

EXECUTIVE OFFICE OF THE PRESIDENT
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
Technology, Office of Science & Technology Policy

SUBJECT: Open Innovator's Toolkit

On June 8, 2011, I wrote to you describing the Administration's approach to "[open innovation](#)" – tapping citizen expertise to make government smarter and more responsive to private sector demands. This note builds upon those ideas and introduces a new online resource – the "[Open Innovator's Toolkit](#)" that catalogs the portfolio of additional policy tools deployed by agency leaders seeking to spur innovation in government within existing authorities.

Background

On his first day in office, President Obama directed the newly created position of "Chief Technology Officer" to provide recommendations on his [Memorandum on Transparency and Open Government](#). Fulfilling a campaign commitment, he designated the position as an Assistant to the President and member of both the [National Economic](#) and [Domestic Policy Councils](#) to help the country meet its goals from [job creation, to reducing health care costs, to protecting the homeland](#).

In his [remarks](#) announcing the "[Strategy for American Innovation](#)"¹, President Obama said, "That's why I've appointed the first-ever chief technology officer, charged with looking at ways technology can spur innovations that help government do a better and more efficient job."

It is a task we've seen deployed effectively across our nation's most innovative companies – Procter & Gamble's "Connect+Develop" strategy to source 50% of its innovations from the outside; Amazon's "Just Do It" awards to celebrate innovative ideas from within; and Facebook's "Development Platform" that generated an estimated 180,000 jobs in 2011 focused on growing the economy while returning benefits to Facebook in the process.²

Despite access to the same technologies applied by these innovators, our government had historically failed to tap into the expertise of the American people to help solve our nation's biggest challenges. But thanks to your hard work, we're on the innovative path. Together, we've begun expanding the available options for policymakers by:

¹"President Obama Lays Out Strategy for American Innovation", accessed on www.whitehouse.gov, (September 21, 2009).

²"The Facebook App Economy," Il-Horn Hann, Siva Viswanathan and Byungwan Koh, University of Maryland, September 2011

- Moving beyond data “by request” to “computer-friendly by default;”
- Engaging not just as “regulator” but as “impatient convener;”
- Adding the ability to pay for outcomes through “prizes” not just “procurements;”
- Attracting “top talent” including “entrepreneurs-in-residence.”

The techniques we’ve deployed along the way have empowered innovators, consumers, and policymakers at all levels to better use technology, data, and innovation. We’ve demonstrated that “open innovation,” the crowdsourcing of citizen expertise to enhance government innovation, delivers real results. Fundamentally, we believe that the American people, when equipped with the right tools, can solve many problems that the government itself cannot address.

Making the federal government operate with the same dynamism as America's most successful technology companies is still a work in progress. To help scale what has worked, we’ve summarized 20 leading practices, associated case studies and policies, accessible online at www.whitehouse.gov/open/toolkit in an “Open Innovator’s Toolkit.” We invite your feedback and suggestions to make innovation a permanent characteristic of the United States government.

Open Innovator’s Toolkit

America’s journey to economic growth will, in part, derive from jobs and industries of the future. The public and regulated sectors of the economy – areas like health IT, learning technologies, and smart grid – have the capacity to grow jobs if they can deliver meaningful productivity growth. And given [early feedback](#) from the President’s Export Initiative, many of these solutions have global appeal. To paraphrase Commerce Secretary Bryson, if we can solve it here, we can sell it everywhere.

Rather than pursue traditional “top-down” models to spur breakthroughs in these areas of national importance, President Obama emphasizes a “bottom-up” philosophy that taps into the expertise of the American people. This philosophy of “open innovation” has already delivered tangible results in each of these fields, and has surfaced new or improved policy tools deployed by our government to achieve them. We’ve collected 20 leading practices that an “open innovator” should consider when confronting any policy challenge – at any level of government. Our aspiration is to build upon this list, adding new tools and case studies to form an evidence base that will help to scale “open innovation” across the public sector. They are organized into the following four categories:

Opening Data for Innovators and Entrepreneurs

#1: Data.gov Communities: a web-based catalog of existing government datasets that – when released in computer-friendly formats, could help to measure outcomes in a given sector; the goal is to catalyze a grassroots movement through the promotion of high-value data, challenges and prize opportunities, and relevant policy.

