

**Remarks of
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I. Introduction

Good afternoon, it is a pleasure to be with you this afternoon to discuss the information technology revolution, which is driving what I call the great digital broadband migration, and the Federal Communication's Commission role in it. First, however, I want to take a moment to wish the United States Chamber of Commerce a very Happy Birthday.

For those of you that do not know, the U.S. Chamber of Commerce, celebrated its 90th birthday last week. Born 22 years before the Federal Communications Commission, the U.S. Chamber of Commerce has witnessed many of the most remarkable and life changing business events in our young Nation's history.

Consider it for a moment, born at the heels of the age of electricity and at the dawn of the great manufacturing age, the Chamber saw Ford's introduction of the assembly line in 1913, ushering in the mass production of goods to serve consumer demands. It witnessed the opening of the Panama Canal in 1914 and the creation of the interstate highway system in 1956, opening up the conduits of commerce (more broadband if you will).

More germane to the FCC, the Chamber witnessed the invention of the television, and the first commercial television broadcast; the commercialization of the radio; the invention of the transistor (1947), the integrated silicon chip (1958), and the personal desktop computer (1977). It is today seeing the confluence of formally distinct computing and communications technologies that have spawned a wave of innovation—the most notable being the Internet.

And finally, the U.S. Chamber of Commerce got the chance to witness the ultimate in speculative investing that created a bubble that eventually (and inevitably) burst, teaching countless investors and commentators a valuable lesson not soon forgotten. Of course, I speak of the radio craze of 1928-1929. RCA saw its stock rise from \$85 a share to well over \$500, and then fall back down again in a fraction of time. OK, maybe we did forget the lessons of our past.

So in its 90 years, the U.S. Chamber of Commerce has seen technology and innovation continuously reshape and reinvent how our country conducts business. Today, of course, is no different, as we all find ourselves in the middle of the revolution of our day—the Information Age.

II. The Real Revolution

As suggested by the “irrational exuberance” that surrounded both the Internet/Dot-Com phenomenon of the last several years, disruptive technologies often bring with them unrealistic and therefore unrealized expectations. The failure of these technologies to live up to their lofty expectations inevitably leads many to openly question whether the technology was truly life changing or just a novelty. Couple this skepticism with a generally suffering economy, dismal capital markets, declining profits and plummeting stock prices and the over-inflated optimism turns to pessimism in the blink of an eye.

I submit, however, that the revolution is alive. This is fact, not just because business cycles will once again turn in our favor (they will) and not because history tells us not to bet against technological revolutions (it does). I am completely confident about the inevitability of these changes and their import because relentless advances in technology are driving them. Next year the clock speed of a chip will double. . . again. Optical technologies will become more advanced and cheaper. Wireless will be more prevalent. Someone will harness these advances and profit from them and consumers will taste the fruits of this ingenuity.

I also believe that one’s faith is restored if one understands the essence of this revolution and its true potential for society. In the great “com” hype—dot com and telecom alike, I fear that we lost sight of the real meaning of the present revolution. We have focused on “killer apps” and e-commerce—on what new technology would allow us to sell. This neon for-sale sign has dimmed in the minds of many—investors have pulled back dramatically and capital fuel for the rocket revolution is in short supply. Policymakers and advocates alike wonder if it was all chimerical—destined for the book of folly like the great Dutch tulip bulb speculation of the 1600s.

The true power of any real revolution, however, is not felt by the small momentary tremors on the surface. For a change to be worthy of being called revolutionary, its impact cannot be measured in modest product innovations or new goods and services spawned. Its impact is deeper, more profound, more lasting.

I believe that this is a genuine revolution that will have enormous consequences for our world and the manner in which business is conducted and how economies flourish. Those nations that harness its power and the opportunities it presents will stand tall as great powers and those that do not will shrink in every aspect of civilization—commerce, politics, philosophy, art, education, and war. If we hope to take our place on the medal podium of the Information Age, as we did in the Agricultural and Industrial Ages, we must make every effort to embrace and advance the tools necessary to build information prowess among our citizens and our institutions.

