THE BROOKINGS INSTITUTION

BUILDING A LONG-TERM NATIONAL STRATEGY ON GROWTH THROUGH INNOVATION

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PARTICIPANTS:

Welcome and Introduction:

STROBE TALBOTT
President, The Brookings Institution

GLENN HUTCHINS
Co-Founder and Co-Chief Executive, Silver Lake
Trustee, The Brookings Institution

PANEL 1: THE SHIFT TO AN INFORMATION ECONOMY

Moderator:

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

Panelists:

JEFF BEWKES
Chairman, President and CEO
Time Warner

RANDALL STEPHENSON
Chairman, President, and CEO
AT&T

JULIUS GENACHOWSKI
Chairman, Federal Communications Commission

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P R O C E E D I N G S

MR. TALBOTT: Good morning, everybody. I'm Strobe Talbott and it's my pleasure to welcome you all here for the third forum in a series that we've been running here at Brookings under the general topic of Growth Through Innovation. The first two forums that we held were private, but we felt that the group that is assembled here and has been the core of the effort has become sufficiently cohesive and enough themes have begun to crystallize that it's time to go public with this venture, first because we feel there are some ideas here that are important to put into public debate and also we feel it's particularly timely to have a public forum more or less at the same time that the new Congress is coming into office.

What we call Growth Through Innovation, or GTI, is an all-Brookings priority. And what I mean by that is that it is intended to address a challenge facing the nation that requires focus and input from all of our research programs here at the institutions, which is to say we're drawing on expertise across disciplinary lines. Just to put in context, the other three all-Brookings priorities that we have are: first, one on how to design and bring about an energy future for this country and indeed for the world that makes both economic and environmental sense; second, we have an all-Brookings priority on how to ensure

that our economy, our government policy, and our society are capable of providing maximum opportunity and wellbeing for our citizens; and then the third all-Brookings priority is managing global change.

The premise of GTI is, I think, inherent in what the initials stand for, namely that in order to be sustainable growth needs to be based on innovation, and that means new ideas, new strategies, new technologies. It also means new ways of investing while, at the same time, restoring fiscal sanity to our nation. And it means unleashing or perhaps I should say reviving the American knack for invention of products, techniques, and competitive strategies.

As in the previous two forums, what we will be doing during the course of today is bringing together Brookings experts with public officials, representatives from the private sector, and opinion leaders. We're going to have a series of conversations that are going to be anchored by some of my colleagues here at the Institution.

On the issue of the information economy Darrell West is going to be the anchor. He is the vice president and director of our Governance Studies Program and also the founding director of our new Center on Technology Innovation.

On the subject of clean, green energy we'll be hearing from Bruce Katz, who will lead that discussion. Bruce is the founding director of one of our five research programs on metropolitan policy.

On the question of defense industries we'll be relying for leadership on Peter Singer and Mike O'Hanlon, who lead our 21st Century Defense

Initiative.

On innovating public institutions the anchor will be Bill Antholis, who is the managing director of Brookings and also a senior fellow in our Governance Studies Program.

On manufacturing we'll be counting on Martin Baily, who is the head of our Initiative on Business and Public Policy.

The event will conclude with a conversation between the chairman of our board, John Thornton, and Valerie Jarrett from the White House.

In just a moment I'm going to turn this over to Glenn Hutchins. Glenn is a trustee of this institution. He served on the National Economic Council in the 1990s at the White House. He is a founder of Silver Lake Partners, a private equity firm that specializes in technology. He has been instrumental in conceptualizing this series of forums and bringing them together. And I want to thank him as well as his co-chairs of this whole enterprise who are also trustees: Dominic Barton, Steve Denning, Ann Fudge, Klaus Kleinfeld, and, of course, the chairman of our board, John Thornton.

So Glenn, over to you.

MR. HUTCHINS: Good morning. Our goal today is to discuss how we should think about a plan for national economic competitiveness. In particular, we want to address whether in an era of both intense political partisanship and a yawning divide between government and business we can conceive of nonpartisan approaches -- this is a word you hear a lot at Brookings -- to our common problems.

We hope to chart a means for political leaders, both state and local, both liberal and conservative, to work constructively in partnership with industry to foster economic growth and job creation. Our key premise, if past is prelude to the future, is that innovation is the vital spur to growth and prosperity, and we fear that the U.S. risks losing our comparative advantage as the epicenter of global innovation.

Today we've assembled an extraordinary group. I was (inaudible) Brookings. There was -- Jack Kennedy once said that there hasn't been such a group -- when he had a Nobel Prize and it was at the White House and he said there hadn't been such a group assembled there since Thomas Jefferson dined alone. And I think we have a similar kind of experience here today at Brookings.

We have assembled an extraordinary group of leaders from the private and public sectors to explore these questions. They come from some of our most important industries: information technology, communications media and entertainment, manufacturing resources, defense and green technologies, and so on.

We also have with us today public policy leaders who have grappled with some of our most difficult public policy questions and, looking at Ann and others, have the stars to show for it.

The economic problems we will discuss today are manifest and urgent, but not susceptible to quick solutions. In fact, economic historians warn us that in the aftermath of debt-fueled bubbles countries often experience persistently high unemployment and low growth for a decade or more. To avoid

that fate we must work in earnest to construct ways to put the millions and millions of unemployed and underemployed Americans back to work. That means we have to devise innovative solutions, strategies to elevate our nation's economic output to its potential, which some of our economic experts around here tell me is as much as a trillion dollars more than we have today. It seems clear that this must be driven by innovation at all levels; by advances, for instances, in basic science, technology, industries of the future, process efficiencies, revolutionary business models, as well as -- and this is very important -- supporting innovations in capital formation, the delivery of public services, and approaches to institutional governance.

The dimensions along which we need to work are really quite straightforward and we intend to ask each panel today how public policy solutions can be implemented in their respective sectors. They included issues and areas which cutting-edge research is done every day here at Brookings and reflects the many components of U.S. competitiveness. The list actually, it goes on and on. I would like to share it with you. It's meant to be interminable: education; research and development; immigration; fiscal balance, federal, state, and municipal; health care cost control; entitlement reform; trade reform; tax reform; labor market initiatives; persistent poverty issues; metro area initiatives; governance reform; capital to lend and invest; and, most important of all, fostering innovation.

We're frequently advised by political operatives -- and I see some of my friends who are experts in these subjects out here today -- that

partisanship and paralysis mean that thoughtful solutions to these critical problems are simply not possible. We find that mindset unacceptable. In contrast, we believe that Americans are prepared to meet these challenges and those assembled here today are more than ready to do their part.

We're also often told that industrial policy or picking winners is folly in a market economy. That misses the point. Every high-growth country in the world -- many businesspeople here, like me, spend a lot of time in those parts of the world -- is implementing a carefully conceived, long-term plan to create the conditions for national economic competitiveness and the resulting prosperity. Right? Absolutely right.

This does not at all mean -- Dominic's here, the head of McKinsey's here nodding his head, so that's pretty good. McKinsey's the -- I feel like I've already been validated. Thank you, Dominic.

