Building a Future for Technological Innovation

August 17th, 2010

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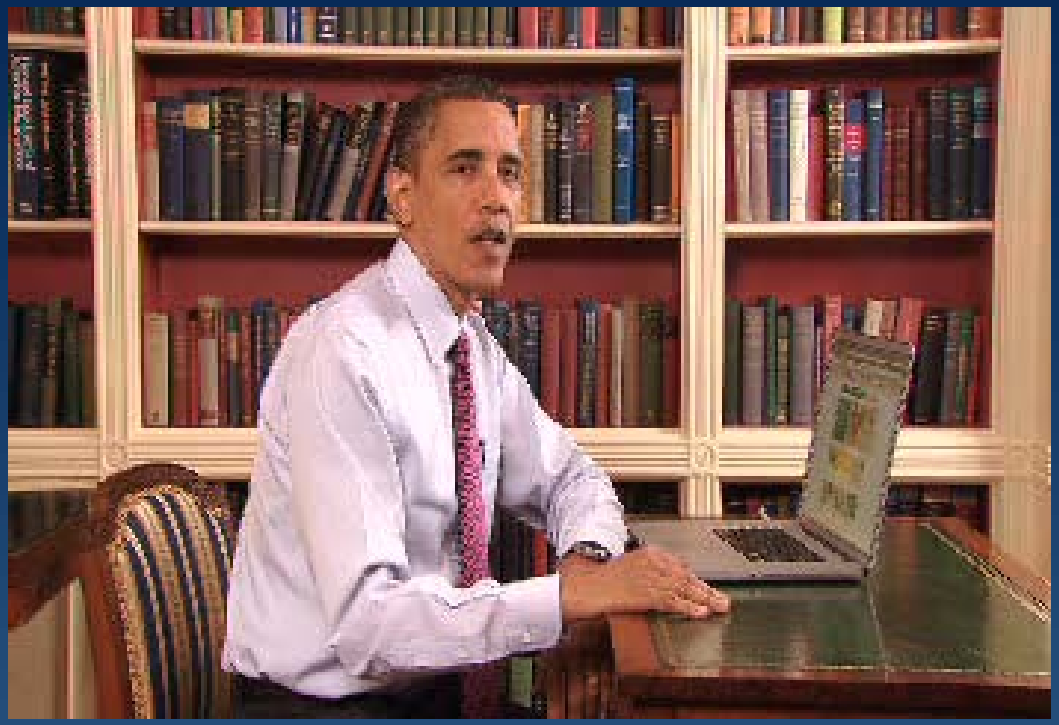
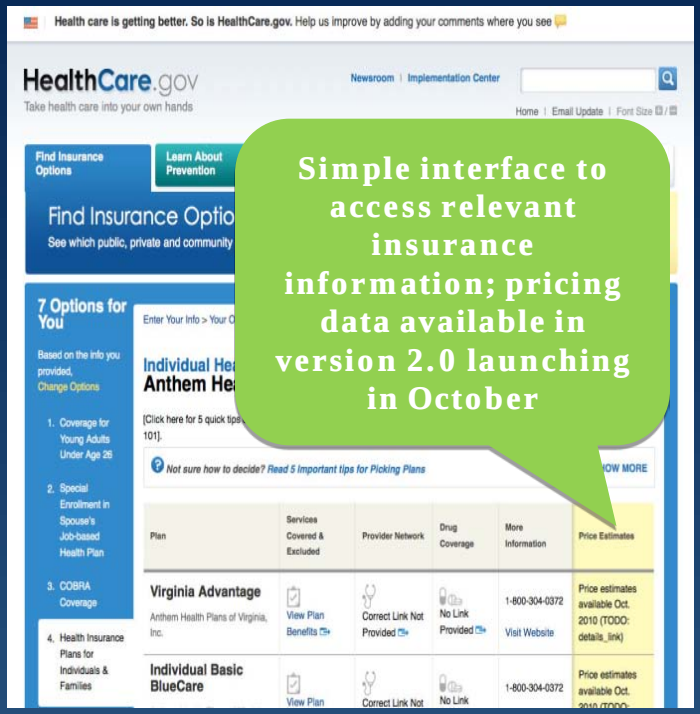
White House Office of Science & Technology Policy

A Presidential Commitment to Technology

Healthcare.gov a Model for Simplifying Access to Information





"My Administration is committed to creating an unprecedented level of openness in Government…and establish a system of transparency, public participation, and collaboration."

