National Innovation Act of 2005  
Section-by-Section Analysis

TITLE I – INNOVATION PROMOTION

Sec. 101. President’s Council on Innovation

The President shall create a Council on Innovation comprised of heads of various executive agencies including Commerce, Defense, Education, Energy, and others. The Council, which will be chaired by the Secretary of Commerce, will have oversight over legislative proposals and executive branch initiatives for promoting innovation. Specifically, the Council will develop a process for using metrics to evaluate existing and proposed innovation policies and make recommendations to heads of executive agencies on improvements to innovation policies. In addition, the Council shall develop a comprehensive agenda for strengthening innovation among the Federal Government, states, academia, and the private sector. The Council will submit an annual report to the President and the Congress on its activities.

Sec. 102. Innovation Acceleration Grants

The President will establish the “Innovation Acceleration Grants Program” to promote and accelerate innovation in the United States. Each executive agency that currently funds research and development (R&D) in science, mathematics, engineering, and technology shall have a goal to commit at least 3% of its existing annual R&D budget to this program. Each such executive agency will also submit detailed plans for the implementation and evaluation of the program within the agency. The plans shall include metrics upon which grant funding decisions will be made and upon which the success of the grants awarded will be assessed. Grants shall be issued for a maximum period of three years (with possibility of renewal for another three years) and shall be awarded to projects that propose a novel approach to address fundamental technological challenges. The agency head may grant further renewals to programs requiring an extended timeframe to complete critical research to the extent they satisfy metrics developed to ensure their ongoing usefulness. Granting agencies are responsible for evaluation of all projects sponsored and for publishing such reviews.

Sec. 103. A National Commitment to Basic Research

Authorizations are provided to nearly double NSF research funding from Fiscal Year 2007 through Fiscal Year 2011. Within 180 days of enactment, the Director of the National Science Foundation shall submit to Congress a detailed plan for the use of these funds. The plan shall focus on means by which basic research in science and engineering will optimize the United States economy for global competition and leadership in productive innovation. In addition, within one year of enactment, the director of the Office of Science and Technology Policy shall evaluate funding needs for R&D in physical sciences and engineering in consultation with the relevant agencies and departments. As appropriate, recommendations for increases in such funding should be submitted to Congress.
Sec. 104. Regional Economic Development

The Assistant Secretary for Economic Development of the Department of Commerce shall review federal programs that support local economic development and devise a strategy to foster innovation within communities. The Assistant Secretary is directed to develop metrics to evaluate existing programs and, consistent with the strategy to foster innovation in local communities, focus funding on projects that satisfy the metrics developed and that best emphasize cooperation between the public and private sector to promote innovation.

In addition, within 1 year of enactment, the Secretary of Commerce shall publish a “Guide to Developing Successful Regional Innovation Hot Spots.” The Guide shall be compiled by the Secretary of Commerce in consultation with representatives of successful regional innovation hot spots to identify features of such hot spots and recommend mechanisms for forming new successful regional collaborations. The Department of Commerce will also be responsible for developing metrics to evaluate the efficacy of the regional innovation hot spots and for providing Congress with a biannual assessment of such programs. The Undersecretary for Technology of the Department of Commerce shall coordinate this review of hot spots.

Sec. 105. Development of Advanced Manufacturing Systems

The Director of the National Institute of Standards and Technology (NIST) shall support R&D efforts in the industrial sector to develop innovative, state-of-the-art manufacturing practices. Targeted activities include improving advanced distributed and desktop manufacturing capabilities, developing small lot manufacturing processes that are compatible with extended production systems, and applying nanotechnology to manufacturing. The Director of NIST shall coordinate these activities with activities under the Small Business Innovation Research Program, the Small Business Technology Transfer Program, and DoD’s Manufacturing Technology Program.

The NIST Director will support the development of prototypes for new technologies, the testing of these prototypes, and the adoption of standards to accelerate the applicability of these new technologies. NIST will hold a competition to select up to 3 Pilot Test Beds of Excellence to execute these tasks. The Federal Government will provide no more than 1/3 of the funding for each Test Bed. Private sector participants and corresponding state or local governments must each provide at least 1/3 of the funding for each Test Bed. All Test Beds are subject to review and none will receive federal funds for longer than five years.

