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Associate Director  
OSTP**

**Speech to CTIA  
Wall Street Analyst Roundtable: "Wall Street Meets Wireless"  
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I am pleased to have this opportunity to discuss with you the Administration's views on an important industry at an important time in its development. The participation in this CTIA forum of representatives from Wall Street, business and government testifies to the powerful role of wireless technology in our economy – indeed in our way of life.

Briefly, the White House Office of Science and Technology Policy coordinates the Federal Government's science and technology R&D enterprise for the President. The head of our office, Dr John Marburger is the science advisor to the President. I serve as his deputy for technology. My colleague Dr. Kathy Olsen oversees the science department. In addition, I also am senior director for Technology and Telecommunications at the National Economic Council now headed by Al Hubbard.

Wireless communications are critical for commercial purposes and increasingly becoming integral to American's everyday lives. A recent article from the WSJ reported that cell phones are fast becoming like Swiss army knives:

“People typically carry them wherever they go...As a result, cell phones have become product on which all sorts of industries want to attach their wares and services. Cell phones have become lifestyle devices, rather than just things you carry on your hip to make calls.”

The arrival of EVDO technology and the expected roll out of third generation networks and phones will only further expand the capabilities for U.S. consumers.

Wireless technologies are also indispensable for first responders – police, fire, and medical workers – to cope effectively with natural disasters or terrorist attacks, and essential to the complex missions of modern national security.

It is of interest to note that wireless technology has from its inception been closely entwined with developments in basic science. It has depended strongly upon its underlying science for continued growth and vitality.

Throughout the 19<sup>th</sup> century electrical discovery and electrical applications rushed, hand in hand, at breakneck speed. Practical wireless communications technology began with Marconi's experiments in 1895, just a few years after electromagnetic waves had been observed by a scientist in a series of experiments in Germany.

Britain's Marconi and his successors were engineer-entrepreneurs who started companies based on technology patents. For example, Marconi's spawned RCA through one of its executives, David Sarnoff.

Who could have guessed that Marconi's crude apparatus would lead to the exploitation of so much of the electromagnetic spectrum through the technologies and wireless voice and data communications systems used by businesses, consumers and government today?

The United States government takes these lessons of history very seriously. This Administration understands that research is the engine that drives technology, and that technology in turn drives capabilities throughout the economy.

This Administration also understands that long lead time, high risk basic research is largely the responsibility of government and that shorter term research and development is largely the task of the private sector. U.S. philosophy rests on the belief that entrepreneurs – like Morse, and Bell, and Edison, and Marconi – are the ultimate source of economic strength.

Our commitment to science and technological discovery is reflected in the priorities of the President's 2006 Budget.

- Total R&D investment is \$132.3 billion, a 45% increase compared to 2001's \$91.3 billion.
- President Bush's 2006 Budget commits 13.6 percent of total discretionary outlays to R&D - the highest level in 37 years.
- Government R&D funding as a share of GDP is also at its highest percentage in over 10 years at 1.00% in FY 2005.
- Federal funding for basic research is \$26.6 billion in 2006, compared to \$21.3 billion in 2001. That's a 26% increase.
- Funding for NSF is increased 2.4 percent (\$132 million) and has increased by more than 26% since 2001 to \$5.6 billion.

Some of these funds are expended through more than twenty Federal agencies that work together under the aegis of OSTP to develop coordinated programs that address society's needs and seize opportunities for new discoveries.

An important example of interagency cooperation is the multi-agency Networking and Information technology R&D program (NITRD), a national S&T priority.

Under the President's Budget, during the five years of this Administration, the cumulative investment in Networking and Information Technology R&D goes over the \$10 billion dollar mark.

This effort covers R&D activities in 12 agencies from large scale broadband networking, to computing, to software, to wireless technologies. At least five agencies are currently funding specific research in the wireless field.

For example, NIST is performing research in the area of seamless mobility to develop a network incorporating an IP core utilizing wireless technology to secure access to media and to support mobility and roaming.

From NITRD to the \$1 billion the Federal Government is spending annually on nanotechnology research, basic research will ultimately make communications technologies faster, smaller, and more reliable. All of which will improve the future for wireless communications.

Now let me speak about our economic policies in this area to support wireless technologies, like those provided by members of CTIA.

