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It really is a pleasure to be here at an interesting time. We don't get to the West Coast enough, and I think that's quite unfortunate. I would have a program in which government policy leaders would come out here more regularly because this area and so many of the companies that you are involved with have been so instrumental as fuel for the engine of overall U.S. economic productivity over the last five years. And despite the current stresses in the environment, it continues to still be an economy second to none in some regards due to some of the activity in the sector.

I thought I would tell you a little bit about what the FCC is and it isn't. We have probably the widest, deepest portfolio of any government agency I know. When you consider that in our portfolio we include television, cable and radio; telephone, wired and wireless; satellite; aspects of the Internet; roles in the negotiation of copyright disputes; children's television; indecency. You name it, and we seem to do it if it involves electrons and increasingly photons. It's a remarkable portfolio to have, and it's really a remarkable opportunity to sit at the front seat of what has really been an amazing technical revolution.

What's more important than the depth of our portfolio and its breadth is really where it is historically compared to the historical role of the Commission. We are at a point where basically every aspect of that portfolio is in the midst of its most profound revolutionary change ever. You can pick any industry, and you can make this point:

- whether it be the television industry struggling to take advantage of digital television and migrate that product and service in perhaps one of the largest transformations for the consumer viewing experience that has occurred since color television;

- whether it be cable and its increased converged platform with the opportunity to provide broadband modem services, interactive video services, and telephony;

- whether it be the telephone system that increasingly finds itself trapped in a copper cage and must inevitably make a massive transformation to digital and fiber-optic architectures in order to be viable and competitive in the future;

- or whether it be satellite space which has gotten dirtier than it's ever been. The

Clark Belt at 28,000 feet is awfully congested these days with commercial service providers struggling for an opportunity to provide new services from space.

In the midst of this is the consumer: fascinated, enthralled, and confused about all of the promises that we are pledging to them, and all of the intricacies of the technology revolution, and trying to figure out what portion of their family budget they are really going to allocate to their own personal IT department run by their own personal 13-year-old, like mine is.

But it's really a remarkable time.

At the FCC, I have chosen to characterize this as the “great digital migration,” because I think that it is a massive transformation like very few we've seen historically in which the migration from the existing architecture --- existing analog technology --- is being driven by the imperatives of digitalization, IP protocols or IP-like protocols, and the increased importance of ubiquitous network architecture. And so that presents a pretty tall order: a pretty tall order for the market and a pretty tall order for government to figure out how to manage its role in the transformation.

Just as an aside, I'm a CEO, too. I have an agency of 2,000 people who have been doing things very similarly since 1934 when it was founded. Revolutionizing a regulatory agency is a bit of a challenge in and of itself, but it's something that we've been very, very committed to. We have done a number of very significant organizational reorganizations in order to align our departments more in keeping with the trends of the market to reflect the kinds of convergence that technology and the market are bringing. We have worked very aggressively to bring in the people, and kind of manage the processes, so our decisions are quicker and faster.

I grew up in a military household, as you may know, and in the Army we used to say, "Right or wrong, do something. You'll get killed just standing there.” It's an important imperative we try to increasingly bring to the Commission. We and the market can get killed just standing there. To try to get an agency to understand the importance of “once you have the right amount of information act on it, be decisive, be clear, and get decisions into the marketplace and let companies adapt and transform in accordance with them” is really an important cultural revolution at the Federal Communications Commission that we're working on.

More importantly, one of the deficiencies that I recognized immediately was that in a technology-driven migration, it would help to know a little bit about technology. For an agency that had hundreds and hundreds of attorneys and an engineering force that was aging rapidly -- at one point the vast majority would be eligible for retirement in four years -- I perceived this to be a crisis. We cannot sit on the other side of a table with companies as sophisticated as, say, AOL-Time Warner in the context of their merger and have Steve Case and Bill Gates teaching us technology as they urge the result that they wish. Increasingly we knew we had to develop the kind of expertise indigenous to the agency. We embarked on an excellence-in-engineering program last year. We have hired somewhere in the neighborhood of 40 engineers in a single

year, more than the FCC, I think, has hired in 20 years, and we created the development program and the laboratories necessary to give us the technological underpinning of making more responsible decisions in a technology-driven era.

So that's who we are.

Now, where on earth are we? Once again, which has become commonplace this year for me, I woke up to the news of more shakeup in the telecommunications market. I found myself on the phone with one leading CEO and two minutes later on the phone with a newly arriving one, as well as watching increased stresses in the bankruptcy proceeding. It's a tough world, and I always keep coming back to the metaphor of "The Perfect Storm," that book by Sebastian Junger about the "perfect storm" in which many small storms come together in just the right way to create an unbelievable disaster.

