with the Paperwork Reduction Act. (Laughter)

MR. POWELL: Afraid so.

MR. HAZLETT: So, and this goes to Bob Litan's thinking, you have to think strategically about how the incentives work and how the decisions are going to go in terms of the structure. So, you do need to have some independent third party oversight or just the same way a solicitor general in an agency does represent some sort of independence. You have to try to isolate some kind of decision-makers and one of the things you could do at the FCC is actually put an office of economists in, which actually

works pretty well at the FTC and the Department of Justice to actually have a professional group that is very much interested in cost benefit analysis and not just writing off. But you have to do it in a way that they have independent authority; they don't just do what the chairman or the commissioners tell them to do, that they actually have a professional track to spend some time and a mass authority within the commission. You have to think quite strategically about this and I know Bob is one of those who has done it.

MR. POWELL: I also think White Houses that have the responsibility to review, whether that's been seriously done or not, multiple administrations generally run that through almost rubberstamp -- I mean, if there is no significant review as to whether the agency's done that, you're just going to get a macro that says we did that.

There have been cases in recent years where people have collaterally attacked orders under the Paperwork Reduction Act over there and have had results. So, part of it is everybody, advocates, the agency, and those who review them, taking that responsibility to a higher level of seriousness.

Do you mind if I jump back --

MR. WEST: Sure.

MR. POWELL: -- to this young man from Georgetown had a question about content which I thought was really important because I think there's something really important that the world needs to understand.

I mean, the Internet was engineered a certain way and a significant part of its genius is also its current detriment which it was designed to be a bursting medium which would break packets up into their component parts, root them in multiple different pathways to arrive at a common location, error corrected and delivered. It is not an engineering network that was optimized for applications that require low latency and high

quality or continuous streaming.

So, as the Internet starts moving toward, for example, streaming video, for a movie to run two straight hours to one point of location, by the way demanding a high level of quality and latency, is essentially running against the fundamental way that the network is engineered and there's an enormous amount of technical work to be done not only on the part of ISPs in the last mile, but even in the guts of the Internet itself, companies like Akamai, who media serve this stuff and companies who produce the content to create algorithms and compression that help make this a better quality experience.

So, I just want you to understand all content is not the same in terms of the way the Internet interacts with it and we're starting to run into that more and more as we take higher order applications to Web-based models and expect the same kind of quality experience that we had when we saw them in some other engineering platform and I think that's going to be a meaningful issue going forward.

MR. WEST: Okay, we will make that the benediction of this forum, but I want to thank Blair, Michael, Jim, and Tom for their comments on the panel and Hal and Bob for the paper and thank you very much for turning out. (Applause)

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Notary Public in and for the Commonwealth of Virginia

Commission No. 351998

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