What lies at the center of this torrent of change? I believe the essential premise of this ascendant age is, simply put: That technology breakthroughs have dramatically lowered the barriers to acquiring information. This does not sound remarkable, perhaps, as a revolutionary bugle call, until you think about how intrinsic access to (and barriers to) information is to every facet of human activity. At some level, most interactions among people represent transactions of a sort in which information is integral to facilitating the transaction, or setting the value of the exchange. Buyer and sellers in a capital economy barter to determine the price and terms of goods and services. In a democracy citizens seek the information they need to choose their

representatives and those vying for that privilege try to convey information that will win a vote. A teacher's trade is knowledge—imparting it to her students. Even a courtship for marriage is a dance to learn enough to be sure you know what you are getting into. [I bet some of you wish you had the internet before you chose to propose.]

You name it, and information plays a vital role in making a decision, making a commitment, taking a risk, or agreeing to part with something of value. Often in these transactions the information one has will determine if the transaction is fair, or whether someone gets taken—the taker having superior knowledge about the deal.

A quick look at the trends of our economy illustrates the growing importance of information to our overall economic well-being. In the year 2000 services accounted for nearly 22% of GDP compared to manufacturing, which accounted for 16%. While manufacturing remains important, the vast majority of American workers are employed in the service and information sectors. There is an intensifying premium on knowledge. Trading in ideas, intellectual capital, and information under girds huge segments of the economy. Stock traders, software developers, research analysts, business managers, insurance salesman, journalists—the list goes on and on of those who's stock in trade is information and ideas. Facilitating lower cost access to more information will pump more energy into our economy.

Manufacturing, too, however has been and will continue to be revolutionized by access to information. Alan Greenspan has correctly noted that “Most business decision making has been hampered by dated information about customer preferences in markets and the flows of materials through a company's production system.” Inventory management has been instrumental to business success and has long served as a critical indicator of overall macroeconomic health. Information access and technology has revolutionized this component of economic life.

Alan Murray in his book The Wealth of Choices illustrates this point by describing a visit to a lumber mill—a low-tech industry if there ever was one, he says. The mill used lasers to analyze each log before it was milled and then used a computer program to decide instantly how to cut each log on the basis of real-time information about the current market price for each cut. If there is a shortage of 4x4s, then it cuts more. Market signals were immediately transferred to production. The implications of information technology should be clearly evident for would-be great powers.

Consumers will win as well. When consumers act in the marketplace (whether of goods or ideas) they are often at a disadvantage with sellers, who have access to superior information. For example, a car dealer has long had the upper hand because he knew the true cost of the car. He knew how much margin was in the price. He knew about any factory incentives. A substantial amount of the vehicles' price represented the premium on information in the hands of the seller. Only tiresome, long drawn out negotiations could pierce the veil, and rarely did anyone really get a good deal.

Today, a consumer can use information tools to find the key factoids of information that form the basis of the car's true value. They can further use information tools to force dealers to compete for their business—just by faxing to multiple dealers the price you are willing to pay. This makes consumers more powerful buyers, thus increasing competitiveness in the economy and forcing sellers to compete for consumers on something other than access to better

information. The same can be said for banking services, broker services, grocery prices, insurance policies, you name it.

Information technology also has a democratizing affect for consumers. People with enough tenacity always could get a good deal. You know who I am talking about. The guy who will get on the phone and badger—call enough stores, demand a lower price, ask to see the manager, travel 40 miles to save \$50. You know the type—the neighbor who brags of his conquests and makes you feel like a schmuck. The rest of us—those too busy, too timid, or too poor to take on the seller paid full price and liked it! The low cost of information technology, however, can change this dynamic for most people. With a low cost computer and an Internet connection every one has a chance to “get the skinny,” the “real deal,” to see the wizard behind the curtain.

The key and unrelenting fact of this revolution is that it slashes the impediments of time and distance in acquiring and sharing information.

My point is this. There are incalculable benefits to building the infrastructure and harnessing the dramatic advances of technology to provide the tools for getting at the information. All the cool things that technology is delivering are fun and even useful. But the real power and potential lies not in the gadget, but in its ability to close the time and distance of acquiring any information one might need. In other words, true value to the consumer and the economy rests not in having a palm pilot, but with a palm pilot that can connect you quickly to information you need, wherever it resides.