–President Barack Obama, Jan 21st, 2009

Source: www.healthcare.gov; www.whitehouse.gov/open

A Focus on Strengthening Global Competitiveness

Harnessing Technology, Data, Innovation for Growth, Empowerment

Innovation Trend

Rank	Country	Change Score (1999–2009)
1	China	19.5
2	Singapore	19.0
3	Lithuania	14.8
4	Estonia	
5	Denmark	
6	Luxembou	
7	Slovenia	16.7
40	U.S.	2.7

2010 UN Index rankings jumped from fourth (in 2008) to second

E-Government

Rank	Country	Percent Change (2005–2008)
1	China	21%
2	Spain	20%
	France	16%
	Russia	
	EU-10	
	S. Korea	
	Japan	
22	U.S.	-7%

American Graduation Initiative calls for return to #1 by 2020

Higher Education

Rank	Country	Percent Change (1999–2005)
1	Poland	117%
2	S. Korea	46%
3	Ireland	41%
	Australia	31%
	UK	30%
	EU-25	27%
	France	26%
15	U.S.	3%

Source: ITIF Report "The Atlantic Century", February, 2009; United Nations E-Government Survey 2010
www.whitehouse.gov

President's Strategy for American Innovation

Tech Role in Innovation for Sustainable Growth and Quality Jobs

Open Government Initiative focused on empowering everyday Americans

Smart Grid and Health IT Apps innovation efforts underway

Cloud Computing and Mobility as platforms for growth

Catalyze Breakthroughs for National Priorities

- Unleash a clean energy revolution
- Support advanced vehicle technology
- Drive breakthroughs in health IT
- Address scientific "grand challenges"

Promote Competitive Markets that Spur Productive Entrepreneurship

- Promote American exports
- Support open capital markets that allocate resources to the most promising ideas
- Encourage high-growth and innovation-based entrepreneurship
- Improve public sector innovation and support community innovation

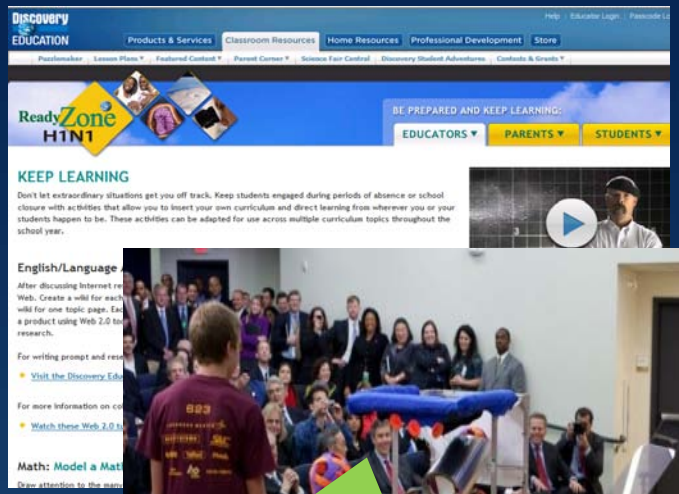
Invest in the Building Blocks of American Innovation

- Restore American leadership in fundamental research
- Educate the next generation with 21st century knowledge and skills; create a world-class workforce
- Build a leading physical infrastructure
- Develop an advanced information technology ecosystem