But it seems that we're experiencing a sense of that in the communications space, and it's interesting to focus on why.

To my mind, one of the first factors of the "perfect storm" really was the dot-com bust. Telecom companies are not software manufacturers, but they sure were being driven like they were. They are more like construction companies, digging, laying fiber, getting through local zoning boards, and when they are done, starting all over again because it's already time to invest new capital in the infrastructure. I remember Mark Andriessen once at a conference I was at said, "Oh, yeah, we love this business model. It's the URL, ubiquity now, revenue later." It sounded really cool back then, not so cool now.

But that shakeup has certainly shaken this industry more than any other because its products and services --- its stock in trade --- needs infrastructure, something that's extraordinarily capital intensive and by the way, forever --- not for a little while, where it's on top and then it settles back down, but forever. I think it's something that the markets didn't particularly appreciate. And neither did a lot of the companies themselves, it seems to me, nor did government policy, by the way. But it's led to a certain return to fundamentals, and the resulting liquidity crisis has proven to be quite a very serious threat to the industry at the moment.

But that's not the only wheel that's come in on this weather system. Secondly, I don't think people appreciate the degree to which September 11 has affected the context, the environment in which the market operates. I would like to give you a sense from Washington of what that means. You may not feel it out here as much as you might, but let me tell you something --- when you go to Washington, D.C., it is in war footing, genuinely so. You will see it on the street. You will see it in the way you have to get into a government building. You will see that in the minds of those running our country and those who are stewarding the government at the moment, this is the central focus of everything, bar none, which means in part less capacity for the focus on certain general economic issues, even though they are important and maintain a

certain central part of the portfolio.

I don't know that people feel to what degree the government's efforts are fully engaged in a war. But more importantly, it has also created a sense of government. Governments have business cycles, too, sort of political business cycles, I suppose. Big government, small government. Intervene; don't intervene. Trust the market; get on top of the market. That ebbs and flows too, and in many ways after 9/11, consumers screamed out for their government to protect them, to be in a position to protect them.

Third, if that weren't concerning enough, Enron dropped the other shoe, and the catastrophe of the sudden collapse of that company and the resulting accounting scandals in part sort of reshifted the balance, and a certain amount of the political ethos, towards oversight, scrutinization, skepticism about corporate representation, skepticism about corporate America generally. I don't think it will last, but I do think that we sort of slipped into a cycle of that. I remember seeing a Government Executive magazine with a big picture of Uncle Sam on the front of it that said, "We want you. Big government is back. How long will it last?"

So what a lot of politicians think they are hearing from their constituents is “you are supposed to protect us from the abuses of those out to physically harm us and the abuses of those who affect our economic well being,” and it makes for a more difficult political context in which to pursue pro-market policy.

Of course, the Enron scandal; I don't know what more one could say about it. The Andersen conviction this week has led to --- certainly, it seems to me --- a market that has a certain loss in confidence as well as, I think, the combined crisis in government throughout the sector. We've now seen Bernie Ebers go, we've seen Joe Nachio go, we've seen other major shakeups, and we've seen boards burned by these events, and, I think, probably all around America, which are being pushed to be much more aggressive and much more focused on the operations of those companies.

Then for the communications sector, which I think some people don't appreciate, there is this problem of legal instability in the court system. Just in telecom alone we are six, seven years into the 1996 experience, and we are still in the Supreme Court of the United States trying to resolve the basic fundamentals of the policy. A few years ago, in the Iowa Utilities case, we finally got an answer just on the separation of responsibilities between the state and federal government. That took three and a half years. The recent case that just issued in Verizon finally told us what the parameters of what we could do in pricing were. A recent decision by the D.C. Circuit has thrown another wrench in what elements are available in a network for competition. These are fundamental basics to the premise and the structure and the regime that Congress put into place, yet they remain somewhat unstable as a consequence of the litigation that continues to blow in the wake of the 1996 act.

By the way, what I'm more surprised about is not litigation but the degree to which

nobody anticipated it. I have rarely seen a 750,000-word document come out of the United States Congress with clarity, and I have rarely seen one that long and complex that isn't going to trigger years of uncertainty and litigation about the parameters of that statute. I was always sort of amazed by the degree to which people didn't have that expectation built into the way things would go.

So the “perfect storm”: although we’re all wiped out, is that the end of time? --- Do we give up on the experiment? I don't think so. I cast a very critical eye on some of the exaggerated, techno-euphoric expectations of this market. But I also get very upset by the irrational disinterest that goes on as well.