The NIST Director shall ensure that the Manufacturing Extension Partnership (MEP) develops a focus on innovation.

The bill would authorize a total of $300 million between FY 2007 and FY 2011 to execute the programs in section 105.
Sec. 106. Study on Service Science

“Service science” refers to training regimens that are being developed to teach individuals how to apply technology to solving complex problems in the industrial sector. It is the sense of the Congress that the Federal Government should develop a better understanding of service science as a learning discipline in order to strengthen the competitiveness of U.S. institutions and enterprises. The Director of the National Science Foundation (NSF) shall conduct a study for Congress on how the Federal Government should best support service science through research, education and training. During the course of this study, the Director will consult with leaders from institutions of higher education and from the private sector.

TITLE II – MODERNIZATION OF SCIENCE, EDUCATION, AND HEALTHCARE PROGRAMS
Subtitle A – Science and Education

Sec. 201. Graduate Fellowships and Graduate Traineeships

This section authorizes funding for fellowship and traineeship programs that encourage students to pursue graduate studies in the sciences, technology, engineering and mathematics. The Director of NSF will expand the agency’s Graduate Research Fellowship Program by 250 fellowships per year and extend the length of each fellowship to five years. The bill authorizes $34 million/year for FY 2007- FY 2011 to support these additional fellowships. In addition, funding in the amount of $57 million/year is authorized for a similar expansion of the Integrated Graduate Education and Research Traineeship program by 250 new traineeships per year over five years.

Sec. 202. Professional Science Master’s Degree Programs

This section encourages universities to develop of Professional Science Master’s Degree Programs as a means of increasing the number of highly skilled graduates entering the science and technology workforce. The Director of NSF shall establish a clearinghouse in collaboration with institutions of higher learning, industries, and Federal agencies in order to document successful program elements used in existing Professional Science Master’s Degree Programs. The clearinghouse will provide an essential database of information for emerging programs.

In addition, the Director of NSF will grant awards to 4-year institutions of higher education for the creation or improvement of Professional Science Master’s Degree Programs. Funds may be awarded to a maximum of 200 institutions for a three year term (with possibility of renewal for 2 additional years), and preference will be given to applicants that are able to secure more than 2/3 of their funding from sources outside the Federal Government. NSF will develop performance benchmarks and will report to Congress within 180 days of this process with an evaluation of all funded programs. The bill authorizes $20 million for FY 2007 and such sums as may be necessary to carry out the programs established in Section 202 for each succeeding fiscal year.
Sec. 203. Increased Support for Science Education through the National Science Foundation

This section supports an increased commitment to science education through the Science, Mathematics, Engineering, and Technology Talent expansion program authorized under section 8(7) of the National Science Foundation Authorization Act of 2002. The Tech Talent expansion program encourages American universities to increase the number of graduates with degrees in mathematics and science. The bill authorizes $335 million from Fiscal Year 2007 to Fiscal Year 2010 for continued support of this program.

Sec. 204. Innovation-Based Experiential Learning

The Director of NSF shall award grants to local educational agencies to implement innovation-based experiential learning in 500 secondary schools and 500 elementary or middle schools. Funds are authorized at levels of $10 million for Fiscal Year 2007 and at $20 million/year for Fiscal Year 2008 and Fiscal Year 2009.

Subtitle B – 21st Century Healthcare System

Sec. 211. Sense of the Congress Regarding 21st Century Healthcare System

It is the sense of the Congress that the Federal Government should encourage the adoption of interoperable health information technology by facilitating the creation of standards for activities such as quality reporting, surveillance, epidemiology, or adverse event reporting. Federal agencies or departments performing such activities are urged to collect data in a manner consistent with devised standards.

TITLE III – INCENTIVES FOR ENCOURAGING INNOVATION
Subtitle A – Research Credits

Sec. 301. Permanent Extension of Research Credit

This provision makes the research credit set forth in Section 41(a) of the Internal Revenue Code permanent. The credit, originally enacted in 1981, has been extended 11 times and is scheduled to expire on December 31, 2005. The permanent tax credit should allow companies to engage more easily in long-term research projects.

