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"Data-Driven Performance: Using Technology to Deliver Results"

Chairman Conrad, Ranking Member Gregg, and Members of the Committee, it is indeed a great honor to appear before you today. We thank you for your leadership on this important topic and look forward to working together in the weeks and months ahead.

President Obama understands the importance of technology and innovation in the effective and efficient delivery of government services. It is no coincidence he announced the nation's first Chief Technology and Performance Officers during the same Internet Address that focused on reforming spending and reducing waste.

The President directed me, together with our Chief Information Officer, to "give all Americans a voice in their government and ensure they know exactly how we're spending their money – and can hold us accountable for the results." [Weekly Address, April 18th, 2009]

In my capacity as Assistant to the President, Chief Technology Officer, and Associate Director for Technology in the Office of Science & Technology Policy, I am focused on harnessing the power and potential of technology and innovation to execute on the President's vision for a 21st Century economy – one where jobs are more plentiful, American firms more competitive, communications more affordable, broadband more abundant, families more connected, and Americans more safe and secure.

I. TECHNOLOGY FOR OPEN GOVERNMENT

Just last Friday, my co-chair, CIO Vivek Kundra, and I inaugurated the National Science & Technology Council's Committee on Technology with the goal of organizing the

capabilities of more than 20 departmental and agency technology leaders squarely focused on delivering on the President's vision, with particular emphasis on improving government performance through openness. Since his first full day in office, when he issued the "Transparency and Open Government Memorandum", my office has been collaborating with the Office of Management and Budget (OMB) and the General Services Administration (GSA) to develop recommendations for an Open Government Directive setting forth specific actions to make government more transparent, participatory and collaborative.

I am pleased to share some examples of the results of this endeavor with special emphasis on the role of technology and innovation in delivering results for governmental performance.

Open Government Directive

On December 8th, OMB Director Peter Orszag published the President's Open Government Directive to hardwire accountability, access, and public participation into government operations, reflecting a set of recommendations my office culled directly from the American people during the summer of 2009. Over the course of a month-long pilot initiative to demonstrate the benefits of emerging technologies like wikis, blogs, and "crowdsourced" ideas platforms, we attracted more than one thousand ideas and blog posts that directly informed our approach to delivering results in three distinct areas:

First, the directive instructs agencies to provide information to the public online in open, accessible, machine-readable formats. "Machine-readable" may sound like an odd requirement, but it is an essential criterion to enable third-party application development at very low marginal cost. Agencies are required to develop a timeline for publishing new, high-value information that (a) increases agency accountability and responsiveness; (b) improves public knowledge of the agency and its operations; (c) furthers the core mission of the agency; (d) creates economic opportunity; or (e) responds to public need and demand, as identified through public consultation.

Second, the directive aims to instill the values of transparency, participation, and collaboration into the culture of every agency by requiring agencies to formulate an Open Government Plan and website. The directive calls for each agency to develop its own unique roadmap, in consultation with the American people and tech-savvy open government experts, rather than prescribing a one-size-fits-all approach. The plan should reflect the input of senior policy, legal, and technology leadership, as well as input from the general public and open government experts.

Third, the directive calls upon the President's reform team – the Chief Performance Officer, Chief Technology Officer and Chief Information Officer – to review government-wide information policies that may need updating or clarifying to allow agencies to utilize new technologies that promote open government fully. OMB will issue guidance for a framework for the use of challenges, prizes and other incentive-backed strategies for innovation in government.

I've seen the benefits of open government during my short tenure as Chief Technology Officer. When coupled with policy leadership and management focus, these principles can serve as the foundation for data-driven performance.

With your permission, I'd like to share three examples from the dozens of initiatives we've launched in the past year (of the many profiled on www.whitehouse.gov/open) that help demonstrate the relationship between open government and improved agency performance.

II. TECHNOLOGY FOR GOVERNMENT PERFORMANCE

Since joining the Administration this past summer, I've focused my government performance efforts in three areas in which technology can spur rapid innovation and drive results:

1. *R&D*: Moving Research into Development and Deployment
2. *Open Standards*: Enabling "Government as a Platform"
3. *Prizes and Competitions*: Aligning Innovation toward National Priorities

When combined, these three pillars can drive high-performance government. By "platform", I mean a government that uses low-cost information technologies to do what it uniquely can – making high-quality data available, coordinating standards activities across many disparate actors, moving federally-funded research into development and deployment, hosting prizes and competitions – while leaving it to citizens, companies, non-profits, and academic institutions to build innovative tools and services on top of the platform.

To illustrate what this actually means in practice, let me provide one concrete example from each of those three areas:

A. R&D: Moving Research into Development and Deployment

ISDS DiSTRIBuTE Collaborative on Bio-surveillance: On October 7th, 2009, the Centers for Disease Control (CDC) announced an open collaboration with the International Society for Disease Surveillance (ISDS) and the Public Health Informatics Institute (PHII) to improve surveillance for influenza-like illness through the deployment of Web 2.0 technologies built for the needs of "end users" – the myriad state and local public health authorities seeking ways to improve syndromic surveillance and situational awareness.

This effort began in 2006 with demonstration funding by the CDC, and was then scaled to a "proof-of-concept" with additional support from the Markle Foundation. The initiative aligned squarely with the 2006 Pandemic and All-Hazards Preparedness Act which called for HHS to "establish a near real-time electronic nationwide public health situational awareness capability through an interoperable network of systems."

Following the 2009 H1N1 outbreak, CDC leaders turned to this demonstration project as a low-cost capability ready for deployment to enable state and local public health departments to share aggregate-level data on influenza-like illness.