A national broadband policy should first recognize that the development and deployment of affordable information access devices holds breathtaking promise for the strength of a nation. Its importance should not be underestimated. One’s commitment to the path of change should not ebb and flow with the exaggerated hopes and exaggerated fears of Wall Street. Revolutions take time and their benefits are more important and enduring than the latest stock price or failure to meet earnings expectations. Finally, revolutionary fire needs air. One should let the flames dance for a while to see how they will change the landscape before jumping to smother them out of fear that they will destroy all that we have built before. Creative destruction is good.

III. The FCC Response: Leading Change

At the Federal Communications Commission, we can see the revolutionary impact in every industry in our purview. Whether it is satellite radio, digital television, cable broadband, DSL, WiFi or Third Generation wireless, the impact of the Age is being deeply felt. This change demands that the Commission itself become a revolutionary and lead change (a revolutionary act for a regulatory agency). Standing still is not a wise course and not an option.

We have clearly set out the principles that guide our actions in the broadband space:

First, we will promote the ubiquitous availability of broadband-capable infrastructure to all Americans. This is Congress’s vision and it is universally recognized that the promise and potentials of broadband are ones that every American (and world) citizen should enjoy. But a word of caution as we strive to achieve this worthy goal. If history is any guide, revolutions and infrastructure build-outs take time. It took the United States four decades (mid 1950s-1990s) to

build the interstate highway system and over 50 years (1860-mid 1910s) to go from 30,000 miles of railroad track to over 250,000 miles. Therefore, although we live in a world of instant everything, we must show patience as we move forward.

Second, the Commission will conceptualize broadband broadly to include any platform that is capable of fusing communications power with computing power to provide high-bandwidth intensive content to meet the broad needs and demands of consumers. That is, we recognize that broadband is not merely cable modem service or DSL. We work to empower any technology that will help close the gap of time and distance in acquiring information.

Third, at this stage in the development, any broadband regulatory environment must serve to promote *investment* and *innovation*. Substantial risk investment is needed to either upgrade legacy networks or to develop new networks to support broadband capabilities and applications. Broadband-capable networks must, whether through market forces or government mandate, reserve a proper climate for innovation. For in the words of legendary scientist John Jacob Abel: “Greater even than the greatest discovery is to keep open the way to future discovery.”

Fourth, sound regulatory policy should, where appropriate, harmonize regulatory rights and obligations that are attached to the provision of similarly-situated services across different technological platform. The convergence of industries, where advanced networks allow entities in traditionally distinct market segments to enter into each other’s markets and into new similar markets, demands that we rationalize our regulatory regime to address these changes.

IV. Taking Decisive Action

Having set out our guiding principles, my colleagues and I have begun to act. In the last six months we have initiated several major broadband proceeding designed to clarify the regulatory environment for new services and lower the costs and risks associated with deployment of new infrastructure. Clearer, more enlightened rules are vital to promote the infrastructure and devices that will bring the power of information to the home of every American.

The Commission has also recognized that it must look in at itself and revolutionize the way that we operate in order to respond effectively to rapid changes and convergence. We have realigned our internal structure along more functional lines to better address convergence. Additionally, we have set up internal working groups to address some of the more profound changes happening in our regulated industries, such as the transition to digital television and IP Telephony. We have established core programs to shore up our technical and economic expertise, for sound policy judgments can only be realized when one understands both the technology and economic conditions under which that technology is deployed.

V. What Can You Do for Your Country

The business community cannot afford to sit on the sidelines as the debate rages over the proper policy and regulatory structure for the Information Age. The consequences are too great for every business in the world. It will change the nature of your markets, your employees, the business process, and your customers—in effect your profits.

Perhaps more seriously, the dangers of not engaging could be more than missed opportunity, but may actually wound our economic primacy in the world.

I ask that you simply join us and participate in this broadband policy debate. This Summit is an outstanding start. We believe that our actions have helped the Nation engage in a healthy national debate on the technological revolution of our time. Where all voices speak and are heard is the starting point of making great policy that will serve the public interest.

And finally, continue to do what American businesses and entrepreneurs have always done—innovate, vigorously compete, and meet consumer demand. Much of the revolution is in your hands, do your part and we will do ours and all Americans stand to benefit.

I thank you for your time.