At the end of the day when I struggle with it, I still think there is a very strong case for optimism. Where does it come from?

First, I think we should be reminded it comes from the fact that the digital technology revolution is genuine. It does rank with the agricultural and industrial revolutions that preceded it. It is not a false phenomenon. And what's fascinating about a technology-driven environment, a technology-driven revolution, is that the physics of the microprocessor don't care all that much about your current revenue projections. Whether we like it or not, a year from now, I still believe that the microprocessor will have doubled or tripled in speed again and halved in cost. As sure as I'm sitting here, next year again there will be major breakthroughs in the use of wireless spectrum for the delivery of a whole host of communication.

In the year 2001, in which we were all crying in our beer, we watched the emergence of Wi-Fi networks explode all over the country that have become a phenomenal pull on broadband demand. Every neighbor I know is rushing to get one, and concomitantly buying DSL or cable modem service to hook it up so they can show it off. There are a whole lot of neighbors on their back decks with their laptops.

We watch and witness a technology like ultra wideband which, though continuing to battle over its parameters, has been pushed out into the marketplace and which is a phenomenal breakthrough in the use of electromagnetic spectrum. We continue to see uses at ever higher ranges of frequency, and we continue to see phenomenal breakthroughs in photonics. I'm fond of being glib in saying “think about that for a second.” If Albert Einstein was right, we are not far from witnessing the end of communications history. It seems to me that the moment we really do network the world or the economy in light, you've reached the end of time, at some level, because if nothing can go faster than the speed of light, we're there. It's not that far away. It's a phenomenal development, and in a year from now that will be increasingly more cost effective.

So it seems to me that I think technology is going to provide new value, new services, new opportunities, and if history is any guide, somebody is going to harness and make money on them. I don't know why anybody believes differently. The important thing is it may not be the players you're looking at now. But as far as general economic theory goes, who cares? We care

that somebody does, and the value comes back into the economy, and I don't see any scenario by which ultimately that does not happen.

So I think the technology revolution is real. I also think that if you keep watching consumers, continuing demand for a networked economy is very, very real. So maybe it isn't 300 percent growth. But compare the growth of the Internet and the growth of those technologies in the time frame we're talking about to any other major technological innovation in the history of the world and tell me what we're sad about. Color television; it took 35 or 40 years to reach anywhere near 85 percent penetration. You name it -- CD players, VCRs. This thing is outstripping virtually every introduction of consumer mass market technology of any that preceded it.

Consumers are struggling to find the value for the change in their lives, but they aren't stopping the search for finding it, and I think that is also a matter of time. And I have another theory about that. We've witnessed everybody looking for the killer app as if it's all about e-commerce, it's all about some particular application, and that will be it, and everybody will take to it. If revolutions are real, and I submit this one is, there is something more profound and fundamental that underlies it. And I think put very simply the technology is destroying the barriers of time and distance in the acquiring of information. That's the killer app., simply put.

There will be lots of versions of how you do that. But I don't think that most of us appreciate the degree to which basic information underlies the workings of basically every human activity. You've bought a car. What are you negotiating over? You're not really negotiating over the price. You're negotiating to get the information that that guy has and you don't have. The length of the negotiation was designed to produce the information about the true cost of the vehicle, and those who are tenacious and would do it got a good deal. Look how quickly even that dynamic has changed. I bought a car not that long ago. You walk in, and as soon as they see you coming, "All right. All right. I know you know. Here's the price." That transaction has decreased dramatically.

And all of you have this neighbor -- right? -- the guy who is willing to be a jerk, pick up the phone, hustle, go five miles to get five dollars off, the guy who won't take the price, goes to the manager and says, "I know you really have one in the back room." These guys always won. The rest of us who are shy, timid, tired, or cheap never won. We paid full price and went home and liked it. Information is the key to that transaction.

Increasingly, in a knowledge and service economy --- when the vast majority of Americans make money and take care of their well being by trafficking in knowledge and ideas --- how can you underappreciate the importance of destroying barriers of time and distance to information? That's the revolutionary aspect that I think is there.

The other thing that I think we see that's cause for optimism --- convergence is the most overused word next to "e" everything. Convergence is something I'd just as soon not hear

anymore --- but it's quite genuine. You know, I've been at the Commission five years, and sometimes I take a breath and realize “look how many new platforms are delivering the full suite of communications services.” People say, "Well, it's been a terrible five years." I say, you know what? Five years ago, the average American didn't have a cell phone. Now they are starting to have multiple cell phones. The average American didn't have e-mail. The average American didn't have instant messaging. The average American didn't have a fax machine. The average American didn't have cable interactive services. The average American has all of these things today mostly because the technology revolution in part is really empowering any kind of platform to be a potential vehicle for the delivery of goods and services. And so increasingly, yes, it's a hyper competitive environment. It's a tricky one to figure out how to make money in and get on top of. But ultimately that competition is going to produce value, I think.