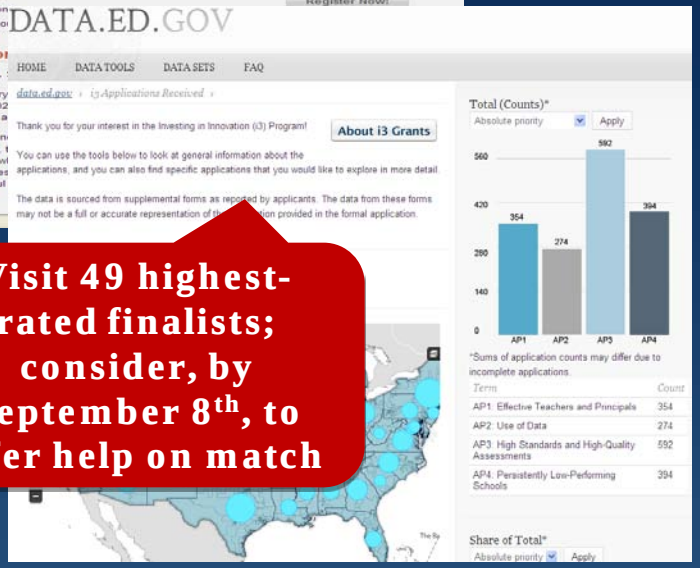
Source: http://www.whitehouse.gov/administration/eop/nec/reports

“From Compliance to Innovation”

Delivering Platforms for Educational Innovation Every 90 Days



STEM education a critical priority across portfolio



Visit 49 highest-rated finalists; consider, by September 8th, to offer help on match

“To meet the President’s goals -- to reach the finish line -- we need transformational change. The islands of excellence that now exist in school districts have to become the norm…In a word, America’s schools need innovation.”

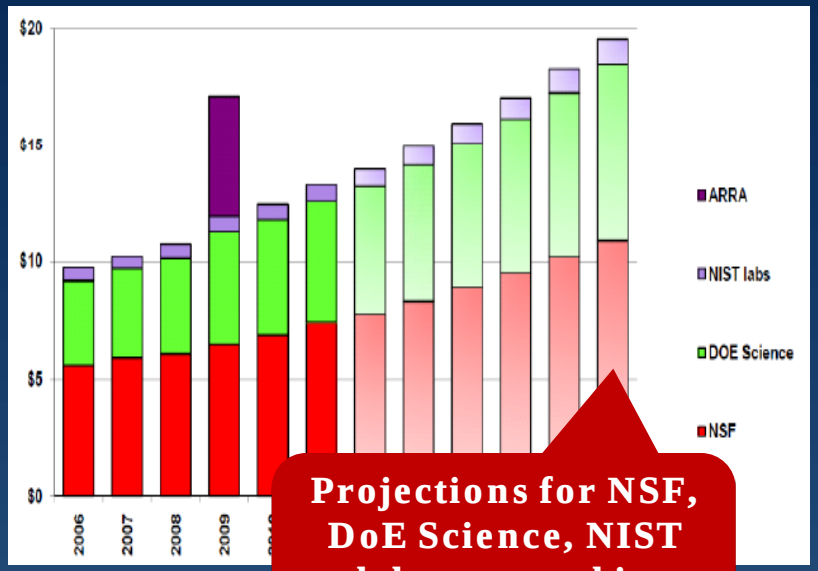
- Secretary Arne Duncan, Aug 20, 2009

Source: http://www.discoveryeducation.com/readyZone-h1n1/educators-keep-learning.cfm; https://innovation.ed.gov/ ; http://data.ed.gov ; http://www.whitehouse.gov/issues/education/educate-innovate

Investments in R&D Spur Jobs of the Future

PITAC Inaugural Meeting on Innovations in the "Golden Triangle"

"Doubling" R&D Commitment



Projections for NSF, DoE Science, NIST labs as noted in FY11 budget

PITAC Public Hearing

"What are the critical infrastructures that only government can help provide that are needed to enable creation of new bio, nano, and IT products and innovations that will lead to new jobs and greater GDP?"

"...support R&D in advanced manufacturing to strengthen U.S. leadership in the areas of robotics, cyber-physical systems, and flexible manufacturing."

