

Prize & Challenge Toolkit

Information and resources
to guide federal employees
working on challenges and
prizes.

CHALLENGE.GOV

Table of Contents

Table of Contents	2
Challenge Process Map	4
Challenge Types	5
Analytics	5
Design	7
Entrepreneurship	7
Ideas	8
Scientific	9
Software	10
Technology	10
Phase 1: Prepare	12
1.1 Get to Know Challenges	12
Key Takeaways	12
1.2 Prioritize Goals and Outcomes	14
Key Takeaways	14
1.3 Define the Problem to Be Solved	16
Key Takeaways	17
1.4 Determine if a Challenge Is Appropriate	19
Key Takeaways	19
1.5 Build a Team	20
Key Takeaways	21
1.6 Identify Legal Authority	24
Key Takeaways	24
1.7 Estimate Budget and Resources	27
Key Takeaways	28
1.8 Make the Case	29
Key Takeaways	29
Phase 2: Develop	31
2.1 Design the Challenge Structure	31
Key Takeaways	31
2.2 Develop Submission Requirements	35
Key Takeaways	35

2.3 Develop Terms and Conditions	36
Key Takeaways	36
2.4 Define Evaluation and Judging Process	38
Key Takeaways	38
2.5 Develop a Communications Plan	40
Key Takeaways	40
2.6 Create an Implementation Plan	42
Key Takeaways	43
2.7 Identify Goal & Outcome Metrics	45
Key Takeaways	45
2.8 Prepare to Announce	46
Key Takeaways	47
2.9 Obtain Agency Clearance	48
Key Takeaways	48
Phase 3: Conduct	50
3.1 Execute the Communications Plan	50
Key Takeaways	50
3.2 Accept Solutions	53
Key Takeaways	54
3.3 Manage the Judging Process and Select Winners	57
Key Takeaways	57
3.4 Verify Winners	60
Key Takeaways	61
Phase 4: Award	63
4.1 Announce Winners	63
Key Takeaways	63
4.2 Pay Winners	66
Key Takeaways	66
4.3 Award Nonmonetary Incentives	67
Key Takeaways	67
Phase 5: Transition	70
5.1 Document Metrics, Results and Outcomes	70
Key Takeaways	70
5.2 Document the Challenge	71
Key Takeaways	72

5.3 Complete Required Reporting	73
Key Takeaways	74
5.4 Continue Community Engagement	74
Key Takeaways	75
5.5 Manage Solutions	77
Key Takeaways	77
5.6 Share Best Practices and Results	80
Key Takeaways	81

Challenge Process Map

Step 1 Prepare



- 1.1 Get to Know Challenges
- 1.2 Prioritize Goals & Outcomes
- 1.3 Define the Problem to Be Solved
- 1.4 Determine if a Price is Appropriate
- 1.5 Build a Team
- 1.6 Identify Legal Authority
- 1.7 Estimate Budget & Resources
- 1.8 Make the Case

Step 2 Develop



- 2.1 Design the Challenge Structure
- 2.2 Develop Submission Requirements
- 2.3 Develop Terms & Conditions
- 2.4 Define Evaluation & Judging Process
- 2.5 Develop a Communications Plan
- 2.6 Create an Implementation Plan
- 2.7 Identify Goal & Outcome Metrics
- 2.8 Prepare to Announce
- 2.9 Obtain Agency Clearance

Step 3 Conduct



- 3.1 Execute the Communications Plan
- 3.2 Accept Solutions
- 3.3 Manage the Evaluation & Judging Process
- 3.4 Elect Winners
- 3.5 Verify & Notify Winners

Step 4 Award



- 4.1 Announce Winners
- 4.2 Pay Winners
- 4.3 Award Non-Monetary Incentives

Step 5 Transition



- 5.1 Document Metrics, Results, & Outcomes
- 5.2 Document the Challenge
- 5.3 Complete Required Reporting
- 5.4 Continue Community Engagement
- 5.5 Manage Solutions
- 5.6 Share Best Practices & Results

Challenge Types

Challenge Types identifies the seven typical types of challenges you can run: Ideas, Design, Software, Technology, Entrepreneurship, Scientific, and Analytics. These types are broadly defined as the types of activities or outcomes that will be worked on or produced in your challenge. Your challenge may fit into two or more of these categories, or it may not fit perfectly into any of them — that's ok! If you have a challenge idea and want to learn more about type-specific considerations, this is a good place to start. These seven Challenge Types were developed with extensive feedback from the Federal community of practice. The 2009 [“And The Winner Is...”](#) report from McKinsey & Company as well as the 2014 [“The Craft of Incentive Prize Design”](#) report from Deloitte University Press also offer widely used taxonomies of prize types that are often referenced in prize design and evaluation.



Analytics

Analytics, visualization and algorithm challenges focus on finding better ways to interpret or communicate data.



Design

Creative design and multimedia challenges can help agencies capture, communicate and project a concept or aesthetic that would be difficult to achieve with a grant or contract.



Entrepreneurship

Entrepreneurship or business plan challenges are competitions used by government, universities and private sector organizations to help train and equip entrepreneurs, as well as launch their ventures.



Ideas

An ideation challenge supports new ways of understanding and framing problems, new processes to solve problems, and innovative implementations as solutions to problems.



Scientific

Scientific challenges seek to promote the understanding of a problem, solution or outcome using empirical or measurable evidence-based practices.



Software

In a software and app development challenge, an organization asks solvers to create a software application to solve an existing problem or draw attention to potential uses of available datasets.



Technology

Technology demonstration and hardware challenges seek prototypes or fully developed solutions to catalyze and demonstrate breakthrough technical innovations.