This does not mean at all tampering with the market's allocation of resources. Rather it means creating a foundation upon which markets can function and business can thrive.

As Strobe mentioned in his opening, this is the third in a series of meetings that Brookings has convened bringing together thought leaders from the private and public sectors under the banner Growth Through Innovation. The first of these two sessions were smaller brainstorming session with Brookings scholars, businesspeople, and policymakers that explored a range of these issues. Today you'll hear Brookings scholars talk about some of the work that these discussions have inspired as they moderate conversations with corporate

leaders and public officials. In fact, I'm happy to announce today that two policy briefs that have been produced as part of this effort are being released today: one by Darrell West -- I saw Darrell earlier -- one by Darrell West and one by Martin Baily. Where's Martin? Martin's, I know, here somewhere. Martin's in the back, voila.

Both touch on a topic central to restoring U.S. competitiveness and innovation technology skills transfer. Darrell's paper recommends moving from a family's first to a text skills first immigration -- visa policy, pardon me. Martin's paper offers complementary recommendations for increasing manufacturing in the U.S., and we have a few people here today who know just a tad about that subject. These are important papers and I hope we'll hear about them today.

In addition to the Brookings scholars whom Strobe just introduced, I'd like to thank the corporate leaders here today who braved the weather to attend, though it was a little bit of a paper tiger, at least in Washington. But I do -- a number of people got out of their respective cities earlier to get here and we do appreciate the effort people made to get here today.

This combination of research, private dialogue, and public discourse is what makes Brookings very, very special and which makes me very proud and pleased to be associated with it. But Brookings is also uniquely capable of creating a forum, like today, where partisan political differences and commercial self-interests can both be set aside in pursuit of the common good. I'm happy to assure you that this work will continue following today's session. The Growth Through Innovation team will incorporate today's conversation and

follow-up discussions in a strategy paper for national competitiveness and innovation in the near future. We look forward to sharing that with you.

In closing, many have argued that our problems are the -- today's problems are the culmination of a generation of both the accumulation of debt broadly defined and the neglect of basic investments in almost every sector of our society. And if so, the solutions could well require decades of remediation.

To most people this challenge seems just too daunting. To many this challenge seems just too daunting. Why not, as they say in this town, just kick the can down the road? To business leaders, though, that means we must act with a sense of urgency and resolve, so let's get started. (Applause)

MR. WEST: Okay. Thank you, Glenn. And before we start I'd like to acknowledge Glenn's leadership on this innovation issue. It was actually his suggestion that Brookings launch this forum on Growth Through Innovation and he has helped to make it an amazing success. Each conference that we have put on has gotten better and better. We appreciate all that he has done in emphasizing innovation and highlighting the challenges facing our country.

And, as a side benefit, we have also discovered that when we are really nice to Glenn, he's willing to show us his Boston Celtics Championship ring. (Laughter) And I tell you, it is a really nice ring. Even my wife is impressed with that piece of jewelry, so.

For those of you who don't know me, I'm Darrell West, vice president of Governance Studies and director of the Center for Technology Innovation at Brookings. And I'd like to welcome you to this session on the

information economy.

Strobe and Glenn have emphasized and explained the rationale for our program today and the importance of innovation for long-term economic development. There's little doubt that innovation is the key to American prosperity. It's one of the reasons the United States thrived after World War II and in following decades. With Congress back in session now all eyes are focused on how to improve the economy. Now, that clearly is the central issue facing our country right now. We all need to figure out ways to remain competitive and facilitate future innovation.

These are some of the reasons why Brookings last May launched our new Center for Technology Innovation. Our mission is to analyze the drivers of innovation and to enhance public, media, and policymaker understanding of technology innovation. We have undertaken research on digital media, health information technology, education technology, and public sector innovation, among other subjects. We work closely with the White House, members of Congress, and the private sector to determine what policies are needed and how to promote best practices in the public and private sectors.

In our research we have found that technology innovation is crucial for economic development. This area is one of the few industries experiencing double-digit growth, so if we want to get back on track, we need to strengthen our information economy. That is the platform for future progress in areas such as education, health care, energy efficiency, and mass entertainment. To help us understand the information-based economy we are pleased to welcome three

distinguished leaders to Brookings.

Jeff Bewkes is chairman, president, and CEO of Time Warner. Mr. Bewkes oversees Time, Incorporated, HBO, CNN, TNN, TBS, and Warner Brothers, among other parts of the company. Previously he served as chairman of the Entertainment and Networks Group and chairman and CEO of HBO. You see him regularly in the news offering his views on the industry and the future of television. Last fall, he wrote a widely quoted column for the *Wall Street Journal* with the very provocative title of "The Coming Golden Age of Television." You know, everybody thinks it's the Internet. He thinks television.

MR. BEWKES: It's the same thing. (Laughter)

MR. WEST: Good point. Goddamn, I hate to be upstaged by my panel members so early in the event, but he's exactly right. (Laughter) But he does have tremendous insights into how innovation takes place.

Randall Stephenson is chairman, president, and CEO of AT&T. And as all of you know, AT&T is the world's largest telecommunications company. As chairman he has strengthened AT&T's position as a leader in mobile broadband and global IP data. AT&T invests around $18 billion each year to upgrade broadband and bring wireless service to people around the country.

MR. STEPHENSON: Closer to 19.

MR. WEST: Closer to 19, excuse me. A billion here, a billion there. AT&T is launching its new 4G LTE -- Long-Term Evolution -- service and also is the carrier for Apple's popular iPhone. The digital infrastructure that AT&T and other telecommunications companies have built made possible the new

services that are coming online. So there obviously are lots of amazing innovations taking place in health care, education, energy, entertainment, and communications, and Mr. Stephenson is right on the frontlines leading to that innovation.

I'm about to introduce our third panelist. I've already been corrected on the first two, so I do this with great trepidation. (Laughter) But Julius Genachowski is chairman of the Federal Communications Commission. The FCC is focused on broadband challenges, job creation, and economic development. Prior to joining the FCC, Mr. Genachowski chaired Candidate Obama's Technology, Media, and Telecommunications Policy Working Group.

He has extensive experience in the private sector. He was chief of operations at the Interactive Corporation and co-founder of LaunchBox Digital and Rock Creek Ventures. So we're delighted to have him with us here today as well.

Our format will be as follows: I'm going to start with a few questions for our panel, we'll have a little bit of a discussion among ourselves, and then we will open the floor to any questions and comments that you have.

So we'll start with Mr. Bewkes. There's been a flowering of media and entertainment content providers. This has shaken up the industry and produced new players, vigorous competition, and new business models. Can you tell us what competition means in your industry and how it enables innovation?

MR. BEWKES: Sure. I don't want to change the mood because it

was a very serious and uplifting beginning, but we're in the middle of a period of huge success and innovation in the media business. I think the easiest way, because media's pretty big, is to look at television. And we all know that the television screen, the television business ahs been with us for a long time. You used that phrase it's either a Renaissance or a second Golden Age. Obviously the first Golden Age was when it was invented and it had this transformative effect on life, not just in the United States, but all around the world. And I think if you think back, the advent of TV in the United States was really the most vigorous and the one that served as a template for what then happened in the rest of the world. That's happening again and has been underway for at least 20 years.