–OMB-OSTP FY 12 Budget Memo, 7/21/10

Source: FY2011 Introduced Budget;FY2012 Holdren-Orszag Budget Memo; http://www.whitehouse.gov/blog/2010/06/15/polishing-technology-s-golden-triangle

Unleashing a Mobile Broadband Revolution

Presidential Commitment to (Nearly) Double Available Spectrum

Spectrum Initiative in Brief

#1: Identify and plan for the release of 500 MHz of spectrum

#2: Provide new tools and new incentives to free up spectrum

#3: Redeploy the spectrum to high-value uses

#4: Use the auction proceeds to promote public safety and job-creating infrastructure investment

Commerce Dept report due by 10/10 on timetable for freeing up spectrum for exclusive or shared use; CTO focus on advanced sharing technologies

***Innovations*: Text4baby partnership serves 60,000+ moms since 02/10 launch**

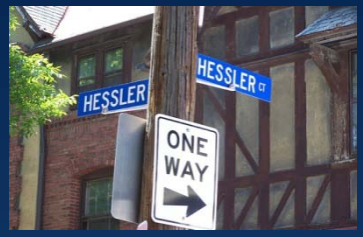
Source: http://www.whitehouse.gov/administration/eop/nec/speeches/technological-opportunities-job-creation-economic-growth

“Beta Block” R&D Initiative to Connect Neighbors

Internally Funded Effort to Deliver 1 Gbs to Poorest Homes

Case Western Project in Brief

- Launched in November 2009
- Case Western Reserve University collaborative includes 40+ partners, 100+ household gigabit network
- R&D effort, with private sector stakeholder support, to spur innovation in poor communities “next door”
- Program metrics and goals set to measure changes related to:
  - Neighborhood Safety
  - Health and Wellness
  - STEM Education
  - Energy Sustainability