- Case: [Health Data Initiative](#); [Health Indicators Warehouse](#)
- Related policy: [U.S. National Action Plan for Open Government](#); [Availability of Medicare Data for Performance Measurement](#)

#2: *Smart Disclosure*: a regulatory approach that directs industry disclosure to be in computer-friendly formats simplifying re-use by the private sector; the goal is to emphasize the “re-use” of information disclosure to fuel “apps” or other new products and services.

- Case: [College Scorecard](#); [Healthcare.gov](#)
- Related policy: [Memorandum on Informing Consumers on Smart Disclosure](#)

#3: *“MyData” Download Service*: a technical method for data holders to make it easier for individuals to have secure, timely, and computer-friendly access to their own information in human and computer-friendly form; the goal is to scale a simple, cost-effective method to liberate personal data that could seed new products or services powered by an “upload” feature.

- Case: [Blue Button](#), [Green Button](#)
- Related policy: [Consumer Data Access](#), [Unlocking Education Data](#)

#4: *21st Century Infrastructure Permitting Dashboard*: a website that shines light on decisions affecting 21st century infrastructure projects, including goals for turnaround times at critical milestones, results data, and the designation of an accountable senior official, especially in circumstances when private sector capital is driving the project.

- Case: [NextGen Infrastructure Initiative](#); [NextGen Procedures Dashboard](#)
- Related policy: [Optimization of the Airspace and Procedures in Metroplex](#)

#5: *“What Works” Clearinghouse*: a web-based catalog of projects, including data, cost-benefit analyses, evaluation studies, and related content to assist regulators at all levels of government when evaluating capital projects, with emphasis on accelerating what works and minimizing the need for duplicative analysis.

- Case: [SmartGrid.gov](#)
- Related policy: [A Policy Framework for a 21st Century Grid](#)

Acting as “Impatient Convener”

#6: *Standards Engagement Principles*: the adoption of a set of guiding principles to engage in a convening role together with private sector standardization organizations to address a national priority; the goal is to engage the private sector early when identifying technology, regulatory, and/or procurement objectives in priority areas.

- Case: [Direct Project](#); [Health IT S&I Framework](#)
- Related policy: [Memorandum for Principles Federal Engagement in Standards Activities to Address National Priorities](#)

#7: *Policy Principles*: the adoption of a set of guiding principles or “rules of the road” that government can apply when undertaking specific regulatory actions or when confronting emerging technologies for which the regulatory framework is less specified.

- Case: [“The Consumer Privacy Bill of Rights”](#)
- Related Policy: [Internet Policymaking Principles; 21st Century Statecraft](#)

#8: *Private Sector Open Innovation Showcase*: a venue to shine light on innovative new or improved products and services fueled, in part, by open government data; goal to motivate participation – demonstrating apps or committing to take action – by a date certain.

- Case: [“Apps for Heroes”](#)
- Related policy: [Health Data Initiative \(HDI\) Forum](#)

#9: *21st Century Infrastructure Design*: a blueprint for modern infrastructure balancing the potential of frontier technologies with what is achievable with active public sector leadership; goal to attract leading industry CTOs, academics, policy makers, and other stakeholders to define desired features of modern infrastructure, and assess policy tools to achieve them.

- Case: VCAT Report on [“Desirable Properties of a National Public Safety Network”](#)
- Related policy: PCAST Report on [“Realizing the Full Potential of Health Information Technology to Improve Healthcare for Americans: The Path Forward”](#)

Initiating Prizes, Challenges and Competitions

#10: *“Race to the Top” Competition*: an incentive program that compels the adoption of “best practice” policies as a condition to compete for funding; the goal is to unlock policy barriers to innovation absent explicit legislative mandate.

- Case: [Race to the Rooftop](#)
- Related policy: [SunShot Initiative; Race to the Top](#)

#11: *Staged Innovation Funds*: an open solicitation for partners from the private sector, entrepreneurs, NGOs and academia to propose solutions that have the potential to scale in solving global development challenges with funding contingent upon achieving key milestones at each stage (proof of concept, testing/validation, replication and scaling); the goal is to maximize taxpayer investment by “failing fast” if necessary and scaling only with evidence.