The Administration recognizes the importance of the telecom sector to our economy. In 2003, total communications services and equipment accounted for more than \$335 billion of U.S. GDP.

Wireless is leading the way. In one year, the industry grew from \$87 billion in 2003 to \$102 billion in 2004 -- a striking contrast to the wireline sector whose revenues declined over this same period.

That is one of the reasons the Administration has placed a premium on spectrum policy.

Working in partnership with the Federal Communications Commission (FCC), the Administration has worked to increase the amount of radio spectrum available for advanced wireless services.

- The Administration has identified 90 MHz of spectrum that will be auctioned for next generation wireless services in June 2006.
- The Administration is working with industry and government spectrum users to resolve final technical issues to allow for sharing in the 5GHz band -- 255 MHz has been identified for wireless broadband applications such as Wi Fi and Wi Max.
- The Administration has also supported ultrawideband devices.
- To further accelerate progress in the area, the President signed an Executive Memorandum in 2003 launching an initiative to create a Spectrum Policy for the 21st Century.
- As part of this initiative, in June 2004, the Secretary of the Department of Commerce (DOC) provided a set of recommendations to the President on how to reform spectrum management. In November 2004, the President directed agencies to implement the recommendation. This process is now underway. The Administration believes these reforms will foster economic growth and help provide more flexible and efficient use of spectrum.
- For example, one of the recommendations calls for a joint test bed for sharing of 20 MHz of spectrum between the government and private sector. In addition, the private sector will gain improved coordination in shared bands that will streamline the current manual assignment process -- this will be much like the automated system adopted by NTIA in the 70, 80, 90 GHz bands. Industry also will have a platform for their issues to be addressed through the Commerce Spectrum Advisory Committee.
- Last year, the President also signed into law a bill that will create the Spectrum Relocation Fund the fund will streamline the process to reimburse government users, facilitate their

relocation, and provide greater certainty to auction bidder and incumbents. The statute will not only give industry greater certainty but will also provide them insight into the specific characteristics of government bands (e.g, frequency and location) that their third generation (3G ) systems will operate in. As long as there is no interference, companies will also have the chance to deploy their systems earlier based on information about government activity in the bands.

The Administration's policies in this area are also tied to the President's vision for broadband deployment.

Broadband access is driving demand for new technologies and applications, and consumers are benefiting from the new products; such as VoIP, advanced wireless services, Wi Fi, and Wi Max, and broadband over power lines (BPL). Broadband deployment is a top priority for the Bush Administration and is critical to America's future as the world's economic leader by increasing our productivity and improving American's quality of life through economic growth, job creation, tele-medicine, distance learning, and telework.

For that reason, President Bush set a bold vision establishing a national goal of universal, affordable broadband access for Americans by 2007. Between December 2000 and June 2004, broadband adoption in the U.S. has increased by four and a half fold from 7.1 million subscribers to 32.5 million. Wireless broadband is integral to the President's 2007 goal. It provides both portability, mobility, and in many instances cheaper choices than new wired infrastructures such as fiber -- potentially creating a solution for harder to serve rural areas.

In support of this goal, the President has enacted economic incentives and created a regulatory environment to encourage innovation and investment in new broadband technologies. These include the following:

- Technical standards were developed by DOC which paved the way for the FCC to permit the widespread deployment of broadband over power lines (BPL).
- Enactment of two extensions of the Internet tax moratorium, the second of which explicitly includes broadband access technologies;
- Support for the FCC's decision to free fiber to the home and residential neighborhoods from regulatory unbundling requirements.
- Issuing an Executive Memorandum to streamline the process by which broadband providers can obtain Federal rights-of-way.

In conclusion, we believe the foundations have been laid for continued growth of the U.S. wireless industry. Last year, an article from The Economist reported that globally "over a half billion mobile phones are sold every year." We now have over 180 million wireless subscribers in the U.S. alone and their use of the technology will only grow with time.

The Administration remains committed to working with you and your colleagues to reap the rewards of past investment in the science and engineering as well as to establishing an economic and regulatory climate in which commercial wireless technologies will continue to flourish.

We believe that new technologies and scientific advancements are going to be an integral part of the continued growth in our nation's productivity and technological prowess. The Administration will continue to work to create the environment in which the private sector can roll out new technologies and services.

It is an exciting future, and we thank the members of CTIA for bringing it to us.