And like in all collapses shakeouts can result in good things. There is a lot that needed to be shaken out in this euphoric market environment, and some people may have to pay the price. And you know what? They are supposed to. That's the genius of Adam Smith's model. And when you fail to do that, and you fail to do it correctly, you are punished and punished severely at times. That hurts some companies, but that can be very beneficial to the economy and to consumers. And I genuinely believe that when this shakeout is over and matures and settles again for some brief period, we will have a healthier sector, one more committed to the realistic fundamentals and expectations that are genuine, and we'll be able to make not as revolutionary progress and growth as we've seen, but still by historical standards, extraordinary growth, extraordinary increases in productivity and global competitiveness. So the market shakeout to me is good. It calls for optimism.

And then finally -- this is the philosopher in me -- it will recalibrate expectations. You all know better than me, but I can't figure out the market. All I know is it looks like a really big crowd that runs to the left and runs to the right and runs up the stairs and runs back down the stairs. Now, I know you guys have a lot of numbers that tell me something else. But at the end of the day expectation is I'm going to have someone teach me one day why missing something by a penny in a multibillion dollar company is cause for a five dollar drop in value. But the point is so much of our sense of whether we're doing well comes from what our expectations are in the first place, and when they are exaggerated, you're never going to meet them.

This segment of the economy has been radically exaggerated for five years. It was exaggerated by politicians the day the act was signed with a digital pen to great hoopla. It has been exaggerated by the market. It has been exaggerated by CEOs and entrepreneurs. I think that lowering and recalibrating expectations is going to be a very important part of government making better policy and business men and women making better business models.

So what on earth is government supposed to do about this? I don't really know, but there are two things that are very clear to me to be important, and the general focus of government policy, I think, has to shift a bit.

One, I think that it has to be committed to finding greater clarity and certainty in the legal regime so that companies and those who value them can have a little better sense of what the legal environment for those business models is and is likely to be, understanding that government can never promise you the outcome. But it needs to be more definitive in its decisions, more clear in its direction, and, I think, most importantly, it has to be an institution that is able to very rapidly adapt to change.

We have to become an institution that --- when a year ago nobody ever heard of Wi-Fi networks and now it's the rage --- how does it quickly adapt its thinking about spectrum management policies to, as we would say in the Army, bust through the beachhead? We try to build an organization that sees opportunity dynamically and figures out how to very quickly adapt and take advantage of it.

The second thing I think we have to do is focus on innovation and investment. Now, this sounds really obvious until you really are a student of regulatory agencies and understand they rarely do anything of the sort. They have a tendency to be very focused on the historical concerns of price, price to the consumer, quality of service to the consumer in natural monopolies and monopoly-tending industries, which are almost all network industries, and some big banner of consumer protection, which can mean something very good and can mean something very, very bad --- something that we use to justify an extraordinary amount of government intervention in the nature of the business model in the name of protecting consumers. Protecting consumers is important, but sometimes it's a guise for industrial policy.

But this is what an average regulator did. We figured out rates of return and fair prices and imposed them on companies and started over the next day. That's an important part of government, still.

But what's more important in a technology-driven revolution is what are policies that provide the right climate and culture for innovation. Because you know what? Right now nobody does know what the killer app is. Nobody does know what the killer business model is. What you really should be pursuing is an environment that lets people try lots and lots of things in search of it, a foment of experimentation and opportunity that isn't prematurely frustrated by early and premature government intervention. There’s a lot of theory about the right way to structure regulatory decisions to be conducive to innovation, and also investment. You would be surprised that regulatory agencies have spent very little time understanding the degree to which their decisions affect the flow of capital. The reason is quite simple, actually, because the markets that we oversee have largely been monopolies for the better part of their history. There was no competitive dynamic. When Ma Bell wanted to do something, we just let them slop the money from one bucket to the other and called it a day. There was no competitive response to inefficiencies like that. It was put in the rate base, and we accounted for it, and we got it back.

But when you introduce competition in a more dynamic market I think the regulator has to be much more sensitive to the degree to which its decisions can affect flows of capital that

may not be able to be recovered by the business models you're incenting or promoting. Easier said than done, but I think an important point.

