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NATIONAL SCIENCE AND TECHNOLOGY COUNCIL  
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MEMORANDUM FOR THE NATIONAL SCIENCE & TECHNOLOGY COUNCIL  
COMMITTEE ON TECHNOLOGY

FROM: Aneesh Chopra, US Chief Technology Officer and Associate Director for  
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SUBJECT: Winning the Future through Open Innovation a Progress Report on Our Open  
Government Initiative

President Obama is determined to win the future by out-innovating, out-educating and out-building our global competition. In his *Strategy for American Innovation*, he frames the government's role as (1) investing in the building blocks for innovation (infrastructure, research and development [R&D], and an educated workforce); (2) promoting market-based innovation; and (3) catalyzing breakthroughs for national priorities (e.g., health care, energy, manufacturing, and education).

Key to catalyzing breakthroughs in national priorities is to unlock opportunities for productivity improvement, including the ability to harness information technologies in new and creative ways. A recent McKinsey study estimates that in the healthcare sector alone, the potential benefits from deploying data-harvesting technologies and skills could be \$300 billion a year.<sup>1</sup> We invest more in pet food R&D than we do in R&D for the electric grid.<sup>2</sup> A recent PCAST report estimates that R&D expenditures in K-12 education account for only 0.2% of revenues in comparison to pharmaceutical companies, which invest approximately 15% of their revenues in R&D.<sup>3</sup>

Amidst the execution of our innovation strategy is a mistrust of Washington's ability to get the job done. For too long, the American people have worked harder for less buying power, grown more concerned for their job and health security, and lost faith in the next generation's ability to live a better life than their own. Legacy perceptions of Washington have reinforced the belief that the government benefits the special interests and the well-connected at the expense of the American people. The public sector has struggled to harness technology to boost productivity.

Key to addressing these two challenges – the trust deficit and the need for a forward-leaning vision for our economy – is our ability to harness the entrepreneurial spirit of innovators through a portfolio of technology and innovation policies that emphasize the government's role as "impatient convener" – one that delivers results in shorter time frames and builds on existing legal and budgetary frameworks.

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<sup>1</sup> Steve Lohr, New Ways to Exploit Raw Data May Bring Surge of Innovation, a Study Says, The New York Times, (May 13, 2011).

<sup>2</sup> Alex Kingsbury, "A 'Smart' Electrical Grid Could Secure the Energy Supply," U.S. News and World Report, (April 7, 2010).

<sup>3</sup> President's Council of Advisors on Science and Technology report, "Prepare and Inspire: K-12 Science, Technology, Engineering, and Math (STEM) Education for America's Future" (2010).

Over the past two years, the NSTC Committee on Technology has embraced this challenge by advancing policies, platforms, and public/private partnerships that sit at the intersection of our innovation strategy and open government initiative. The pages that follow celebrate ten leading practices organized by four policy levers we hope to scale across the federal agencies:

- **Democratize Government Data:** On his first full day in office, President Obama signed a [Memorandum on Transparency and Open Government](#), ushering in a new era in which the gap between the American people and their government would close. A signature initiative in that endeavor has been the launch of [Data.gov](#), a platform that provides public access to high value, machine readable datasets, now numbering in excess of 385,000. It has inspired a global movement - 16 nations, 29 states, 11 cities - towards open data for innovators to commercialize in ways big and small. To build on this movement, the NSTC has established two new working groups - an Interagency Working Group on Digital Data and a Senior Steering Group within NITRD focused on “Big Data,” including scalable algorithms for machine learning.
- **Encourage Market Transparency**– The Obama Administration is working with the health, energy, manufacturing, and education sectors (among others) to simplify access to high-value data through engagement in voluntary, consensus standards activities, and, where appropriate, incorporating disclosure as a low cost, high impact regulatory tool. To build on this movement, we’re launching an NSTC Task Force on “Smart Disclosure” to facilitate transparent “marketplaces” that will lower barriers to entry and unleash the creativity of entrepreneurs to compete in the development of new consumer-oriented products and services.
- **Cultivate Innovation Ecosystems** The President’s goal to catalyze breakthroughs in national priorities will benefit greatly from the growth of innovation ecosystems seeded with a pipeline of ideas born out of pre-competitive R&D collaboration; a test-bed to foster experimentation between problem seekers and solvers; and an ability to scale what works. To support these ecosystems, the Administration has partnered with organizations to engage communities and has launched [Challenge.gov](#), a platform that provides public access to agency sponsored challenges and prizes. Through a “Community of Practice” led by OSTP and OMB, we’ve been building the pipeline of ideas, supporting a community of innovators and users, and catalyzing breakthroughs in national priorities capable of fueling new products and services that have the potential to scale.
- **Create Capacity for Innovation** – To manage the portfolio of policy tools noted above, the Administration has actively recruited a group of technology and innovation leaders with direct reporting relationships to Cabinet Secretaries and agency heads. In turn, these leaders are recruiting 3-5 person “innovation teams” comprised of internal and external talent to tackle identified problems with rapid results. Through the “Innovation Cohort” led by the Presidential Personnel Office, we’ve been surfacing leading practices for open innovation, inspiring the public sector to move toward a culture of possibility.



## LEADING PRACTICES FOR OPEN INNOVATION

Our open innovation efforts have surfaced ten leading practices that have the potential to scale within and across Federal agencies through interagency policy and implementation groups under the leadership of, or with support from, the NSTC Committee on Technology.

1. USPTO's Public/Private Data Access Partnership;
2. NLM's API Catalog;
3. NIST's Smart Grid Interoperability Panel;
4. HHS's HealthCare.gov Insurance Finder
5. NASA's Tournament Lab;
6. DARPA's Crowd-Derived Combat Support Vehicle Challenge;
7. DOE's ARPA-e Innovation Agency;
8. DoEd's Invest in Innovation Fund;
9. HHS's Direct Project Innovation Team;
10. PPO's Technology & Innovation Officer Job Description Matrix



### Democratize Government Data

#### **Practice #1: USPTO's Public/Private Data Access Partnership**

*Context:* The Open Government Directive noted, “to the extent practicable and subject to valid restrictions, agencies should publish information online in an open format that can be retrieved, downloaded, indexed, and searched by commonly used web search applications. An open format is one that is platform independent, machine readable, and made available to the public without restrictions that would impede the re-use of that information.”

*Problem in Brief:* USPTO faced two challenges – an existing program where USPTO charged for data products and received nearly two million dollars in annual revenue through, for example, the sale of one year subscriptions to patent text with embedded images at \$43,000. The second challenge was the lack of funding to expand the amount of data to be made publicly accessible, including the highly sought-after Public PAIR (Patent Application Information Retrieval) data which is not currently available via bulk download.

*Practice #1 – Public/Private Data Access Partnership:* In 2010, the USPTO entered into a no-cost agreement with Google in which Google agreed to disseminate the agency's bulk electronic patent and trademark data at no charge to the public. Under the agreement, USPTO provided Google all existing bulk electronic files, with access to daily, weekly, and bi-monthly updates. The electronic data includes images and text of patent grants and published applications, trademark applications, patent classification information and patent and trademark assignments.

In addition, USPTO authorizes Google to “mine” Public PAIR data in its current legacy form (during hours of low usage) to facilitate the re-use of such information for free by the public and third-party organizations.

*Results:* Nearly two terabytes of data, representing patent and trademark data back to 1790, is now available to the public free of charge on Google. About 13 GB of new data is added weekly.

Third party organizations like the non-profit institute [Cambia](#) have built search tools like Patent Lens by using USPTO data obtained for free from Google. To spur innovation in a clean energy economy, [OnGreen](#), an online marketplace that connects entrepreneurs and investors interested in CleanTech intellectual property, has added value to a subset of patents by indexing them with an ontology consisting of 246 green technology categories and enabling social networking features to accelerate commercialization.