Sec. 302. Increase in Rates of Alternative Incremental Credit

This section modifies the means for calculation of the elective alternative incremental research credit to increase the rates applicable to such an election. The bill restores the rates to range between 3% and 5%.
Sec. 303. Alternative Simplified Credit for Qualified Research Expenses

This section creates a new elective alternative simplified credit for qualified research expenses to increase the number of companies that can benefit from the incentive. Taxpayers will be able to elect a new alternative simplified credit equal to 12% of qualified research expenses for the taxable year in excess of 50% of the average qualified research expenses for the 3 prior taxable years.

Firms may only select one of the two alternative credits described in sections 302 and 303.

The language in this subtitle is identical to the provisions of S. 627 introduced by Senators Hatch and Baucus.

Subtitle B – Health and Education

Sec. 311. Study and Report on Catastrophic Healthcare

This provision requires the Secretary of Health and Human Services and the Secretary of Labor to jointly conduct a study and submit a report to Congress regarding costs associated with catastrophic healthcare events and chronic disease. The goal of the study is to develop innovative public and private sector approaches for dealing with such events and the report should discuss approaches and recommendations for administrative and legislative action to minimize the financial risks associated with these events.

Sec. 312. Lifelong Learning Accounts

This provision requires the Secretary of the Treasury, in collaboration with the Secretaries of Labor and Education, to conduct a study and submit a report to Congress regarding the potential establishment of lifelong learning accounts to be used for education or training purposes, and which would be exempt from personal income taxation. The study should include analysis and recommendations regarding whether individuals should be allowed to transfer funds in certain existing retirement or education-related accounts into a lifelong learning account without incurring tax liability or other penalties.

Subtitle C – Savings and Investments

Sec. 321. Regulations Relating to Private Foundation Support of Innovations in Economic Development

This provision requires the Secretary of the Treasury to issue regulations that clearly identify when distributions by private foundations for purposes of economic development will be treated as charitable contributions pursuant to the Internal Revenue Code. This provision also requires the Secretary of the Treasury to issue regulations to clarify the circumstances under which foundations may make investments in start-up ventures without triggering the five percent excise tax applicable to investments which jeopardize the carrying out of any of the Foundation’s exempt purposes.
Sec. 322. Advisory Group Regarding Valuation of Intangibles

This provision requires the Secretary of the Treasury to establish an advisory group to examine issues related to proper valuation of intangible assets, including R&D, business processes and software, brand enhancement, and employee training. The advisory group consists of representatives from the Department of Commerce, the Securities and Exchange Commission, the Commodity Futures Trading Commission, the Board of Governors of the Federal Reserve System, the New York Stock Exchange, the National Association of Securities Dealers Automatic Quotation System and other significant industry sectors. Based on its research, as well as communications with industry and academic experts, the advisory group is required to submit a report to the Secretary of the Treasury within 24 months of enactment, including discussion of best practices for valuation of intangibles and metrics or other solutions for disclosure of intangibles.

TITLE IV – DEPARTMENT OF DEFENSE MATTERS
Subtitle A – Defense Research and Education

Sec. 401. Revitalization of Frontier and Multidisciplinary Research

U.S. Government investment in frontier and multidisciplinary research is key to the further application and development of innovative technologies. This section establishes as a goal that the Department of Defense allocate at least 3% of its total budget toward science and technology research. This provision also urges the allocation of at least 20 percent of this amount toward basic research in such fields.

Sec. 402. Enhancement of Education

This section extends the Department of Defense’s Science, Mathematics, and Research for Transformation (SMART) Scholarships program through September 30, 2011, and authorizes $41.3 million/year over 5 years for the SMART program to support additional participants pursuing doctoral degrees and master’s degrees in relevant fields. This section also authorizes $45 million/year over 5 years to be appropriated to the Department of Defense through 2011 to support the expansion of the National Defense Science and Engineering Graduate Fellowship program to additional participants.