And so if you think about the -- we'll do objective measures first and then subjective ones, and then you'll all be the judge. Objective measures: the ratings, the viewership, the earnings, the programming investment, the number of channels, the type of diversity of subjects that are on television every day, 24 hours a day, is more vital, healthy, every indicator up, including financial indicators, to this minute, every quarter without change. If you go away from objective measures in the TV industry to subjective measures, and you ask yourself what do you see in the quality of what's on? What do you see in the diversity of not only the subject matter, but the type of programming, the genres of programming, the mix between mass audience appeal efforts versus targeted appeals that may be of interest to you. We all know 20, 30 years ago, you couldn't find that on TV. It didn't work that way. It was a mass, low common

denominator industry. Not true today.

And so if you move then from the range and precise quality and focus of all the different kinds of TV shows that are on the air and absolutely a measurable dramatic increase in the money being invested in this program. Look at the talent, the directors, the writers, the actors that you used to associate with the big screen, they're working on television now and they're doing work that you can't do on the big screen because of the commercial nature of the film business, which I won't dwell on unless someone wants to ask a question about it.

So you have all this going on on the quality and health side. If you look around the planet, basically this system of an explosion of channels and different types of programming is being duplicated and created. The American development is being quickly implemented all around the world, so you're looking at the first point at a very healthy industry that's very connected to the citizens' lives everywhere.

That goes hand-in-hand with something I think Randall's going to talk about, which is the -- you can't do any of this without a very healthy, well-funded infrastructure that can bring you hundreds of channels. It can bring you high definition; soon it'll be 3-D. Increasingly it will be the delivery of all this kind of programming on every screen you have, which is why the Internet and TV are the same thing because there's no difference between your TV screen -- it's got a glass front; you all know what it looks like -- and a smaller one called your laptop and a smaller one still that's portable that's your handheld device. These

are all the same thing.

And so it's extremely important. Randall just said 19 billion a year and that's just AT&T. The amount of money put in in the United States in broadband road construction -- think of it like roads -- or all over the planet in this infrastructure capability is very important. It's a huge source of innovation. It, of course, has side effects in terms of education, low barriers to entry for people to come in over that system and create new programming forms.

And that industry, as it puts in the money to create that capability, now you have hand-in-hand the media let's you use the television channels industry. And the infrastructure industry that brings you your video and your broadband all together bringing you the next thing, which is all the programming you want on demand. You pick it, get it when you want, put it on any screen you want, and don't pay anything extra for them. Now, that's a business model. There are other models where you pay extra show by show, where you pay for other subscription providers.

But the point of it is, and then I'll stop, there is a huge vitality in competition and innovation that's occurring now in the intersection of Internet and television, which is basically accelerating. And I think to the point that Glenn asked at the beginning, it's a Brookings subject, what is the best way for public policy in the United States and around the world -- because they look at what we do -- to foster a good intersection or public square where this innovation can continue to take place. Because it's working very well as it is.

MR. WEST: Okay, you mentioned infrastructure. That provides a

nice transition to Mr. Stephenson.

AT&T is investing billions in broadband and wireless infrastructure. What do you see as the biggest obstacles to continue innovation and job creation in your industry?

MR. STEPHENSON: Obstacles. When I think of job creation that's been the topic over the last couple of years and I think of public policymakers. Everybody said it ought to be about creating jobs, and I -- you listen to Jeff talk and it makes it even more apparent that jobs are kind of a byproduct. Jobs are not the target themselves. Jobs are a byproduct of investment. Innovation is a product of investment. In fact, if you do your correlation coefficients, the highest correlation coefficient to jobs is capital investment.

And so I step back and say if you want to create an environment for innovation and an environment healthy for jobs, you have to create an environment that's very attractive for investment. And so from a public policy standpoint, when I think about what does that environment look like, one of the triggers you can pull to drive investment, thereby jobs and innovation. I mean, it's -- you'd be disappointed if a businessman didn't stand up here and say tax policy is obviously one of the greatest drivers of investment, and regulation being another one.

And tax policy is kind of front and center from my standpoint. You know, if you want more of something, you know, what should be your tax policy? You tax it less. If you want less of it, you tax it more. We do that with tobacco and alcohol: You tax it so you don't, you know, generate as much consumption.

And it was maddening, you know, to me coming up the last part of last year, somebody who invested 19 billion a year, as we were headed towards this cliff of driving up capital costs dramatically: dividend taxes, capital gains taxes, accelerated depreciation, you know, all these things going away. They ultimately got put in and I commend the administration, I commend Senator McConnell for getting this put in place, and it brought some stability. It kept capital costs down. It allowed us to continue investing at the same pace we're investing, but those are -- I can't tell you how critical those are from an infrastructure provider to continue to drive investment and to drive job creation in all these media that Jeff was talking about.

The next, and I would say just as important, is regulation. And regulation affects capital costs in that it can create uncertainty. And so when I think of how our environment is regulated and you heard Jeff talk about what's going on, we are, as a company, AT&T, and I would even suggest as an industry, we are almost at full investment capacity. I don't know that we could put much more capital away than we're putting away at this time in the industry. And so regulation is one of those things that sticks its head up, and obviously uncertainty is one of the greatest drivers of capital costs as well.

That's why we worked very aggressively. I take my hat off to Julius and his team that we were able to come to a place on how wireless and the Internet is regulated, but Julius would know I was lying if I said I was totally pleased with it. But, look, it's a place where we know what we have. It accomplishes two variables: you know, I always say regulation needs to be fair

and it needs to be consistent. And the capital investments we made, they're multi-billion-dollar bets that we made every year and they are multiyear investments. They're 10-, 15-year horizon investments.

And so making these capital outlays when you don't know 5, 10, or 15 years how they're going to be regulated, how you can price services and deliver services. That's a big deal to us. So working towards an end where, you know, we didn't get everything we'd like to have had. I'd like to have had no regulation, to be candid, but that wasn't going to happen, obviously. (Laughter) But we've landed at a place where we have line of sight. We know what we have. We can commit to these 10- and 15-year horizon investments.

And I'll finish by just saying -- a proof point, if you will -- is we have these tax policy changes put in place right before the holidays; we have these regulations and these rules that are better defined coming into the holidays; it is not a coincidence that we stepped up last week and said we're pulling all of our 4G investment forward. We're accelerating all of that to take advantage of these tax policy changes and, again, we'd have some clarity, some line of sight in terms of how these investments will be regulated. So I think those are very critical and those are the two elements from an investment and infrastructure standpoint that I think are most important.

MR. WEST: Okay. Mr. Genachowski, a year ago the FCC released a National Broadband Plan with an ambitious agenda for innovation in education, health care, energy, public safety and spectrum, among other areas. What do you think are the most important public policies for encouraging

innovation?

MR. GENACHOWSKI: Well, let me start off, if I could, by telling you about what I saw last week at CES. Right? So the Consumer Electronics Show is one of our big annual showcases for innovation, technology investment, and I noticed two things this year that are worth pointing out.

