

Challenge.gov: Using Competitions and Awards to Spur Innovation

By Dr. Kevin C. Desouza

Over the past three years, the Obama administration has been encouraging federal agencies to engage citizens in solving public problems by increasing the use of electronic participation platforms. The America COMPETES Act—adopted in 2010—provides statutory support for conducting public contests and providing awards to winners. The Office of Management and Budget issued a memorandum in March 2010 on agencies' use of challenges and prizes to provide agencies with more guidance on how to conduct such initiatives.

One of the most prominent approaches to engaging citizens has been the creation of the government-wide website, Challenge.gov. Launched in September 2010, the website presents information on 199 competitions held from its creation until August 2012, when this report went to press. This cross-agency site is a one-stop platform that includes all the contests sponsored by federal agencies and their partners. These competitions range from those with large prizes and ambitious goals, such as the development of autonomously operated vehicles for the Defense Department, to those with smaller prizes targeted to smaller challenges such as the creation of an app to track the arrival status of local buses.

Using Competitions to Spur Innovation

Competitions use monetary and non-monetary awards as incentives to drive participation in solving public problems. There is a rich history of using prizes to spur achievement and recognize excellence. The private sector has long realized the value of sourcing ideas and solutions from outside the organization.

There have been several private-sector competition platforms. One of the most well-known is InnoCentive, the competition crowdsourcing platform of choice for organizations such as Procter & Gamble and the National Aeronautics and Space Administration to find innovative solutions to problems. InnoCentive's competitions and awards—open to a wide range of participants—have led to notable solutions such as dealing

with oil spill recovery and developing a simpler manufacturing process for drugs fighting tuberculosis. The solution for the latter came from a scientist in India, and the former from a citizen whose expertise was in the concrete industry. For a detailed analysis of the role of prizes in industry and government, see Luciano Kay's 2010 report for the IBM Center.

Competitions have several valuable features that make them ideal for solving problems. First, through a prize, organizations have the ability to leverage limited resources better than they could through traditional mechanisms (e.g., contracts). For example, the Ansari X PRIZE awarded \$10 million to the winning team. The X PRIZE Foundation was able to leverage its investment 40:1, with teams investing over \$100 million and with \$1.5 billion in public and private expenditure to support the private space flight industry.

Second, competitions allow for the hedging of risks—you only have to pay the winner.

Third, competitions allow for the leveraging of collective intelligence. Collective intelligence helps source solutions from the masses rather than a select few experts. When prizes are announced and participation is open, seldom do the winners originate from the "usual suspects."

Fourth, through competitions, public agencies can draw attention to causes. For example, First Lady Michelle Obama held a competition to develop Apps for Healthy Kids as part of the Let's Move! campaign that is drawing attention to the issue of childhood obesity in the U.S.

And finally, today, advanced information and communication technologies are enabling engagement of a wider audience for competitions without the traditional constraints (e.g., geography). For all of the above reasons, competitions allow government to empower citizens as co-creators of solutions to address problems, and even to participate in the realization of opportunities.



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Implementing a Challenge

After nearly two years of operation, what can be learned about the use of Challenge.gov, the government-wide platform created for agencies to conduct contests and awards? What types of challenges are undertaken on that site versus other sites? Which agencies use it the most? What kinds of prizes are awarded?

There are a number of key steps that federal agencies must undertake before launching a competition on Challenge.gov. These steps involve:

- Identifying and assessing the problem
- Describing the desired solution
- Selecting the target audience
- Developing criteria for judging
- Setting milestones



DARPA Shredder Challenge

(Defense Advanced Research Projects Agency, Department of Defense)

Description of Competition: DARPA's Shredder Challenge calls upon computer scientists, puzzle enthusiasts and anyone else who likes solving complex problems to compete in the challenge by piecing together a series of shredded documents. The goal is to identify and assess potential capabilities that could be used by our warfighters operating in war zones, but might also create vulnerabilities to sensitive information that is protected through our own shredding practices throughout the U.S. national security community. Presently, a variety of techniques exist for reconstructing shredded documents including manual assembly, fully automated (computerized) algorithms and hybrid operator-assisted approaches.