- Case: [USAID Development Innovation Ventures](#)
- Related policy: [The Quadrennial Diplomacy and Development Review](#); [The Presidential Policy Directive on Global Development](#)

#12: *Inducement Prizes*: an approach that invites many, or a crowd, to serve as a source of novel solutions to mission-critical problems from innovators, entrepreneurs, and citizen solvers by offering cash prizes and targeted non-monetary incentives; the goal is to reap the benefit of disruptive innovation by increasing the number and diversity of minds tackling the problem,

articulating a goal without selecting the team or approach most likely to succeed, and paying only for results.

- Case: [Air Force Research Laboratory Vehicle Stopper Challenge](#); [Mapping Dark Matter Competition](#); [Blue Button for All Americans Challenge](#)
- Related policy: [Strategy for American Innovation](#); [Prize Authority in the America COMPETES Act](#); [Center of Excellence for Collaborative Innovation](#)

#13: Private Sector Open Innovation Challenge: a venue to increase engagement in private sector-sponsored challenges linked to open government data; the goal is to inspire greater participation among leading private sector firms and to increase the success rate of such challenges.

- Case: [Data Diabetes Design Challenge](#)
- Related policy: [Challenge2Innovate](#)

#14: “All Hands on Deck” Challenge: a “21st Century” application of the bully-pulpit to call for public or private sector action in furtherance of a policy priority; the goal is to leverage senior leader “announcements” to spur voluntary commitments.

- Case: [Veterans Job Bank](#), [Summer Jobs+](#)
- Related policy: [Social Innovation Partnerships](#)

#15: Government Application Platform: an acquisition model that leverages open programming interfaces to shift payment from the best written RFP responses to the most effective prototypes that actually work; the goal is to dramatically simplify procurement, expand participation, and save taxpayer funds by paying for results

- Case: VISTA and [OSEHRA](#)
- Related policy: [Electronic Health Record VHA-Wide Medical Scheduling RFI](#)

Attracting Top Talent at the Intersection of Technology and Policy

#16: “Top Talent” Flexible Recruitment: explicit authority to hire world-class specialists to initiate mission-driven innovation activity by defining frontier problems and stretch goals for innovators and entrepreneurs; agencies; the goal is to authorize hiring outside of the traditional recruitment channels and empower them to convene expert workshops to pressure-test assumptions.

- Case: [ARPA-e Program Directors](#)
- Related Policy: [Department of Energy \(DOE\) “SunShot” Fellows](#)

#17: *Entrepreneurs-in-Residence*: a time-limited recruitment of world-class entrepreneurs and innovators to join highly-qualified internal employees in the development of new operational procedures in areas that impact innovation; the goal is to deliver transformational change by combining the best internal and external talent in testing, validating and scaling what works.

- Case: The [Food and Drug Administration](#) (FDA) Entrepreneur-in-Residence program
- Related Policy: [United States Citizenship and Immigration Service's](#) (USCIS) Entrepreneur-in-Residence programs

#18: *“Lean Government Startup” Teams*: A team empowered to use hypothesis-driven, incremental steps with “build, measure, learn” feedback loops; the goal is to “fail fast,” when prototyping solutions that meet user needs and capture data from user experience, leading to the scale-up of only the strongest ideas.

- Case: “[Know Before You Owe](#)”; [Business.USA.gov](#)
- Related policy: [“Lean Government Startup” Culture](#)

#19: *“Second Shot” Review Rebuttal*: A mechanism to increase peer review quality and program manager effectiveness by enabling proposers to respond to specific review comments before final award selection; the goal is to allow for *symmetrical* information sharing between applicants and decision-makers to improve understanding of technology risk, increase transparency, and promote better decision-making on part of the government.

- Case: [ARPA-e Proposal Rebuttal Phase](#)
- Related policy: [Invest in Innovation Fund “Highest Rated” Database](#)

#20: *Innovator Recognition Awards*: an approach by senior leadership to promote and encourage a culture of innovation; the goal is to motivate career civil servants that often see more “downside” and less “upside” to collaborate with the private or non-profit sectors on a new idea not explicitly directed in statute or executive action.

- Case: [HHS Innovates](#)
- Related policy: [SAVE Award](#)