Energy Sustainability

Graduation Rates

Chronic Disease

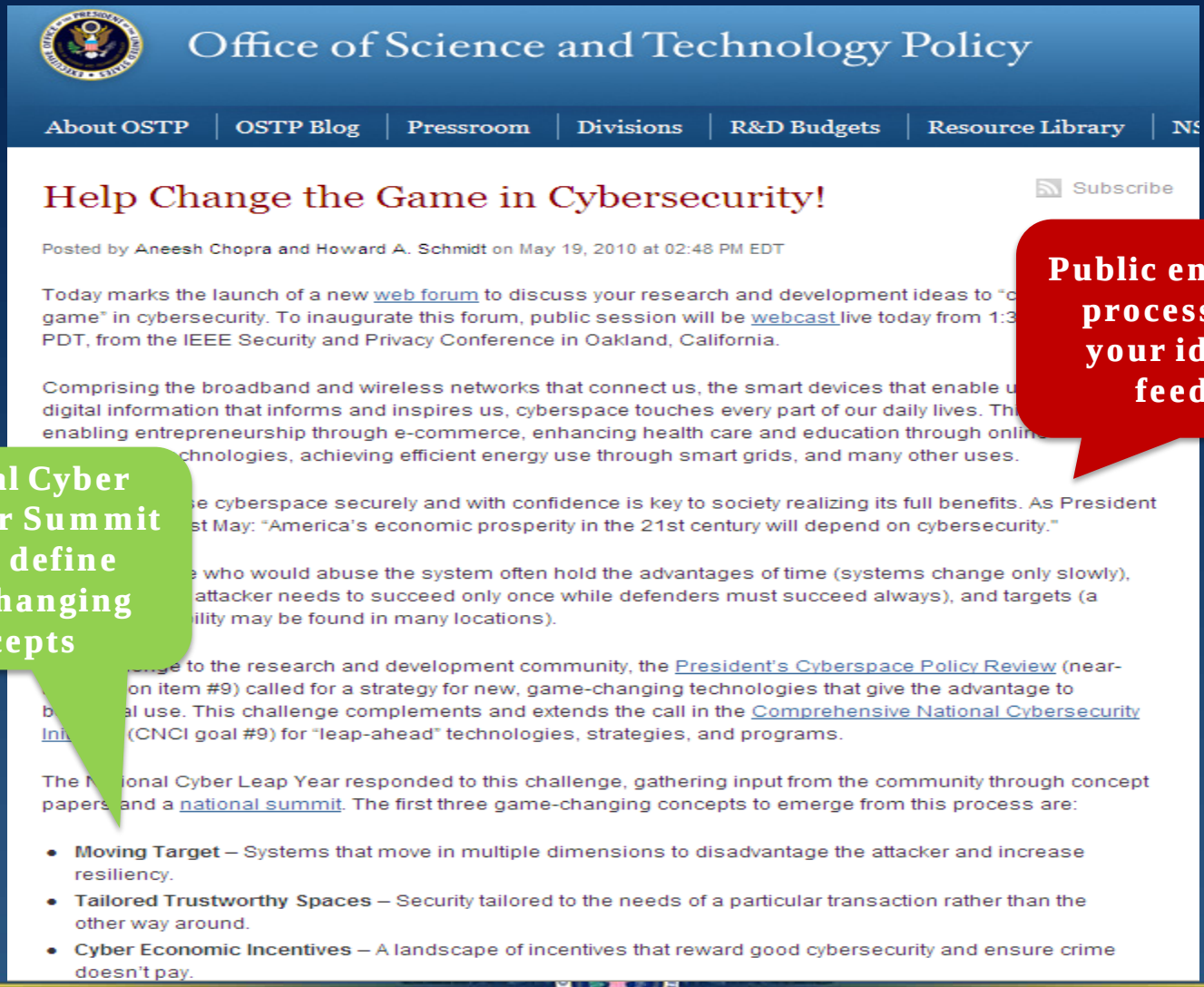
Safety

Leverages ultra-high speed broadband networks

Source: http://blog.case.edu/lev.gonick/2009/11/17/new_gold_standard_for_smart_connected_communities_case_western_reserve_university_announces_1000_mbsec_fiber_to_the_home_research_project

In Pursuit of "Game Changers" in Cybersecurity

Public Input Key to Moving "Leap-Ahead" Technologies Forward



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Help Change the Game in Cybersecurity!

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Posted by Aneesh Chopra and Howard A. Schmidt on May 19, 2010 at 02:48 PM EDT

Today marks the launch of a new web forum to discuss your research and development ideas to "c
game" in cybersecurity. To inaugurate this forum, public session will be webcast live today from 1:3
PDT, from the IEEE Security and Privacy Conference in Oakland, California.

Comprising the broadband and wireless networks that connect us, the smart devices that enable u
digital information that informs and inspires us, cyberspace touches every part of our daily lives. Th
enabling entrepreneurship through e-commerce, enhancing health care and education through onlin
chnologies, achieving efficient energy use through smart grids, and many other uses.

e cyberspace securely and with confidence is key to society realizing its full benefits. As President
st May: "America's economic prosperity in the 21st century will depend on cybersecurity."

e who would abuse the system often hold the advantages of time (systems change only slowly),
attacker needs to succeed only once while defenders must succeed always), and targets (a
ility may be found in many locations).

ge to the research and development community, the President's Cyberspace Policy Review (near-
on item #9) called for a strategy for new, game-changing technologies that give the advantage to
l use. This challenge complements and extends the call in the Comprehensive National Cybersecurity
Ini (CNCI goal #9) for "leap-ahead" technologies, strategies, and programs.

The N ional Cyber Leap Year responded to this challenge, gathering input from the community through concept
papers and a national summit. The first three game-changing concepts to emerge from this process are:

- **Moving Target** – Systems that move in multiple dimensions to disadvantage the attacker and increase resiliency.
- **Tailored Trustworthy Spaces** – Security tailored to the needs of a particular transaction rather than the other way around.
- **Cyber Economic Incentives** – A landscape of incentives that reward good cybersecurity and ensure crime doesn't pay.