*Related Policy:* The NSTC has formed two new working groups - an Interagency Working Group on Digital Data under the Committee on Science (as called for by the America COMPETES Reauthorization Act) whose charter includes a call for recommendations by October, 2011 on how federal science agencies should advance discoverability, access and reuse of scientific data produced through unclassified R&D investments; second, a “Senior Steering Group” within NITRD on “Big Data” in response to the President’s Council of Advisors on Science and Technology’s “Designing a Digital Future” report, which calls for increased research in large-scale data management and analysis.



## **Practice #2: NLM’s API Catalog**

*Context:* The [HHS Open Government Plan](#) featured the flagship “Health Data Initiative” to inspire entrepreneurs and “problem solvers” to harness open data to fuel applications and services that help improve health and health care. In addition, the health IT incentive payments authorized by the HITECH Act to spur the “meaningful use” of electronic health records include patient access to data provisions that are not widely available in the market today.

*Problem in Brief:* The National Library of Medicine (NLM) is the world's largest medical library, with electronic data sources that deliver trillions of bytes of data to millions of scientists, health professionals, and members of the public every day. Many of NLM’s data resources have been available for download and through APIs for many years, as well as via interactive web searching. Nonetheless, NLM’s resources are not well-known to many entrepreneurs and problem solvers who might make effective use of these data to meet health and health care needs, including achievement of selected “meaningful use” criteria. In addition, some highly useful NLM resources did not as yet have public APIs.

*Practice #2 – NLM’s API Catalog:* On September 17, 2010, NLM released a new API catalog to provide easy access to all of its APIs and to spur a competitive market of third party applications and services that extend access to government data resources without any cost or intellectual property constraint. NLM also developed additional APIs and is adding them to the catalog as they are ready for routine use. Notable among the newer APIs is MedlinePlus Connect, which returns links to relevant patient education information in response to queries that include standard identifiers for problems, medications, and common tests in patient records and clinical systems. NLM has raised awareness of its API catalog through a current “Show off Your Apps”

Challenge to encourage people to create innovative software applications that use the Library's vast collection of biomedical data.

*Results:* The catalog currently includes 19 APIs, including tools to access relevant scientific and medical literature needed for clinical decision support, presenting patient education materials, finding clinical trials, understanding pharmaceutical data, and access to clinical terminologies required to achieve "meaningful use" of electronic health records.

On June 9<sup>th</sup>, at the Health Data Initiative Forum, several health IT companies announced that they have successfully incorporated the ClinicalTrials.gov API to personalize which trials might benefit their customers; the MedlinePlus Connect API to (at least in part) fulfill one or more "meaningful use" technical requirements (providing patient education materials and supporting decision-making); and more. Other government agencies, including the Indian Health Service and the Substance Abuse and Mental Health Services Administration, have also recently applied NLM APIs in support of their missions.

Further innovations are expected in response to NLM's "Apps Challenge," whose winners will be announced on November 2, 2011.

*Related Policy:* The *Executive Order on Streamlining Service Delivery and Improving Customer Service* calls on federal agencies to use innovative technologies that improve service and lower costs. In support of this provision, OSTP shall assist and support agencies, including on best practices in the use of application programming interfaces (APIs).



## **Encourage Market Transparency**

### **Practice #3: NIST's Smart Grid Interoperability Panel**

*Context:* The 2007 Energy Independence and Security Act called on the NIST Director to "coordinate the development of a framework that includes protocols and model standards for information management to achieve interoperability of smart grid devices and systems. Such protocols and standards shall further align policy, business, and technology approaches in a manner that would enable all electric resources, including demand-side resources, to contribute to an efficient, reliable electricity network."