One, if someone went to CES 20, 30 years ago, it also was a big showcase for innovation and investment, but almost all the devices would have been built on a platform of electricity. Electricity was this incredible platform for innovation, it lead to TVs and radios and ovens and one of the reasons we led the world in economic growth in the 20th century.

Well, today, all of the incredibly cool gadgets, devices, products that I saw at CVS were connected, in addition to electricity, to our information grid, connected to the Internet, wire to wireless, everything there. If you shut down the connectivity, you would have shut down CVS. So that's point number one.

Point number two is I think that in the past the typical -- almost all the products at CES would have been the consumer products that we buy around the holidays. Nothing wrong with that.

SPEAKER: It's a good thing.

MR. GENACHOWSKI: A very good thing. But -- and this is rough and we'll ask the folks at CEA exactly what the statistics are, but I noticed two things this year. One, more and more products that go to business productivity, in addition to home entertainment, and more and more products that are part of

vertical economic categories that matter because of opportunities for economic growth, but also because of the social benefits, like health care, energy, education.

And to me, the reason I start there is because it really illustrates what we have been trying to accomplish around broadband. Everything we're doing is built on the premise that making sure we have a world-class infrastructure in the United States for wired and wireless broadband is what is essential to the kind of innovation that both of the companies that are up here are working on, the many other companies that are working on it. And you do see a tremendous amount of innovation and a tremendous amount of really exciting things going on, attracting a lot of investment, opening up new markets.

To your question about what the policies are that we're working on, there are some challenges to this great story that we're worried about. You know, one at CES was illustrated by what happened if you tried to get on Wi-Fi or even if you tried to, you know, make a mobile call around the convention center. And, you know, congestion was pretty high, spectrum was being very heavily used, and a lot of people there had pretty frustrating experiences. And the tell there is the products that these companies and others are generating that are causing consumers to put so much more demand on our spectrum infrastructure -- smart phones, tablets, it's just incredible, it's all great -- it's dramatically outstripping the supply of spectrum that we see online at the FCC. No, I don't have a secret drawer with a lot of spectrum that I can just put it out. And so we'll come back to it, but I think that's a challenge that notwithstanding what I think

right now is a leadership position when it comes to wireless and wireless innovation in the country, and also longstanding leadership around television-related innovation is something that could hold us back; other countries aren't waiting around.

Another major policy area that we're working on -- and I can come back and talk about any of these -- we continue to have policies in the country that made sense in a communications era that was dominated by old telephone service that don't make as much sense in an era that's broadband. One example is something called the Universal Service Fund. Programs spend several billion dollars a year, has done really a terrific job of connecting people around the country to telephone service. It still wakes up every day and supports connecting people in rural areas and others to telephone service. Well, that doesn't make any sense. We have to transform it, modernize it to apply to broadband. We have to look seriously at a whole bunch of wasteful, inefficient, not particularly smart policy pieces that have become part of the program over the years.

It's going to be more expensive to support broadband in rural America. We have to do it not spending any more money than we are now, which means we have to cut and be smarter about the program that we have. It's tied up. This is a level of detail that'll probably be not interesting to many of the people, but it's tied up with another program called Intercarrier Comp. The point is right now this whole system is creating the opposite incentives in many ways of what we would want. In some cases it's discouraging companies from going from circuit-switched communication system to all IP digital packet

switched systems. We have to tackle that third thing.

We have to continue to look at barriers to investing in our communications infrastructure, wired and wireless, so that -- while Randall may be at the peak in terms of his investment capacity, not everyone is. A big part of our job is catalyzing more and more private investment and then having that investment go further. And so there are a whole bunch of areas, the kind of blood-and-guts of communications infrastructure -- tower sighting, pole attachments -- that are not particularly thrilling, but that together I think can make a difference in catalyzing more investment and then getting those investment dollars to go further, that is for the same, you know, dollar you get two towers up instead of one tower up. If we can reduce red tape, if we can reduce barriers, reduce inefficiencies to cause that to happen, all of those things together will put us in a much stronger position vis-à-vis the rest of the world at a point in time where there's clearly global competition going on in these areas.

MR. WEST: Jeff, in your various public statements you've talked extensively about a TV everywhere strategy, regardless of platform: TV, the Internet, tablets, mobile devices. What does this proliferation of platforms mean for future innovation? And how should the government alter its regulatory approach in light of the emergence of new platforms?

MR. BEWKES: Before we answer that I just have to say this must be a good Brookings session because if we're talking about tower sighting and pole attachments -- (Laughter)

SPEAKER: I'm getting teary-eyed over here, Jeff.

MR. BEWKES: (inaudible) on the ground.

MR. WEST: Yes, it's a public policy these days, cell towers.

MR. BEWKES: So all of these -- we don't know much -- and I guess, Randall, you should talk about the spectrum issues and how you can interact and help the policy, particularly in rural areas; we don't do that. All the content companies -- and this is true whether it's television, magazines, whatever it is -- we're basically putting out the content on the theory, and this is now accepted by I believe every media company and every connection company -- telephone, satellite, cable -- if you have paid for a magazine, if you have paid for a television network, if you have any economic relationship with any of those pieces of content, and you used to get it as a TV channel or a scheduled TV channel or as a magazine, this concept is you can now have it for free, no extra payment, on any device connected electronically. And it basically works on demand, so that if you want to watch whichever show isn't scheduled tonight, but it was on last night, you can do that. Any of you that have HBO today can do it now, so you can see that future now. And it would be no charge across all devices.

The same thing with magazines. So if you were reading *Time* magazine, you can do this on an iPad right now. If you have -- *People*, I'll use *People* as the biggest magazine in the world. And if you have a subscription to People magazine and you have a tablet device, including an iPad, if you're a subscriber, the thing is coming to your house, you turn on your -- light up your iPad, push the *People* icon, you'll be reading *People* for free with moving

pictures. And if you want to read deeper into a subject that was published in another issue, you can do that, too.

So what you have, whether it's television, magazines, frankly any kind of content, is a business model that simply uses all of these advances without changing the wholesale or distribution structure, at least not initially, and that doesn't require consumers to make a payment or deal with another entity. And the aim is if you think about your relationship to any TV network or magazine, something you know how to use -- you want to go watch CNN or Discovery Channel -- it should work the same on every screen on every device. It should all be on demand. You shouldn't have to pay differently. You shouldn't have to do anything. And that's basically a massive innovation that takes this industry, which I started out by saying the ratings, the economics, the programming, all at the top of wherever they've ever been, and it makes it more useable at no extra charge. So it's a good deal.

Now, there are certainly issues as we go along of how does the economic prospect of that go forward? You have cable packages that you pay for. You may want to discriminate more in terms of what you get. Most people -- or a lot of people are paying more every morning for coffee than they're paying every day for all of this media choice. And the one thing I would say on behalf of the media business and the tech business is that there is an idea, which I hope you take it as a joke, it's kind of an un-American idea, which is that, you know, the new -- let's use the new content in a way that's good enough. It's good enough to have an inadequate selection on your broadband screen, one that's

less complete than the one on your television. It's good enough to have it with bad resolution, no high-def, and no 3-D, and not that much on demand, and with latency. No, it isn't good enough. That is not how we got in any of these industries to the leading position in the world.