This section also authorizes the creation of a new Department of Defense competitive traineeship program for students in the areas of mathematics, science, and engineering with specific focus on innovation-oriented studies, multidisciplinary studies and laboratory research. This section authorizes $11.1 million/year over 5 years to sponsor up to 30 doctoral candidates, 30 master’s candidates, and 20 undergraduates under this program. Program graduates will be encouraged to work for at least 10 years for the Department of Defense. The Secretary of Defense shall submit an annual report to the House and Senate Armed Services Committees describing the work done by all sponsored students and the benefit of this work to the Department of Defense.
Subtitle B – Defense Advanced Manufacturing

Sec. 411. Manufacturing Research and Development

This section requires the Under Secretary of Defense for Acquisition, Technology, and Logistics to identify innovative manufacturing processes and advanced technologies that could enhance the efficiency and productivity of the defense manufacturing base. Once identified, the Under Secretary is further required to commission research and development of such innovative processes and technologies, and is encouraged to make use of information technology and new business models in the development of extended production enterprises. The Under Secretary shall consider defense priorities established in the most recent Joint Warfighting Science and Technology Plan when undertaking the aforementioned research and development.

Sec. 412. Transition of Transformational Manufacturing Processes and Technologies to the Defense Manufacturing Base

This section requires the Under Secretary of Defense for Acquisition, Technology, and Logistics to take certain actions, including the execution of a memorandum of understanding among appropriate elements in the Department of Defense, to accelerate the transition by manufacturers in the defense manufacturing base to transformational manufacturing processes and technologies, including processes and technologies identified or created pursuant to Section 411. The Under Secretary is also required to utilize the existing Manufacturing Technology Program to develop prototypes and test beds for such processes and technologies, and to implement a program for the defense manufacturing base to continuously identify and utilize improvements in such processes and technologies. In order to ensure increases in productivity and efficiency, the Under Secretary will promote research and development under the Manufacturing Technology Program and outreach through the Manufacturing Extension Partnership Program.

Sec. 413. Manufacturing Technology Strategies

The Under Secretary of Defense for Acquisition, Technology, and Logistics is authorized to identify and investigate innovative areas of technology that could be beneficial to the Department of Defense in carrying out its defense manufacturing requirements. Once identified, the Under Secretary may establish a task force with the private sector to map a strategy for the development of such technologies and related manufacturing processes. The roadmapping process shall begin no later than January, 2007.

Sec. 414. Planning for Adoption of Strategic Innovation

This section requires the Secretary of Defense to ensure that contracts valued at $50,000,000 or more under a technology or logistics program at the Department of Defense include requirements for planning by the contractor under such contract for the adoption of innovative technologies under that contract. Specifically, contracts must include requirements directed toward identifying and implementing innovative technologies developed in the private sector or academia. Further, such contractors must also report annually on the implementation of such technologies.
Sec. 415.  Report

This section requires the Under Secretary to submit a report to Congress describing all activities taken pursuant to this Subtitle during Fiscal Year 2007. The report should include an assessment of the effectiveness of each action taken in enhancing the research and development of innovative technologies and processes in the defense manufacturing area, as well as any recommendations for additional actions to be taken consistent with the requirements of this Subtitle.

Sec. 416.  Authorization of Appropriations

This section authorizes $300,000,000 of funding between Fiscal Year 2007 and Fiscal Year 2011 to the Department of Defense for the purposes of carrying out this subtitle.

TITLE V – JUDICIARY AND OTHER MATTERS

Sec. 501.  Sense of the Congress on Retaining American-Educated High Tech Talent in the United States

This section states that it is the sense of Congress that U.S. immigration laws should be reformed to accommodate the need to retain in the United States those foreign nationals graduating from U.S. universities with master’s or higher degrees in the sciences, technology, engineering or mathematics.

Sec. 502.  Study on Barriers to Innovation

This section requires the National Academy of Sciences to conduct a study to identify forms of risk that create potential barriers to private sector innovation. The study is intended to support research on the long-term value of innovation to the business community and to identify means to mitigate legal or practical risks presently associated with such innovation activities. This section authorizes $1,000,000 for the purposes of carrying out this study and requires the National Academy to submit a report to Congress on its findings within one year of enactment.

Sec. 503.  Sense of the Congress on Patent Reform

It is the sense of the Congress that the United States patent law system should be reformed to enhance the quality of patents, to leverage patent databases as innovation tools, and to create best practices for global collaborative standard-setting. This section further states that the Federal Government should fully fund the Patent and Trademark Office, improve compliance with existing patenting requirements, establish a fair post-grant patent review procedure, and secure reciprocal access to foreign patent databases.