Public engagement process invited your ideas and feedback

National Cyber Leap Year Summit helped define game-changing concepts

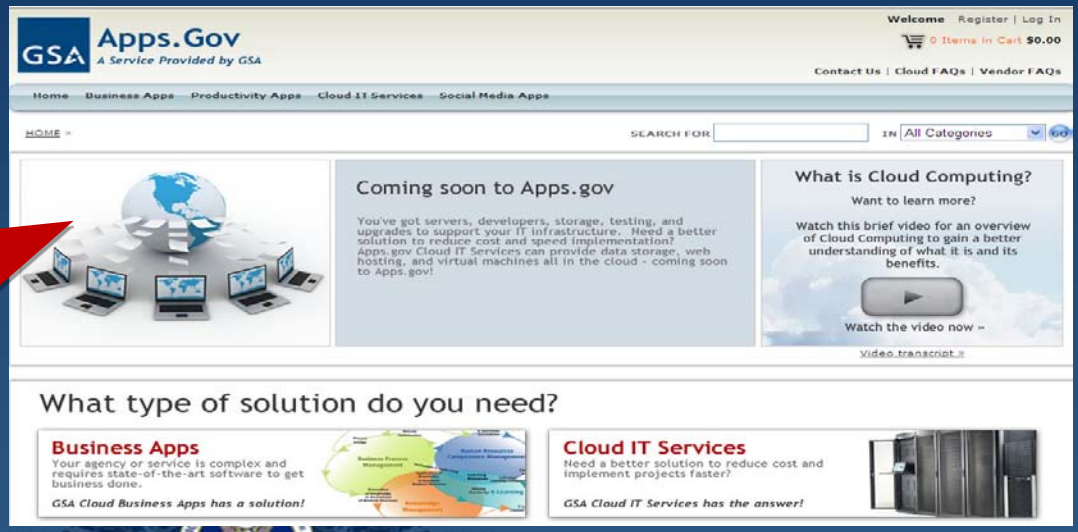
Source: http://www.whitehouse.gov/administration/eop/ostp/blog?page=2

From R&D to Public Sector Innovation

Cloud +Mobility an Opportunity for Economic Growth, Efficiency

$15+M in NSF research awards supporting cloud partnerships with Google, Microsoft, Yahoo, IBM, HP, Intel

Innovations: **Dramatically lower storage costs; bandwidth; and processing power enable game-changing apps**



Source: www.apps.gov & National Science Foundation; Monica Lam

Anatomy of an Open Government Ecosystem

HHS Launches Community Health Data Initiative (CHDI)

Source: Community Health Data Initiative, Department of Health & Human Services; www.hhs.gov/open

Helping Our Children Make Healthier Choices

Prizes Policy Spurs USDA to Reward Apps Developers

95 qualified apps built on data that feeds USDA site – judges include Zynga's CEO, "Woz", GE's *Healthymagination* lead

***Sample App:* Smash Your Food™ lets children see foods explode - while learning how much sugar, salt and oil are in them**

"The Apps for Healthy Kids competition challenges... the most creative, talented, and kid-savvy innovators across the country to build games that inspire and empower kids to get active and eat healthy." –First Lady Michelle Obama, March 11th, 2010

Source: www.appsforhealthykids.com; http://www.healthgameschallenge.org/ ; http://apps.usa.gov/myfood-a-pedia/