So let's think about what we always think about in this country: the highest quality, the biggest innovation, the widest availability, the most freedom of choice.

MR. WEST: So, Randall, you know, Jeff has mentioned the emergence of smart phones, tablets, high-definition video, and new wireless applications in a variety of different areas. What would you like to see in terms of spectrum policy, regulation, or other policies to further these new technologies?

MR. STEPHENSON: Well, Julius said it best. If you want this world, Jeff just articulated, to be a reality and a reality at a reasonable price point so the consumer can take advantage of all this, the one brick wall we're looking at is spectrum, availability of spectrum. And to put this into perspective, you know, the world Jeff is articulating, you know, I think it was maybe five years ago we first started talking about a three-screen strategy, you know, and the people that listened said, oh, that sounds really great and would kind of nod and go on. That's a reality today. What Jeff articulated we offer today the product that we sell called U-verse, a TV service. I can get this service on my iPhone. I have it on my iPad. That programming is available to me in all of those formats and all those medium, so it is there. What will keep us from proliferating this, you know, broadly to the entire consumer base is spectrum.

All of this -- you know, the bandwidth in wireless is this airwaves -- these airwaves, this spectrum. Over the last three years, if Julius will approve this last transaction we just did with Qualcomm, we'll have spent $11 billion just on spectrum. And we still see the end of the spectrum that we have in our portfolio now. And we -- maybe 3 or 4 years ago, our pattern was we'd go through 10 megahertz, a block of this spectrum, every 4 or 5 years. Today, thanks to the iPhone, the iPad, this content of Jeff's that we're streaming to all these devices, we'll burn through that in about 10 months today. So you can do the arithmetic and see just how quickly the spectrum is being consumed and utilized. This is why Julius and I, we -- he talks about it all the time, I talk about it all the time, that we have got to do something to free up more spectrum, get more spectrum into the hands of operators and so forth.

What does that process look like, Darrell? Julius and I would probably have a difference of opinion here. Go figure, right? But, you know, I just -- I always believed the markets ought to work, let the free markets work. And so I think auctions and so forth tend to be the most efficient way to ensure Treasury gets the most value for the dollar out of these and then allocate the spectrum that way. I understand there are other public policy issues, but to make this world that Jeff is framing a reality, this is the one issue that will be the constraint as we move forward in the next five years.

MR. WEST: Okay. Julius, both Jeff and Randall have highlighted this spectrum issue. What are you doing about it?

MR. GENACHOWSKI: Well, I actually think this is an area, coming

back to where Glenn started, where there's the opportunity for a smart, nonpartisan, market-based approach to deal with our country's spectrum needs. As I said before, we don't have a lot of spectrum just sitting around. In fact, let me just sort of give you some numbers to backup what Randall was saying.

The amount of spectrum that the FCC has kind of based on a status quo pipeline to put on the market for mobile broadband represents about a threefold increase over what's available now, which sounds pretty good until you see the numbers that, you know, Randall knows better than I do. But over the next five years, the data demand on our spectrum coming from smart phones and tablets, you know, because of all the content that Jeff is doing and others is likely to be more on the order of a magnitude of a 35X increase over what we have now, which I personally think is too conservative because those studies were generally done before the iPad really took off. So that's a gap that we have to close if people's expectations to be able to get content and incredible data-rich services over their mobile device is going to work.

We have various parts of spectrum where most people would look at it and say you know what? That seems underutilized. We're not really sure if the market would put the spectrum to those uses if there really was a free market and if there weren't parts of spectrum allocations that were protected for market discipline. Certainly a lot of people point to over-the-air broadcast spectrum as being in that category. When I was a kid, I got 100 percent of my broadcast viewing over the air. Today, most Americans get under 10 percent of their broadcast viewing -- this isn't a point about TV and the success of TV. Jeff was

right, TV is going Internet. What was the over-the-air broadcast TV business really should just become the TV business.

So how do we get to an area where we can think creatively about the 300 megahertz -- believe me, it's a big number -- of very high quality spectrum in every market that's set aside for what was very important technology in the 20th century? Well, here's the idea that we've put forward.

I agree with Randall that auctions have been the best method devised to allocate spectrum. What we've proposed is running essentially a two-sided auction where the supply of spectrum in that auction would come from broadcasters and there are bands that we could look at, too, who would create the supply of spectrum for this auction on a voluntary basis, incentivized by getting some portion of the share of the auction proceeds. We basically let the market say, hey, look, you know what? If you think you have a better idea for use of the spectrum than what the market is willing to offer you, that's fine, if not.

And the reason why -- some people ask why does government have to be in the middle of this? The reason is the way that broadcasting was originally allocated, a checkerboard of 6 megahertz blocks noncontiguous so that we could have local broadcasting and not interfere from town to town or city to city, I think Randall will agree that that's not the way that companies like AT&T and others want spectrum for mobile broadband. They want large contiguous blocks of license in blocks more than 6 megahertz.

So what we need to do is incentivize underutilized license holders to give us back the spectrum and then reorganize the spectrum so that we can

free up big contiguous blocks. I'm getting a little bit more wonky and detailed here than I should --

MR. WEST: That's okay at Brookings, by the way. (Laughter)

MR. GENACHOWSKI: But this is a -- you know, it's market-based idea that will help make sure that our invisible infrastructure, our spectrum infrastructure is what it needs to be in the next few years. We need the authority of Congress to do this because oddly we have the authority to take back spectrum from someone, we have the authority to auction it off. We don't have the authority to share proceeds to run a two-sided, incentive-based, market-friendly auction.

So this is an example of what -- you know, one of the things I think we can do. There are other things we're doing on spectrum to reduce restrictions on other bands of spectrum to allow more mobile broadband use. There are things that AT&T and other companies are doing on the ground to get more efficient use of spectrum that we're trying to encourage. But the big ticket thing is this incentive auction idea, which if we don't do it I'm very worried that other countries in the world will end up with a more robust spectrum infrastructure than we will, and this huge advantage we have right now of the most incredible mobile innovation occurring in this country could move to other countries.

And, you know, it sounds crazy, but, you know, a few months ago, people woke up and read the newspapers and saw that a company called Applied Materials -- very important technology company based in Silicon Valley, focused in the energy technology space -- decided to move its CTO and its

technology operations from Silicon Valley to Beijing. You know, how many companies have to make that decision before we say, hey, there's a crisis here, we've got to deal with it?

MR. WEST: Let me ask one more question of our panel and I'll just throw it out to all of you, and then we'll open the floor to questions and comments from you. And it actually follows on the last point Julius was making about the global situation in which the U.S. finds itself. There was a report by The Information Technology & Innovation Foundation that claims that the United States is slipping behind other countries on innovation and competitiveness. It specifically names places such as Singapore, Taiwan, Finland, South Korea, and China as nations that have gained at our expensed. Is the U.S. losing its technology edge? Anyone.