And I think, this innovation thing about pushing opportunity -- one of the things I find as a regulator is the pattern is always the same. When an industry or particular company is an innovator or disrupter, they love free markets a lot because it means giving them a chance until they get good and start to get a little bigger, and then all of a sudden they do what every other one did, which is want to pull up the ladder. "It was okay for us, but I don't want these guys to have a chance."

I think that one of our most sacred responsibilities is to never take the heat off the neck of companies in innovation, not let large, entrenched interests, no matter what value they bring to the economy, convince the government that we will all be better off if you don't let new competitors in the market. They'll say, "We'll all be better off if you make sure that we can solidify this part of the market for ourselves," or "Don't put the spectrum out there for these new and innovative units because they might compete with us." People do make these arguments. I think it's important that we resist them.

Finally, let me say a word about what I think is the most important central focus of government policy, or should be today, and I genuinely believe it's broadband. I call it "uncorking the network." A lot of the struggles in the telecom sector are all because they are on the outskirts of this funnel, and they all get stuck in the same places. We don't have a mass-market network yet. We don't have an opportunity for a content provider or a network infrastructure provider to truly distribute those innovations to the mass market. When I mean mass market, I mean ubiquity. I mean residential homes for the majority of Americans in this country.

And so uncorking the network, dedicating a lot of energy to the last-mile problem, I think, is an important focus of government policy.

I hear a lot of people say, "I don't get this. Why is it so important? The market is doing just fine. You don't have to worry about it." Just a quick few reasons: economic recovery and long-term growth. We have seen the benefits of the productivity stimulus of high-tech-driven opportunity, and I think that the overall economic recovery and long-term growth of this country is heavily dependent on continuing to have those virtuous cycles spin further and further along. We've heard a lot about how this economic recession was caused by a lack of capital spending. To reinvigorate capital spending means greater investment in new architectures and in equipment suppliers who are building that equipment for those new infrastructures. Broadband is the single biggest thing that will provide those opportunities on the horizon that we are aware of.

Global competitiveness has always been important to this country in the standard of living it portends for its citizens, but yet we continue to struggle on a global competitiveness level with many countries, you know, Korea, Canada, Sweden, and others. I wouldn't necessarily

adopt their models, but I would adopt their challenge to this country.

And consumer welfare, which I've mentioned. Broadband is a value to anything that can be networked, if you think about it. Take education. My children and yours are growing up digital. There are some very interesting consequences of that. I've already seen it in their behavior, the way they approach problems, the way they think about problems, the way they think about solving those problems. And to the degree to which our children can be part of the networked economy, you have increased their educational potential exponentially.

Health care, telemedicine. At the FCC we see lots of examples of amazing breakthroughs in medical science where somebody in a rural part of the country gets access to MRA technology halfway across the country. A surgeon sitting in New York making decisions about someone's health in Montana. That is an important part.

Homeland security. The biggest buzz in Washington in the last few weeks is, oh, my gosh, the CIA and the FBI aren't talking to each other. Well, they weren't, but the solution for being able to pick up those dots that are constantly emanating all over the country and the world that might when connected with other dots paint a picture for you about a threat is heavily dependent on advances in computer processing and information technology.

I was proud that President Bush last week recognized those benefits in a speech to the High Tech Forum, which demonstrates the kind of leadership I think we need. This has to be at the highest level, at least a commitment to the objective, and I think we got that last week.

So why do you need government leadership? I'm a pro-market guy. What do you need me for at all? One of the reasons is nobody owns the broadband problem. This is why there is no clear national policy yet because nobody is clear who owns all of the pieces. I'm fond of saying, you remember the snake in the Revolutionary War that's cut up into little pieces, and it's sort of “join or die.” That's the way I think broadband is. There's all these little pieces across the economy and across the infrastructure, but they are not in any single repository, so everyone has to be working on that problem to connect it all up. Well, that’s not going to realize the potential.

Clarifying rules of the road, which I've talked about. And understanding that when you're imposing regulations, you are imposing costs with a set capital flow. And so being very vigilant about the costs you impose for your regulatory choices, and what it's impact on investment will be, is something only the government can do. The FCC has made it the central communication policy objective, following many of the principles I outlined, and it's deeply committed to doing what it can to make that environment a better place.

Five years ago, there were a lot of things people told me that were physically impossible, that wouldn't come to market. You would never see satellite-delivered broadband. You would never see local wireless networks. I had businesses tell me this. It's remarkable to me that all of these things are in my home today, and somebody built them, produced them, sold them, and

convinced me to buy them. And I think those opportunities are going to continue to be in this market for the person who has the keen eye, the commitment, and is willing to take the risks that American entrepreneurs are infamous for, second to none in the world. And as long as we have them, we have a future, and we have hope.

Thank you.