*Problem in Brief:* NIST, in collaboration with the Dept of Energy, faced the challenge of putting in place the building blocks for interoperability among the myriad products and services that envision a connection to the smart grid. Given the (longer term) time horizon of capital investments by regulated utilities, how might we ensure today's smart meters remain compatible with tomorrow's Smart Grid system, enable a return on investment, and foster innovative new products and services?

*Practice #3 – NIST's Smart Grid Interoperability Panel ("SGIP"):* In 2010, NIST established a public/private forum (the SGIP) to develop important structural supports for standards, including the tools that will comprise a testing and certification framework and a "Catalog of Standards" to

hold descriptive information about the smart grid standards. All activities are publicly accessible via an open wiki to simplify access by stakeholders.

*Results:* The SGIP has identified 18 standards development projects organized through “priority action plans” for near-term consideration. By May, 2011, the SGIP has advanced five such plans, including “PAP10” which has completed the basic data model for customer energy usage information, and which is now being further developed into standards for applications.

*Related Policy:* The NSTC formed the Subcommittee on Standards in March 2010 whose charter calls for answers to the question of how to best engage government agencies in voluntary, consensus-based standards developed by the private sector.



### **Practice #4: HHS’s HealthCare.gov Insurance Finder**

*Context:* The Affordable Care Act called for a website that helps users find health insurance options, to be fueled by a comprehensive inventory of both private and public health coverage choices that had never been previously assembled.

*Problem in Brief:* It has historically been extremely difficult for individuals and small businesses seeking health insurance to identify and understand all available options within their community, resulting in suboptimal choices or worse. To help address this, HHS was tasked in the Affordable Care Act to deliver a comprehensive health insurance search website within 90 days of passage, an almost herculean feat in IT development or acquisition cycles in government.

*Practice #4 – HealthCare.gov Insurance Finder:* By July 2010, HHS delivered (on time) the first website to provide a comprehensive catalog of both public and private health insurance options across the U.S. in a single, easy-to-use tool for consumers. It personalized a menu of insurance options based on a consumer’s answers to a series of questions -- drawing on information compiled by HHS on thousands of private health insurance plans and on every Medicaid, Children’s Health Insurance Program, and pre-existing condition insurance plan in the country.

*Results:* Since its launch on July 1, 2010, HealthCare.gov has received over 5.9 million visits, with visitors spending an average of ten minutes on the site, and has won widespread praise for its usefulness as a consumer tool from voices ranging from Consumer Reports to the American Heart Association.

HHS has promoted market transparency by allowing consumers to easily compare the pricing and benefits of available insurance plans, along with information that insurers have never previously made public: the percentage of applications for a given insurance product that have been denied and the percentage of quotes issued for a given product that have been higher than standard pricing relayed through the Insurance Finder.

*Related Policy:* The NSTC is launching a Task Force on “Smart Disclosure” in 2011 whose charter will call for the development of guidelines based on best practices for making data from consumer markets available and useful for consumer decision-making.



## **Cultivate Innovation Ecosystems**

### **Practice #5: NASA’s Tournament Lab**

*Context:* The America COMPETES Reauthorization Act codified the use of prizes and challenges across all federal agencies, a policy initiated through the Open Government Directive and furthered by guidance issued by the Chief Performance Officer on the [use of prizes and challenges](#).

*Problem in Brief:* NASA’s research divisions accustomed to “ordering” laboratory tests or supplies are frustrated by the difficulty (time and cost) of addressing computational or complex data processing challenges. More broadly, government IT procurement is often limited in its supplier diversity.

*Practice #5 – NASA’s Tournament Lab:* In October 2010, NASA and Harvard’s Institute for Quantitative Social Science, in collaboration with TopCoder, established the NASA Tournament Lab (NTL), which enables a community of over 200,000 software developers to compete with each other in pursuit of the best computer code for NASA systems.

*Results:* A Harvard study finds that IT programmers are nearly twice as productive when they can select the work environment that best suits them (choices included working alone, on a 5-person team, or in a competition with 19 other programmers).