MR. STEPHENSON: Well, I'll give you a classic example. We, last year, put out a Request for Proposal on our 4G network build. And so who would be the technology suppliers, the key technology suppliers? I won't list the four company names, but I will tell you not one of the four is headquartered in the United States of America, and I find that alarming. The United States is driving this mobile broadband revolution. I mean, we are -- we're the engine behind this.

You look at what's transpiring here in the U.S. in terms of the content Jeff keeps talking about and the volumes and the spectrum requirements. There is not a country close to the U.S. in terms of the level of volumes and the innovation that's going into mobile broadband here in the U.S. and the thought that from a manufacturing standpoint not one of those

companies is headquartered in the United States I find alarming, you know. And one has to ask himself why? Why is that? And, you know, probably all of us in here would have different reasons for that, but I think that is a patent and a blatant example of where we would seem to be losing perhaps our technology advantage from the manufacturing side and innovation side.

MR. GENACHOWSKI: I just had one thing and I don't know, Darrell, if it's the same study, but there is an ITIF study that looked at 40 industrial countries and ranked them on a small number of metrics relating to innovative capacity and competitiveness.

MR. WEST: Yes.

MR. GENACHOWSKI: And on a snapshot basis it ranked the U.S. 6th out of 40. And these metrics go to broadband and some other metrics that would make sense, I think, to everyone in this room. Ranked the U.S. 6th out of 40, which is an interesting Rorschach test when you tell it to people because some people say, oh, 6th. (Laughter)

MR. WEST: Yes.

MR. GENACHOWSKI: Better than I thought. And, of course, it's crazy the idea that we could be sixth. But anyway, but that's not even what was scariest about the study. The study then looked at the 40 countries and those metrics, including broadband metrics, and rated each country on rate of change. All the countries were improving and so there's really rate of improvement. And on that basis it ranked the U.S. 40th out of 40.

And I'm sure people can attack the study for this or that, but that

tells you something that really should worry us. And I also think it gives us a little bit of a clue about, you know, why aren't we moving faster as a country to deal with some of this? I think it's because, you know, we are moving forward when it comes to broadband, but other countries are moving faster. And so we have the illusion of forward progress and most Americans don't really appreciate that other countries are very, very focused on this.

I know when I visit with my counterparts in other countries, they're very, very focused on this. In Australia recently an election turned, literally one government was picked over another because of broadband policy. But I do -- you know, I do worry that if we don't take care of our broadband infrastructure over the coming years, then all of the incredible innovation that we see at, you know, companies up here or others, companies scattered all over the world, that we're not going to have the basic infrastructure on which those products and services can succeed, and we risk seeing that innovation shift to other parts of the world. And I do think that there are things that we can do to tackle it.

MR. WEST: Jeff?

MR. BEWKES: I agree with all of those things and the media business, content creation, is not primarily thought of as a tech -- because you asked the question in really the frame of technology, (inaudible) innovative technology. If you have a healthy infrastructure on -- technology innovation is not the only kind of innovation. And I think Glenn said at the beginning, business model innovation, innovation in the things that given the rule of law and cultural history of the United States -- think of basically free expression, content diversity

-- one of the great -- in fact, I don't want to overstate it, but the forms of popular entertainment, whether it's music, movies, television, magazines that exist around the world, there were most of them pioneered in the United States because of the nature of our society. And so while I take nothing away, I agree with all the statements on how to preserve a very innovative and capitally funded platform on tech infrastructure, let the American system work in terms of content creation. We're the best at it. We're the only country where all over the world everybody wants our popular cultural exports, and they range from the somewhat tawdry, as we all know, to the quite excellent in other ways.

And so let's not forget that innovation goes beyond technical and guys in white coats. It includes business model freedom. It includes that intersection of popular culture and free markets that is so admired around the world, that is instantly taken up and copied. I'm talking about forms of TV shows, forms of movies copied in other countries in other languages with other casts.

MR. WEST: Right.

MR. BEWKES: Let's not count ourselves out. We have huge areas of success.

MR. WEST: Let's open the floor to questions and comments from you. There's a person with a microphone right there in the aisle. And if you could give us your name and organization, and we would request that you ask a question as opposed to making a long speech because the only people allowed to make long, boring speeches at Brookings are the scholars, of course. (Laughter)

MR. GOSTEV: Sergei Gostev, Russian Academy of Sciences. I have a question for Chairman Genachowski. I have read an article in the *Washington Post*, I think, about your efforts to restructure this Universal Service Fund and I found out that companies like AT&T and Verizon are actually blocking the efforts to restructure the program. Is that true? Thank you.

MR. GENACHOWSKI: Well, first, I bet you when I first said Universal Service Fund most people thought that's not what we're going to talk about today. So it's not true actually. I think we've been working with a very broad set of companies and others in the ecosystem around Universal Service Fund and Intercarrier Comp to come up with a smart, efficient way to transform it, to modernize it from telephone service to broadband. And so unless, Randall, you're doing something that I don't know about --

MR. STEPHENSON: (inaudible), you doing something I don't know about? (Laughter)

MR. GENACHOWSKI: I think we're in a position that's not easy because, you know, in a lot of different areas, I would say in both the USF area and in the spectrum area, we face as a country sort of innovator dilemma problems, where it's sort of precisely our successes in the 20th century that present challenges from both the business and a public policy perspective for the 21st century. And so, you know, telephone service -- I think the rollout of telephone service in this country in the 20th century was a huge success, helped fuel commerce, connect people, connect businesses. You know, I remember as a kid traveling to other parts of the world, you couldn't go anywhere that had

better phone service than the United States. It mattered.

Now, around that built up a whole series of policies that were optimized for telephone service and the market structure that existed at the time. And they created all sorts of acronyms and words that no one understands, but the bottom line is what made us successful in the 20th century is not what we need in the 21st century. But the fact that a whole series of reliances and dependencies grew up around these old programs makes transition hard, just as it does for, you know, a market-leading company that deals with a new disruptive technology and may know exactly what it needs to do strategically. But it can be hard to make the change, and Jeff is doing it at Time Warner. It's much harder sometimes than having a whiteboard and starting something from scratch.

Spectrum's the same way. You know, in the 20th century -- and I think Jeff alluded to this before -- what we did with spectrum in this country, none of this is perfect, but on a comparative basis we commercialized our spectrum here faster and better than any other country in the world. It led to a very vibrant, healthy broadcast television industry that, together with our film industry, created this content industry that is a major American business, a major export to the rest to the world, and, you know, has been an amazing contributor to our economy.

My point is that some of what led to that success in the 20th century, you know, in particular the use of spectrum for broadcast television, is holding us back from what we need to do in the 21st century. And what I'm looking to do, and I think Brookings is a great place to talk about this, is to get people to say you know what? Yeah, that's kind of right and let's tackle this

innovators dilemma and make the tough policy choices that we need to make so that whether it's USF or whether it's spectrum, we're moving in the right direction for the 21st century so we can really unleash the kind of things that these companies and others are doing in a world that's very different because the global environment is very different.

MR. WEST: Other questions? Right there.

MR. BOLIEK: Hello. Brooks Boliek, POLITICO Pro. I listened to you guys talk about the market and having lived through a couple of huge market failures I wonder where does the public interest come into this? Should AT&T be required to make my iPhone work in Manhattan? Should Time Warner be required to, in, you know, the broadcast world, with the indecency, comply with indecency? Where does that come from? Where is the public interest in all of this about how great the market is?