“All Hands” - Health 2.0 Developer Challenge

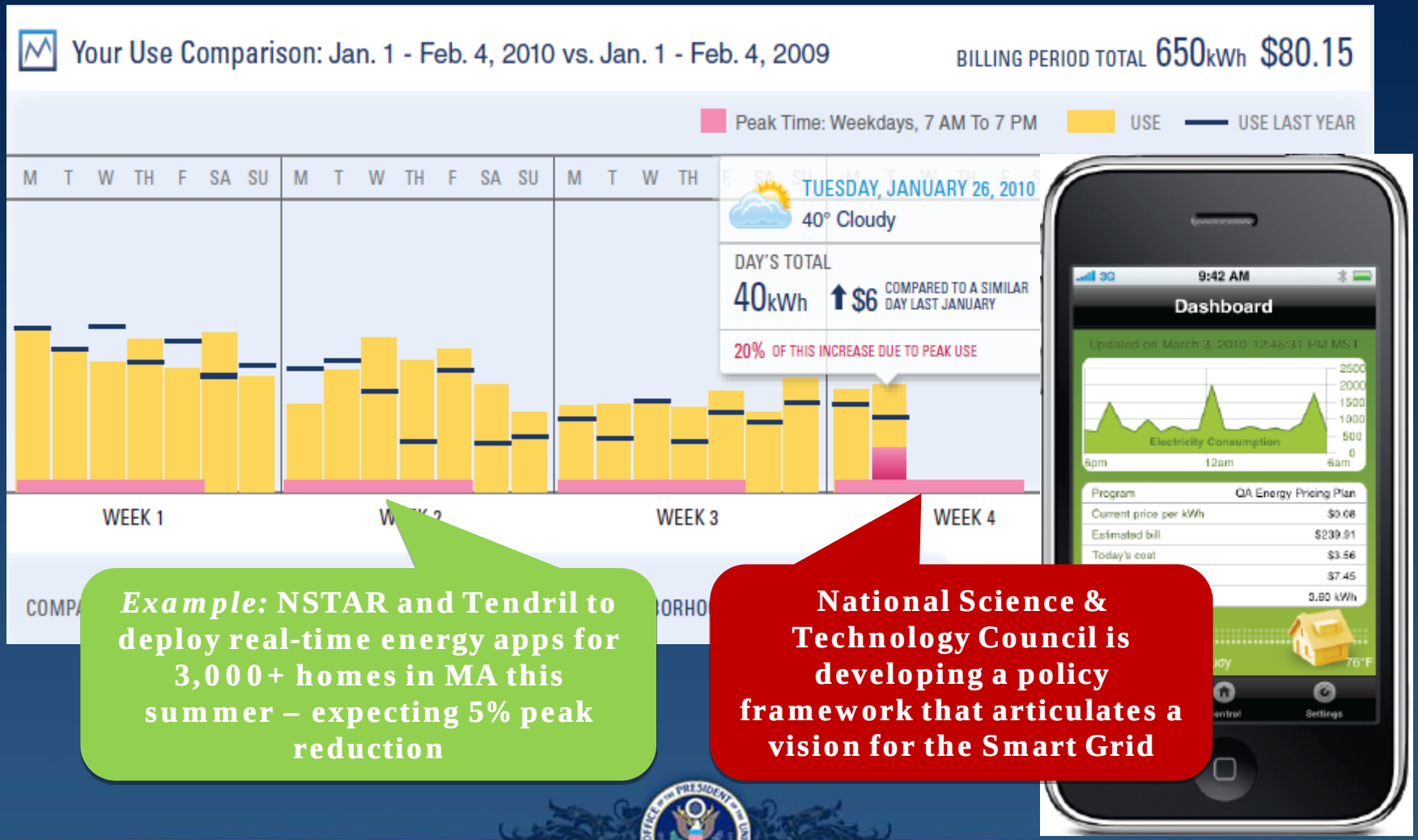
A growing number of “challenges” leading up to Health IT Innovation Week – October 3-10th, 2010

WWHI catalyzes innovation - $10K for a personalized wireless health ecosystem; sponsors “Innovation Day”– highlighting Veterans Healthcare (VAi2) – 10/12/10

Source: www.health2challenge.org

The Smart Grid Opportunity

Recovery Act Leveraged to Support 100 Projects Valued at $10+BN



Example: **NSTAR and Tendril to deploy real-time energy apps for 3,000+ homes in MA this summer – expecting 5% peak reduction**

National Science & Technology Council is developing a policy framework that articulates a vision for the Smart Grid