To date, NASA has concluded several challenges with successful results – ideas that exceeded researcher expectations at a fraction of the cost. One focused on a software algorithm to recommend the ideal components of the space medical kit included in each space mission.

*Related Policy:* The NITRD Social, Economic, and Workforce Implications of IT Coordinating Group is charged with a better understanding of how to foster a productive IT workforce.



### **Practice #6: DARPA’s Crowd-Derived Combat Support Vehicle Challenge**

*Context:* To innovate, we must make. As part of DARPA’s larger effort to rethink how we make things, the Adaptive Vehicle Make (AVM) portfolio of programs is focused on significantly compressing development timelines for complex military systems. AVM seeks to develop a new set of design tools, metrics, and processes that enable the synthesis of system designs that are verifiably “correct-by-construction”—in other words, the first article out of the factory is assured to work. A natural complement to such a “fab-less” design capability, is the construct of “foundry-style” manufacturing—a factory that is rapidly programmable to produce a wide-range of products across a given product domain with minimal learning curve or switching time. Both

of these constructs can then be used to substantially democratize the innovation process by creating crowd-sourced system designs, utilizing prize challenges to incentivize a “make-before-buy” approach to defense system acquisition, and to train a new generation of manufacturing innovators for the Department and the Nation.

*Problem in Brief:* An important aspect of AVM is democratizing design. Increasing the size of the idea pool (by several orders of magnitude) from which military system designs are drawn has the potential to vastly improve the number and quality of these designs. The question DARPA seeks to answer is how best to access this idea pool. Reaching out to the world through crowd-sourcing presents a likely avenue to success, and we are exploring the best methodologies for implementing this.

*Practice #6 – DARPA’s Crowd-Derived Combat Support Vehicle Challenge:* The Experimental Crowd-derived Combat support Vehicle (XC2V) project was initiated by DARPA to explore the potential for deriving militarily relevant vehicle body designs through a crowd-sourcing methodology. There are many different ways of implementing crowd-sourcing as a path to a solution, and in this case DARPA utilized the existing vehicle design crowd-sourcing setup of performer Local Motors, Inc. (LMI). The XC2V vehicle body design competition was carried out over February and March of 2011, and the winning design is currently being built at LMI.

*Results:* The XC2V Challenge resulted in an almost overwhelming response from the LMI design community. More designs were submitted than in any previous competition administered by LMI, and the final voting pitted 159 qualified body designs against one another. The final selection by the community, informed by user feedback from DARPA and the uniformed military, was the Flypmode, designed by Victor Garcia of Denton, TX.

After completion of the crowd selection for the XC2V body design, DARPA is taking the rich data set resulting from the design, feedback, and voting process and conducting analysis of this to help inform decisions about the right crowd-sourcing methodology to utilize in AVM. With this in mind, we have conducted a second round of voting utilizing the designs from the original XC2V competition, but voted on by a relatively homogeneous military user community. DARPA is currently studying these results in order to better understand the effects of both crowd diversity and opinion diversity on the ultimate result of a crowd selection.

The XC2V (as selected in the original competition) is currently being built by LMI and will be complete by the end of June. The second round of voting is complete, and analysis of the consolidated data set from both selection processes is ongoing.

*Related Policy:* The NSTC Interagency Working Group on Advanced Manufacturing (as codified in the America COMPETES Reauthorization Act) is chartered with ideas to strengthen the domestic industrial base, including R&D commercialization and public/private partnerships.



## **Create Capacity for Innovation**

### **Practice #7: DOE's ARPA-E Innovation Agency**

*Context:* Recognizing the need to reevaluate the way the United States spurs innovation, the National Academies released a 2006 report, “Rising Above the Gathering Storm,” that included the recommendation to establish an Advanced Research Projects Agency—Energy (ARPA-E) within the Department of Energy (DOE). Authorized by the America COMPETES Act of 2007, ARPA-E was launched by \$400 million in initial funding from the American Recovery and Reinvestment Act of 2009.