MR. GENACHOWSKI: Look, I think everything we've been talking about today has been about the public interest, you know, driving the American economy, driving innovation, driving job creation. So this has been a discussion about the public interest.

On -- you know, Randall will have something to say about iPhones in New York. I will tell you that a lot of the spectrum discussion has been about that, and I think Randall can elaborate on that.

On indecency there's not much to say. We've got litigation that's addressing that issue in courts and we'll have to fight that litigation and see how it's resolved.

MR. STEPHENSON: I think the free markets have worked quite well when you think of wireless. An iPhone comes out, I mean, think about this. That came out three years ago. And in the course of that three years, you know, two years ago there was no such thing as an app store. I mean, literally it was launched two years ago. This thing is moving at a remarkable pace. But as a result of that technological introduction, the iPhone, now you look at the opportunities, whether it be an Android-based, a BlackBerry-based, a Windows-based, you know, everybody has a touchscreen, smart phone, mobile broadband type device in the marketplace. And absent that, I don't think you would see this kind of proliferation of technology. You're seeing the same thing happen with tablets today. You have kind of the state of the art come out right off the bat, iPad, and now there are tablets proliferating all over the place.

And so I would suggest the markets are working very well. The markets, trust me, are driving AT&T to invest at levels that are unprecedented in the history of our company, trying to stay ahead of this capacity and innovating new technology.

You know, it's -- you listen to the discussion on broadband build, it's kind of an interesting, below-the-radar-screen type phenomenon, but one of the greatest broadband projects in the world right now is all the fiber being deployed to these cell sites all over the country. I mean, we're investing a lot of money -- Verizon, Sprint, T-Mobile -- on deploying fiber out to these cell sites. So you're getting this massive introduction of technology as a result of these technologies. The free markets are working. It's driving this industry to invest at unbelievable

levels. It's driving technology curves that I think are very, very impressive. And it's driving prices down. I'm not sure what more you want out of the system.

MR. BEWKES: I think if you asked about compliance with indecency, that has a specific meaning. Julius addressed it in terms of broadcast because it comes over the airwaves into your home unbidden, you don't choose it. If you look at the voluntary industry, the one where you choose a channel or a magazine or a book, you put it in your home, what the industry does and we certainly do is we label and identify exactly what's in there so you have the choice and can control it. And there's plenty of things if you're particularly focused on the question of indecency with regard to television that allow parents to try to deal with what their kids do. Now, it gets -- I'm not sure if it's funny or sad that your kids can beat you when you're trying to use those devices. It's a difficult problem.

But just think about the thing -- if the question was asked in reference to television, think about asking that question in terms of the Internet and what content and lack of control there is for people, particularly young people, to wander into really bad neighborhoods. And everything that you have as an issue, if the issue is, you know, suitable content for younger -- for kids, you have it in spades in the Internet.

MR. STEPHENSON: And you take that to your kid's mobile device and it compounds, right?

MR. WEST: We have a question over there?

MR. AUGASE: Thank you. Byron Augase from McKinsey. I

wanted to ask a question about -- well, this is a huge industry and has a huge impact in and of itself on investment and innovation. I wanted to ask a question about its impact on other industries as an enabler.

Julius, you mentioned health care, education, energy. Just to take those three examples, those are huge industries in themselves where consumer behavior and new business models can make a big difference in those industries. What are the most interesting examples or opportunities you see for this industry enabling others like that to innovate?

MR. STEPHENSON: All of the above. I'll go first and you have a lot to say on this and you and I talk about this a lot. But health care is the most dynamic that I can think of. And you think of the health care ecosystem, if you really want to drive efficiency, you want to drive innovation, you want to drive improved health, the telecom infrastructure will probably accomplish this I think as effectively as anything. Health care in the home, you need significant bandwidth into the home to really begin to have monitoring capability, diagnostic capability, as well as access to doctors all over the world. If you have a really robust broadband infrastructure into the home it changes a health care delivery model. These mobile devices that we're talking about and think about this spectrum, the ability to monitor diabetes patients real-time live with devices on the body, the ability to monitor heart patients, it just goes on and on, it's a very exciting area. But, again, the more this proliferates, the more demand and the more stress it's going to put on Julius' spectrum situation that he's talking about. But this will change how health care is delivered. And then I won't go into it all,

but you can, you know, let your mind go what that means as it relates to education and then energy.

You know the smart home, I'm not sure that the energy sector itself will lead the way in terms of the smart home and energy management. I do think a robust broadband infrastructure will accommodate people to begin to manage the home energy requirements and business energy requirements independently of the energy sector, but I may be proven wrong on that.

MR. GENACHOWSKI: I agree completely. Health IT, huge opportunities. You know, we're moving to make medical records electronic. You all know about that. If we make medical records electronic and then we forget to connect hospitals and clinics and family doctors and patients, you know, as appropriate, we won't succeed on the incredible cost-saving benefits from electronic medical records and that new industry won't be as strong as it could have been if we get the communications infrastructure right.

Energy, same thing, I agree with Randall. Integrating smart grid and our broadband infrastructure in a smart way that empowers both, you know, the supply side -- the providers' electricity -- and the demand side -- consumers -- huge opportunities.

Education, same kind of thing. Distance learning is a wonderful thing. I've had the chance to see it upfront as I have some of the health care examples. And let me just close on this point by talking about digital textbooks. You know, it's such a wonderful vision. I have a 19-year-old who, you know, during high school and most of elementary school carried this big backpack, 50

pounds of books to school back and forth every day. He was lucky he went to a good school. His textbooks generally seemed up-to-date. Most of the country they're carrying around 50-pound backpacks of books that are not up to date. This whole thing is crazy, right?

There's no reason, especially as the prices of tablets are coming down, that every student in the country shouldn't have some kind of digital learning device that has all of their textbook information and can be -- this is easy for innovators around the country, right? -- personalized learning so that you can actually help teachers deal with 20, 25, 30 kids in a class who are at different levels on math or other things. We should be the first country in the world to move from paper textbooks to digital textbooks, and it's a wonderful national challenge.

MR. BEWKES: We're just thinking make more doctor shows. (Laughter)

MR. WEST: Okay. We have two -- we're going to take two questions over here, John Thornton and Zoe, and then we'll give our panel a chance to respond to each of them.

MR. THORNTON: This is for Julius. Just to be very pragmatic on this topic with this wall that Randall talked about of spectrum and your proposed solution and all the good that could come out of that, just for kind of a sanity check what are the chances that the Congress will go along with your proposed solution? And if so, in what timeframe?

MR. GENACHOWSKI: You know, I --

MR. WEST: Hold on just for one minute.

MR. GENACHOWSKI: Yes.

MR. WEST: Zoe will -- we'll take multiple questions and then give the panel a chance to respond to each of them.

MS. BAIRD: Zoe Baird, Markle Foundation. Jeff, you spoke with great enthusiasm about the ubiquitous platform where you could identify people on lots of different devices and deliver all the content they want. You also talked about the places America innovates that include our values and our policy interest. Randall, you talked about the need for the sustainability of policy and regulation and health care, health IT.