As of this hearing, DiSTRIBuTE has recruited 30 jurisdictions accounting for approximately 1,500+ emergency departments in the country, serving roughly a third of the nation's population. Another dozen jurisdictions have signed letters of intent and are working through the process to join. There are three key points in this case study:

1) *Voluntary Grassroots Participation:* Building on an existing network of 575 emergency departments sharing data with the CDC, the introduction of DiSTRIBuTE into a production system has added coverage for an additional 1,200 emergency departments in less than three months.
2) *Low "Cost to Acquire" Data:* The DiSTRIBuTE collaborative achieved this improved surveillance capability with less than a $3.5M investment.
3) *Unprecedented Public Transparency:* In addition to sharing detailed information with all other contributors through a private web portal, 27 of the 30 jurisdictions currently publish summary statistics for the public to view at www.isdsdistribute.org. We expect those numbers to grow significantly.

B. Open Standards: Enabling "Government as a Platform"

Regional Operations Platform – "Virtual USA": Since the formation of the Department of Homeland Security (DHS), enabling cross-jurisdictional information sharing has been among its top priorities. Hurricanes Katrina and Rita drew attention to the fact that current systems and tools are inadequate, marked by incompatible technology applications and costly data collection efforts that hinder the ability to unlock the true value of data sharing. In response, the DHS Science and Technology Directorate's (S&T) Command, Control and Interoperability Division (CCI) and First Responder Technologies (R-Tech) program have launched the Virtual USA initiative to create a scalable and replicable model for seamlessly integrating disparate data flows and

information management applications to enable effective multi-jurisdictional, multi-disciplinary emergency response and incident management operations.

Virtual USA is notable for its unique philosophy that the control of data remains with the locality or state that develops it. Virtual USA is a state-driven and Federally-supported initiative in that the Federal role is to contribute expertise and funding to help facilitate the exchange of information, while preserving and respecting information origins and the sovereignty of the states. Under the Virtual USA initiative, they remain fully in control of when to share it, what to share, with whom to share, and for what purposes, and responsible for ensuring data timeliness and accuracy. The Federal government also contributes enormously valuable data, such as weather information from National Oceanic and Atmospheric Administration (NOAA) and precise GPS locations of Federal assets.

To give you an idea of the kinds of life-saving results that are possible under the Virtual USA model, Virginia's enhanced information sharing capability achieved a 70 percent faster evacuation decision during a recent Nuclear Power Plant Exercise. Staff augmentation requirements at the Virginia Emergency Operations Center (VEOC) also fell by 50 percent because of the availability of situational awareness tools that facilitate a virtual response.

As of today, seven southeastern states (TX, LA, MS, AL, GA, FL, VA) and DHS have formalized agreements to integrate information sharing across all levels of government as part of the Regional Operations Platform Pilot (ROPP). While each jurisdiction retains its existing geospatial software, this collection of inexpensive data visualization tools enables public safety and emergency response agencies (local, state, tribal, and Federal) to share and visualize information in real time -- e.g., weather and traffic conditions; the location and operational status of power and water lines, flood detectors, helicopter-capable landing sites, emergency vehicle and ambulance locations, evacuation routes; school and government building floor plans; and links to IP-enabled camera feeds. The

ultimate result is for information to flow to those who need it, to save lives, and protect property.

C. Prizes and Competitions: Aligning Innovation to National Priorities

DARPA Network Challenge: On October 29th, 2009, DARPA announced the "Network Challenge" competition to mark the 40th anniversary of the Internet. Building on a strategy born in 2004 to uncover new ideas and innovators, DARPA offered $40,000 to the first person (or team) to successfully report the longitude and latitude of ten large red balloons located all across the country.

The winning team hailed from MIT as a group of researchers studying the role of social networks in spreading information. To prepare for the effort, the MIT Team launched an "all-hands-on-deck" recruitment model whereby the first person successfully reporting one balloon's coordinates would be rewarded with $2,000. In the spirit of social networking, the person responsible for inviting the spotter would earn $1,000, and whoever invited them would earn $500, and whoever invited them would earn $250. To add a sweetener, the MIT team offered the remaining $250 per balloon as a donation to charity, leaving none for them!

Bottom line – DARPA planned to leave the contest "open" for seven days, but the MIT team successfully reported all 10 balloons in less than nine hours, calling on leads from 4,665 recruited members. And many of the nearly 500 competing teams were close behind. It is hard to imagine accomplishing this task without the emerging technologies that have fundamentally changed the way we all live and work. Most importantly, for a small investment, DARPA obtained a treasure trove of useful, real-world data about how self-organizing, Internet-enabled social networks succeeded (and failed) to solve a problem of wide geographic distribution.

III. STRATEGY FOR AMERICAN INNOVATION

Grand Challenges: On September 21st, 2009, President Obama released his Strategy for American Innovation to achieve sustainable economic growth and quality jobs. Renewing his commitment to science, technology and innovation, the President called for a set of "grand challenges" to improve our quality of life and serve as the foundation for the jobs of future. Such challenges might include:

- Solar cells as cheap as paint, and green buildings that produce all of the energy they consume;
- A lightweight vest for soldiers and police officers that can stop an armor-piercing bullet; and
- Intelligent prosthetics that will allow a veteran who has lost both of his arms to play the piano again.

Achieving these results will require unprecedented collaboration between the public, private, non-profit and academic sectors. We intend to fully harness the power and potential of technology and innovation to advance a set of challenges.

In conclusion, under President Obama's leadership in calling for a government that works, we are focused on the transformative power of technology and innovation to deliver results at lower costs while improving service. In collaboration with your Task Force on Government Performance, we look forward to building on this foundation and institutionalizing a government-wide system of data-driven performance.

I welcome any questions that the Committee may have.