*Problem in Brief:* In order to catalyze creative “out-of-the-box” transformational energy research that industry by itself cannot, or will not, support due to its high risk profile, but where success would provide dramatic benefits for the nation, ARPA-E needs world-class talent and a flat, nimble, and sparse organizational structure.

*Practice #7 – DOE's ARPA-E Innovation Agency:* ARPA-E's strategy is to catalyze energy innovations for a secure American future and ensure U.S. technical leadership. ARPA-E is focused on translating science into breakthrough technologies that represent quantum leaps in cost and performance. In order to achieve its mission objectives, ARPA-E has used its statutory advantages to recruit top talent with term-limited positions, employed a “pay for disruptive outcomes” model in framing solicitations to attract competing breakthrough technologies, built a market-focused commercialization team with experienced venture investors and entrepreneurs, and empowered program directors with technical flexibility and a fierce sense of urgency.

Additional characteristics of the agency that are notable in terms of open innovation: every funding program stems from aggressive outward-facing research and at least one multi-stakeholder technology workshop; funding programs often aim to bring together technology communities that otherwise may not interact as a means of sparking new innovation, and funding opportunities generally encourage partnering across the technology value-chain.

*Results:* ARPA-E has attracted many of the country's brightest minds to guide the agency, including experienced scientists, engineers, researchers, investors, and entrepreneurs; a PCAST report in 2010 noted: “Although the ultimate success of the research funded by ARPA-E is unknown... they have been successful in their peer review of proposals, quick negotiation of contracts, and rapid hiring of high-caliber personnel.” Six projects have attracted about \$100 million in follow-on capital – about four times as much as ARPA-E put in; even projects highlighted but unfunded by ARPA-E have attracted market interest; the agency has sparked the formation of several start-up companies; and the ARPA-E summit is the “go-to” event for entrepreneurs and investors in clean tech.

*Related Policy:* The NSTC Subcommittee on Smart Grid is chartered with furthering the goals of the President's energy agenda with respect to smart grid technologies, and is releasing in June 2011 the Administration's Smart Grid Policy Framework to chart a path forward for further cost-effective smart grid investments and spur innovation across the electric ecosystem.



## **Practice #8: DoEd’s Invest in Innovation Fund**

*Context:* The 2009 Recovery Act established the Investing in Innovation Fund to provide competitive grants to applicants with a record of improving student achievement and attainment in order to expand the implementation of, and investment in, innovative practices that are demonstrated to have an impact on improving student achievement or student growth, closing achievement gaps, decreasing dropout rates, increasing high school graduation rates, or increasing college enrollment and completion rates.

*Problem in Brief:* To prepare students for the challenges of the global economy, President Obama wants the United States to regain the position it held not long ago as the nation with the highest proportion of college graduates in the world. To reach the finish line, we need to identify innovations that appear in pockets across the country and support the expansion of the most effective ones so they scale across large numbers of students.

*Practice #8 – DoEd’s Invest in Innovation Fund:* i3 establishes a “pipeline” of funding to generate new innovations, rigorously validate the effectiveness of promising programs, and scale the most effective to serve thousands of students across the country. i3 encourages applicants to address key areas of reform as well as emerging priorities such as improving productivity in education and more effective use of digital tools and materials. In addition to unprecedented transparency in the grant application process, i3 encourages public/private partnerships as a path to sustainability beyond public funding and requires independent evaluations of each project to add to the knowledge base about what works in education.

*Results:* i3 attracted nearly 1,700 applicants from nearly every corner of the country. The 49 awardees attracted nearly \$140M in private matching funds, including \$63M generated through an innovative collaboration with the philanthropy community called the Foundation Registry which allowed finalists to submit a “common application” for consideration by 40 independent organizations, including high net-worth donors. Many awardees had no prior relationship with the philanthropies.