Embedded in all of that is an unstated question. I hope this isn't a downer at the end of the program. I hope you'll approach this with the same enthusiasm. What are your ideas for how to innovate a user control of information and on privacy protections so that we can have predictability and the robust use of IT that you'd like to see can be sustained without user backlash?

MR. WEST: Okay. So, Julius, your plan in Congress and then user control and privacy.

MR. GENACHOWSKI: Well, I'm not an odds maker and I defer to other people. I do think that the incentive auction idea, you know, bringing market forces to underutilized bands of spectrum, is exactly the kind of idea that should be nonpartisan where everyone who's interested in our spectrum future should be able to roll up their sleeves together and say let's make this work. So I'm hopeful. We've had good conversations with people on both sides of the

aisle. You know, our job at the FCC is to be a resource. We will be, we'll be very active, you know, and I'm hopeful, but not certain. You know, there have been examples where smart, good ideas didn't go anywhere.

SPEAKER: What's the timeframe?

MR. GENACHOWSKI: Well, as soon as possible. Really, I mean, I think, you know, running this kind of process is not instantaneous, right? It takes a few years from developing the idea to actually running the auction. I think given that the trends around spectrum usage are not slowing down, right, Jeff wants to get his programming on every platform everywhere, you know, using creative business models, and that's great. So the gap is going to increase. We've got to tackle it as quickly as possible. So I think every month that goes by without tackling this is a month that hurts us from a global competitiveness perspective.

And just one word on that. Other countries are looking at exactly this, not exactly the incentive auction idea, but at freeing up more and more blocks of spectrum for mobile broadband. Many of our global competitors don't have the same challenge because they weren't as successful in the 20th century and they didn't commercialize their spectrum, and so they can have much easier conversations inside their countries about what to do. We actually have to tackle harder problems here, spectrum USF, because of our success in the 20th century. Well, that's fine. I just think we have to admit that and figure out what we're going to do about it and not let, you know, older reliances and dependencies slow us down.

MR. STEPHENSON: Can I make a brief comment? I think he's right on and I -- the sense of urgency, I'm very pleased with where Julius and his staff are on this. Historically, from the time we began one of these processes till the time we put spectrum online it has been about six years. Six years is too late on this one, you know. And it's arithmetic, right? You run out of spectrum, where does it squeeze out? It squeezes out on price. It's rationing, right? So the urgency on this one is really important.

MR. BEWKES: On the question on privacy, I don't think it's a downer. I think it's a great question. It actually offers a lot of opportunity. There's no reason that giving all of us more choice over what we want to read, watch, whatever it is and get it when we want on whatever device and not pay extra, that doesn't need to lead to any diminution of privacy. But if you talk to different age groups or different individuals, people choose differently as to whether they want people to know what they're watching or reading or whether they want to share that with someone else. Young people tend to want to share it more. I think we all know in terms of popular media that one aspect of popular media, go to the movies with your friends, talk about it with your friends. Increasingly, people do it at home or on screens and they communicate or get their friends to watch it with them.

The point, I think, is that it has to be a real choice, not this thing where whoever's creating the system creates an opt-in or an opt-out in a way where you end up or your kids end up defaulted into lack of privacy that they did not want. And you know it's a very complicated issue. There's a lot of people,

I'm not one of them, that want all their -- what they do tracked so they can be given either content proposals or advertising that fits whatever they're doing. I don't like it, but some people don't care. The point, I think, is we've got to really make it so it's in the control of the people, not the corporations as to how it works.

MR. GENACHOWSKI: Can I add one thing just very quickly why it's such an important topic. We have a broadband adoption challenge in the U.S., right? About 65 percent of people have adopted broadband. It should be closer to 100 percent. It's 90 percent in Singapore. We have an adoption problem when it comes to small businesses in the U.S. Too few small businesses are taking advantage of the opportunities to expand their markets and lower their costs with broadband.

There are many reasons for this, but one of the reasons is kind of a lack of trust in what happens with information when it goes online, and some of those concerns are legitimate. And so in addition to the really powerful values reasons for getting privacy right, there's also an economic reason. If people aren't confident that the Internet is a safe place for their families, a safe place for their businesses, they're going to hold back and that undermines the kind of positive ecosystem of innovation that will really matter to our economy.

MR. WEST: Okay. I think we have time for one last question.

SPEAKER: This question is to the chairman of the FCC. Many years ago, about a decade ago, when I was in secondary school in India, we were learning about data and database management. By the time I finished

secondary school, we were talking about information technology, how to manage information technology, because information was (inaudible) of data. And by the time I left school, India was talking about a knowledge-based economy. So it is something like a (inaudible) it's a pyramid. You have data at the bottom, information on top of that, and on top of that comes knowledge and beyond that comes wisdom. And I've heard that the Chinese government is actually trying to create that wisdom-based society.

So today, in 2010, we are actually sitting here and talking about the future of this country and you're talking about creating an information economy. So don't you think that you're actually looking backwards instead of actually looking forward? Because some other countries are actually doing that from my own experience.

The second question to --

MR. WEST: Actually I think that question will be sufficient in our time remaining.

SPEAKER: (off mike)

MR. WEST: The switch from an information economy to a wisdom-based economy, I like that question.

SPEAKER: Yes, it's a good one.

MR. GENACHOWSKI: I'm not sure I completely understand it. I think --

MR. WEST: That's what makes it such a great question.

(Laughter)

SPEAKER: Glad you got it.

MR. GENACHOWSKI: But it wouldn't be the first time. So I'm going to apologize, maybe we can talk about it afterwards.

MR. WEST: But I think the general point he's getting at is how -- are we as forward-looking as some other countries? I mean, when you think about India, China, other countries in Asia, I know when I travel there I'm very impressed with just the decision they're making, their governance structures that seem better designed than ours to make these types of changes. Do we need to be more forward-looking?

MR. GENACHOWSKI: Right. Well, I think that's been the subject of the discussion and there's a real challenge there that we face as a country. As I said before, when I travel and meet with my counterparts around the world there's a tremendous focus on unleashing investment and innovation and opportunity around these devices and we need at least equivalent focus here. So I think that's incredibly important. And as I mentioned before, you know, moving forward slowly isn't good enough.

Glenn mentioned at the beginning the point that other countries have national competitiveness policies and we don't. You know, we did produce our country's first National Broadband Plan in which a lot of ideas that we're talking about today were developed. I think doing, you know, more work together with the companies that are building our infrastructure, innovating, creating the content that's on the infrastructure is very important.

I'll mention one other thing. One of the things we did in the

Broadband Plan that I look forward to doing with others more broadly is some goal setting for the country. And so we set some goals in the Broadband Plan around speeds, around adoption, around a vision for where we want to be as a country in 2015 and 2020. And more of that, I agree with Glenn, would be helpful.

MR. WEST: So with that footnote on wisdom we will conclude this session. I want to thank Jeff Bewkes, Randall Stephenson, and Julius Genachowski for sharing your views with us. (Applause)