Monetary Prize: \$50,000

Number of Submissions: 9,000

Dates of Competition: October 27, 2011 to December 2, 2011

Winner (\$50,000): A small San Francisco-based team correctly reconstructed each of the five challenge documents and solved their associated puzzles. The "All Your Shreds Are Belong to U.S." team used custom-coded, computer-vision algorithms to suggest fragment pairings to human assemblers for verification. In total, the winning team spent nearly 600 man-hours developing algorithms and piecing together documents that were shredded into more than 10,000 pieces.

Competitions for Local Government

The Bloomberg Philanthropies, supported by New York City Mayor Michael Bloomberg, launched a \$9 million competition during the summer of 2012. The Mayors Challenge is a competition "to inspire American cities to generate innovative ideas that solve major challenges and improve city life."

Twenty finalists will be announced during the fall of 2012. Teams from each of the finalist cities will attend a two day workshop in New York City where the teams will work together to improve one another's ideas. Nearly 400 cities have applied as of mid-August 2012. The deadline for applications was September 14, 2012.

The five winning cities will be announced in the spring of 2013. The winning city will receive the \$5 million grand prize, with the four runner-up cities each receiving a \$1 million prize.

Selection criteria include:

- **Vision:** Demonstrate a novel and visionary approach to a challenge faced by cities
- **Ability to Implement:** Reflect thoughtfulness in planning for budget, resources, duration, and key milestones
- **Replicability:** Must address a challenge that is relevant to multiple cities
- **Impact:** Must show the potential to impact one of the following:
 - Address social or economic problems
 - Improve customer service for residents or businesses
 - Enhance accountability of or engagement with the public
 - Create efficiencies that make government work better, faster, and cheaper

For more information, visit the Mayor's Challenge website: mayorchallenge.bloomberg.org.

Upon receiving clearance from the general counsel of the agency, agency managers work with the Office of Citizen Services and Innovative Technologies at the General Services Administration (GSA) to upload the competition on the Challenge.gov platform. GSA creates a moderator account that allows personnel from the sponsoring federal agency to manage the particulars of their competition on the platform. The Office of Citizen Services and Innovative Technologies also works to promote competitions to the general public through press releases, Twitter feeds, and updates on its Facebook site.

Competitions posted on the Challenge.gov platform include competitions sponsored by one federal agency, by two or more agencies, or sponsored jointly by a federal agency and private-sector entities. Examples of each type include:

- The Occupational Employment Statistics Challenge was sponsored by one agency, the U.S. Department of Labor.
- The My Air, My Health competition is being sponsored by both the Department of Health and Human Services and the Environmental Protection Agency.
- The 2010 Progressive Automotive X PRIZE, aimed at creating a new generation of super-efficient vehicles, was a joint initiative of several organizations, including Progressive Insurance, Cisco, the Department of Energy, and the state of Michigan.

There is a wide range in the scope of competitions, which includes:

- Competitions seeking solutions to technical challenges (such as the Power Beaming Challenge and the Nano-Satellite Launch Challenge)
- Competitions related to social and policy issues (such as America's Home Energy Education Challenge and the Equal Pay Apps Challenge)

While the Challenge.gov platform is open, the submission and eligibility requirements are set by the sponsoring federal agency. For example, competitions, such as the Apps for

Energy competition, can restrict the age of participants, as well as require participants to be citizens or permanent residents of the United States.

Awards for winning competitions range from cash prizes to non-monetary prizes, such as certificates and events that recognize the winners. Judging the submissions can be done by an agency-selected panel, public voting, or a combination of both.

While Challenge.gov serves as a platform for running federal agency competitions, it also serves as a hub where competitions conducted by federal agencies on alternative platforms are advertised. For example, several agencies host competitions on other platforms such as the private sector-based InnoCentive program. In these cases, the Challenge.gov platform is used as a gateway to share information with the public on the competition, and then route users to the external platform where the competition is actually hosted (i.e., submissions are accepted, judging details are posted, etc.). ■

TO LEARN MORE

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The report can be obtained:

- In .pdf (Acrobat) format at the Center website, www.businessofgovernment.org
- By e-mailing the Center at businessofgovernment@us.ibm.com
- By calling the Center at (202) 551-9342