Source: smartgrid.gov; NSTAR, Tendril

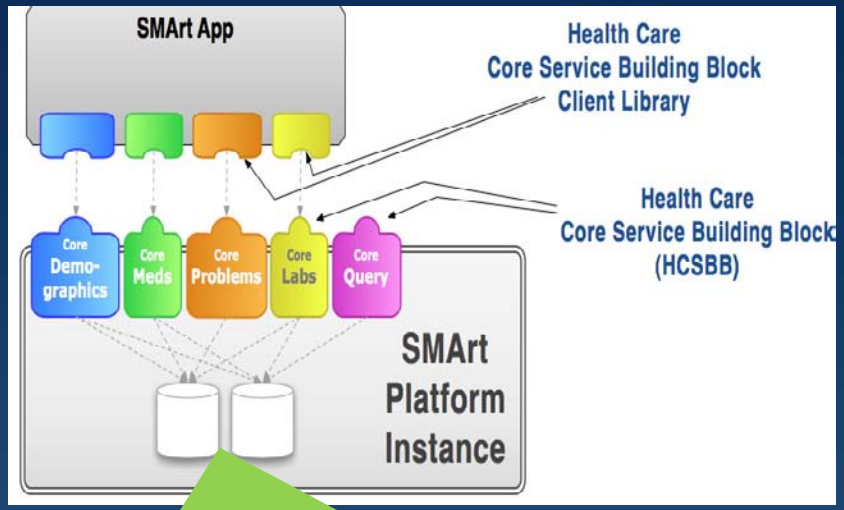
A Commitment to Drive Innovation in Health IT

Open Collaborations to Catalyze Breakthroughs in Apps, Exchange

NHIN Direct Project in Brief

"A set of policies, standards and services that enable the Internet to be used for secure and meaningful exchange of health information to improve health and health care" – Tech Specs by June, Implementations by October, 2010

SHARP Grantee - SMArt Apps

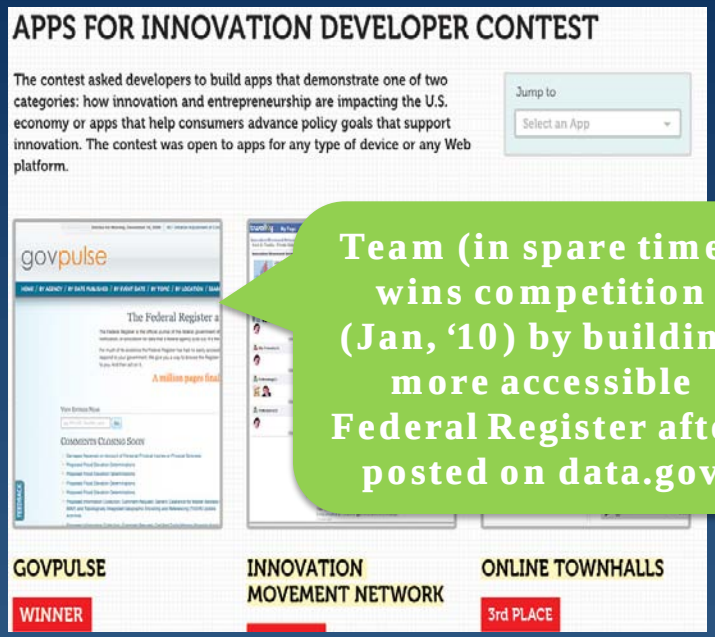


Harvard researchers focused on health platforms (like Indivo) to support substitutable apps – prototypes by 2011; aligned with "modular" certification for "meaningful use"

Source: www.nhindirect.org; Office of the National Coordinator for Health IT – SHARP program

Putting it Altogether: Entrepreneurs are Welcome

Bob, Dave, Andrew Embody Spirit of (Near) Frictionless Participation



Team (in spare time) wins competition (Jan, '10) by building more accessible Federal Register after posted on data.gov

Inspires AOTUS (March, '10) to designate team as lead designers for modernized "daily newspaper of the federal government"

Source: www.federalregister.gov; www.innovationmovement.org; www.wested.org