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ABSTRACT

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INNOVATION

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- *Innovation encompasses research, invention, integration, product development and marketing.*
- *Innovation drives productivity and economic growth, but it works differently in different sectors and under different market conditions.*
- *Information technology (IT) plays a critical role in enabling innovation across all sectors of the economy. IT not only enables change in how other technologies are investigated, understood, developed and applied, it enables fundamental change in human activity – in business processes, commerce, social interaction, education and entertainment.*

Background: The process of innovation spans research, invention, integration, product development, and marketing. It is not limited to products but includes manufacturing processes, business processes, new forms of marketing, and organizational change.

Innovation is context-dependent; it works very differently in IT and services than in chemicals and pharmaceuticals. These differences have become conspicuous in the debate over patent reform. Because of the scope of innovative activity and enterprise in IT and its impact across the economy, it is important that policymakers understand the economic forces at work in IT, digital information, and IT-dependent services. For example, IT innovation is distinguished by the roles played by:

- **Standards:** Standards are strategically important for defining new areas of technology, developing new markets, and ensuring interoperability.
- **Patents:** Patent practice in IT is dominated by the acquisition and non-exclusive licensing of patents in volume. The fact that IT products are complex and may be infringed by many patented functions makes IT uniquely vulnerable to patent trolls.
- **Infrastructure:** Infrastructure provides global access to products and services and minimizes barriers to innovation to participating in business and commerce.

U.S. Innovation Policy: Innovation policy in the U.S. has historically been focused on funding research and education. Thus, the America COMPETES Act of 2007 emphasized increased investment in research in the physical sciences and education in science, technology, engineering and math (STEM). However, the authorizations contained in the Act remained largely unfunded until the Obama Administration's stimulus package, the American Recovery and Reinvestment Act of 2009 (ARRA).

Other programs and laws associated with innovation policy include:

- The Small Business Innovation Research (SBIR) Act, which reserves a percentage of the budget of federal research agencies for small businesses.
- The Research and Experimentation Tax Credit (sometimes inaccurately referred to as the “R&D tax credit”).
- The Technology Innovation Program, a leveraged investment program for supporting “high-risk, high-reward research in areas of critical national need.” The Program was created by the America COMPETES Act as a successor to the politically controversial Advanced Technology Program).
- Patent Law, patents are the original core of U.S. innovation policy, dating back to before the Constitution.
- The Bayh-Dole Act of 1980, a government-wide law on patents resulting from federally funded university research, designed to encourage commercialization by enabling universities to patent. The Stevenson-Wydler Act of 1980 similarly encouraged commercialization of technology developed by the national labs.

The Obama Administration released *A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs* on September 24, 2009. The Strategy encompasses a wide range of innovation policies and programs. Some of the recommendations concern background conditions, such as physical infrastructure and proper functioning of financial markets, whereas others are directed to innovation, such as STEM education, research funding (including funding for advanced IT), and the Research and Experimentation Tax Credit. A number of the programs listed in the Strategy have already been funded under the stimulus legislation.

New elements of the Administration’s Strategy include:

- Support for incubators and clusters of innovation: While states have often funded these in the past, this would be a first for the federal government. The program would be managed or coordinated by the Economic Development Administration. Although not funded under ARRA, funding is proposed in the FY 2011 Budget.
- The Open Government Initiative: In part a political reform, this initiative seeks to capitalize on the power of information technology, especially Web 2.0 technologies, as well as the economic value of government data.

At present it is not clear how the Administration’s ambitious agenda will be coordinated or supported across the federal government. The America COMPETES Act is up for reauthorization this year, but so far the Administration has been content to let the House Subcommittee on Technology and Innovation take the lead.

Despite interest in the White House, there is presently no institutionalized focus on innovation policy in the federal government. Ironically, the COMPETES Act eliminated the Technology Administration in the Commerce Department and nothing has been proposed in its place. Although the National Institute of Standards and Technology (NIST) has operated more as a

collection of technology-specific labs and lacks visibility as a resource for policy development, NIST could play a critical role in coordinating agency and industry interests. The new Director has proposed a reorganization, replacing the Deputy Director with three Associate Directors, with one responsible for *Innovation and Industry Services*.

CCIA's Position:

- Innovation is essential to promoting productivity and economic growth. Innovation should be promoted as a matter of public policy, both nationally and internationally.
- The U.S. needs a strong and coherent set of innovation policies that engages federal, state and industry interests.
- Federal policy should be sensitive to the role of information and communications technologies in enabling innovation throughout the economy.
- Sustained analytic capacity is needed to promote objective research, metrics and analysis concerning the changing nature of innovation and its relationship to federal laws and policies.