*Related Policy:* The NEC/OSTP working group on learning technologies is chartered with articulating a vision for the learning environment of the future and the role that technology can play in improving learning outcomes. It will develop near term and long term strategies in areas such as educational technology R&D and stimulating demand for advanced learning technologies.



## **Practice #9: HHS’s Direct Project Innovation Team**

*Context:* The 2009 HITECH Act codified an unprecedented investment in health information technology in support of health care delivery and patient care transformation. The Office of the National Coordinator (“ONC”) established programs offering provider technical support, public health connectivity, and training to assure the workforce is properly trained and equipped to be meaningful users of EHRs.

*Problem in Brief:* The ability for physicians to share clinical information electronically is a prerequisite for participation in the “Meaningful Use” incentive program. Unfortunately, providers still overwhelmingly rely on faxes. Despite the widespread acceptance and utilization of the Internet for electronic communication in other sectors, healthcare hadn’t adopted the appropriate standards for secure, direct messaging.

*Practice #9 – HHS’ Direct Project Innovation Team:* In March, 2010, ONC launched the Direct Project and recruited an entrepreneur with experience in health IT, Arien Malec, to lead it. Via a public wikispace and open collaboration forums, he convened a team of industry and government innovators who delivered working prototypes and technical specifications in 90 days for a simple, secure, scalable, standards-based transportation mechanism that enables participants to send encrypted health information directly to known, trusted recipients over the Internet.

*Results:* The Direct Project delivered consensus technical recommendations and engaged volunteers in building open source reference implementations. The first commercial transaction took place in January, 2011 between a Minnesota health system (Hennepin County Medical Center) and the Minnesota public health agency. After a very modest implementation cycle (roughly four hours on each side), the two organizations have exchanged over 70,000 records (averaging 1,000 every day).

Organizations across the country are using the specifications to improve the quality and efficiency of the US healthcare system, and the project celebrated its one year birthday with a pledge by roughly 95% of the EHR market (by vendor) and most states and territories to adopt the standard in time for the second stage of the “meaningful use” program.



## **Practice #10: PPO’s Technology & Innovation Officer Job Description Matrix**

*Context:* A key component of President Obama’s vision for innovation is the active engagement of entrepreneurs from inside and outside government to solve the biggest challenges facing our country. The President appointed the first Chief Technology Officer (CTO) and Chief Information Officer (CIO) and inspired agencies to similarly search for leaders who share the President’s passion for new ideas that will transform the delivery of government products and services in pursuit of national priorities. To that end, he tasked his Presidential Personnel Office with developing tools to increase the pipeline of innovators.

*Problem in Brief:* While the President’s call is clear, an army of change agents is required to actually design and implement the programs and projects to carry out his vision. Public sector agencies often find it difficult to source talent who share a passion for improving, adapting or developing services while embracing an innovation management process.

*Practice #10 – PPO’s Technology & Innovation Officer Job Description Matrix:* In 2010, PPO launched the “Innovation Cohort” comprised of the growing number of appointed technology and innovation leaders throughout the federal agencies. Beyond best practices sharing, real time problem solving, and on-boarding for new innovators, a key deliverable has been the development of sample job description attributes needed to build the army of innovators, especially those with a deep understanding of customer service and the promise of technology.

*Results:* Over 15 agencies have an innovation official appointed or in consideration. Based on our experience over the last two years, four models for innovation leaders have been developed to meet the unique needs of agencies. Within these models, specific requirements have been developed to focus the search for innovation leaders, create the necessary senior level buy-in to improve the chances of their success, and ensure a better fit between government needs and the skills and experiences of those wishing to become part of the army of innovators.



The NSTC Committee on Technology plays a pivotal role in advancing the President's Strategy for American Innovation and in a manner that is consistent with the Open Government Initiative. Thanks to your efforts, we have implemented a number of leading practices that are worthy of scaling across the federal government. I welcome your feedback on this summary and on how we can best support your efforts as we work together to harness the power and potential of technology, data and innovation to advance our nation's top priorities.