Analytics

Analytics, visualization and algorithm challenges focus on finding better ways to interpret or communicate data. The federal government has been working to increase data sharing and make data sets more open and easy to combine. This increases the potential value of government information, and challenges are a powerful way to realize that potential.

Challenges address these goals in many ways:

- They reward exploration of newly available data sets and most effective uses or combinations of information (e.g., EPA Apps for the Environment Challenge).

- They ask for visual design that helps people better understand complex relationships.
- They find the best way to answer a specific question given specific data (e.g.,).
- These challenges attract solvers intrigued by a specific topic and those looking for new ways to apply their statistical or design expertise. As you put together your challenge, you may want to find ways to reach out to both of these communities or focus on one of them. There are several challenge platforms devoted exclusively to statistical analysis, machine learning and coding. These platforms specialize in finding fast solutions to difficult analytic problems.

Analytics, visualization and algorithm challenges are typically, but not exclusively, posed to communities of solvers that specialize in developing software algorithms, “big-data” analytics and data visualizations. Many of these challenges use large and often unstructured data sets, or “big data.” These big-data challenges are used to develop algorithms that are predictive, algorithms that can detect and discover complex patterns or visualizations that effectively convey information extracted from the data. These large data sets can consist of anything, including historical system performance data, scientific data and special or time-lapsed imagery. With modern data collection and storage systems, these data sets can be enormous. These algorithms include traditional algorithmic approaches as well as newer machine-learning techniques. In some areas, machine-learning techniques are combined in sequential processes with crowd-based analytics, in which crowdsourcing techniques employ humans to provide an analytic step that is uniquely served by human intelligence. These new “chained” processes are being used to allow for much more complex and efficient processing of big data than some traditional methods.

For most algorithm challenges, the challenge development phase involves much more than simply developing the challenge statement. For most cases, a platform is provided for the solvers to provide their solutions in a way that can be tested and scored. This includes hosting portions of the data that the competitors need to test their algorithms. The scoring function for your challenge must be developed in a way that can be tested and must reflect your priorities in solving the problem, such as performance versus accuracy versus robustness. Normally, scores are posted during the challenge so that the competitors understand the current “score to beat.”

Challenges can be constructed with submissions being private or public, which allows other competitors to view and improve upon a given solution. Different challenge platforms use different approaches and there are pros and cons to each with regard to participation incentives, effectiveness and intellectual property protection. Most commercial platforms that specialize in these kinds of challenges have a process for selecting which method will be most effective for a given challenge. Many of these challenges are run as sprints or “marathon matches” as a way to get focused competition applied to the challenge. This may be a cultural attribute of coding communities, but it results in contests that are relatively short, generally one to three weeks. These challenges also require a heavier emphasis on scientific validation of the solutions. This often requires that each of the top scoring algorithms be run against the verification data set that was withheld from the contestants. This may result in a different winner order as the solutions are assessed on different measurements, such as performance, accuracy and robustness. The work up front for these challenges, which includes preparing the data and developing and testing scoring functions, can take one to three months. This is quite a bit longer than some other challenge types.

However, when combined with the short sprint challenge period, the entire project still ends up with a timeline similar to other more traditional innovation challenges, which is about three to six months.

While much of this description has focused on specialized community challenges, it is also possible to use either standard problem-solving communities or a more general audience to perform these types of challenges. This may be particularly useful for visualization challenges or challenges that seek innovation in the approach to the algorithm, visualization or analytics. Because visualization challenges depend on information presentation skills as much as algorithm development, both communities can often participate. In this case, it is important to provide the entire community with the requirements and necessary tools, which may include rendering or analytics APIs, so the solutions can be evaluated fairly and efficiently.

Design

Creative design and multimedia challenges can help agencies capture, communicate and project a concept or aesthetic that would be difficult to achieve with a grant or contract. In these instances, agencies may require a truly collaborative approach to achieve a goal or meet a need. This challenge type can be used to address a range of needs across the visual and physical spectrum, spanning from graphics, logos and posters, to complex video productions and CAD designs; from user interface and customer experience solutions, to aspects of software and development; from architectural design, to urban planning and more. In tapping the crowd, a challenge can generate ideas, concepts and designs that extend far beyond an agency's mindset, scope of understanding, talent or skill.

Judging criteria can consider aesthetics as well as how well submissions intuitively, simply and fluidly convey a message; promote ease of use and understanding; or perform a function. Agencies should offer details on how the judging criteria will be weighted.

Entrepreneurship

Business plan challenges are competitions used by government, universities and private sector organizations to help train and equip entrepreneurs, as well as launch their ventures. A business plan challenge incentivizes teams or individuals to propose new startups focused on innovations in technology, products and services by providing training and prizes for the best viable businesses.

A business plan challenge consists of a six-stage process:

1. **Establish** goals for the program design and launch the challenge.
2. **Cultivate** and engage networks of participants.
3. **Judge** challenge submissions.
4. **Provide** mentoring or training programs to further develop the entrepreneurial ventures.

5. **Conduct** a pitch contest or demonstration to select the winners of the prizes, which can include recognition, in-kind services from private sector partners and monetary incentives.
6. **Evaluate** the impact of the program and work with winners to leverage business or technology transfer resources where appropriate.

Business plan challenges can be designed for many different goals and can achieve a variety of desired outcomes. Some challenges focus on attracting talent to new and exciting technical fields. Others focus on solving market challenges by providing rapid validation of new business innovations through mentorship, training and prizes. Many challenges are designed to stimulate new sectors of the economy or to leverage orphaned intellectual properties or underused technologies as part of an agency's technology-to-market efforts.

Rather than seeking specific point solutions, these prizes often are used to encourage mass participation and shape the commercial trajectory and career pathways of individual participants. These challenges allow promising entrepreneurs to test their ideas and vet them through supervised training and review. Business plan challenges often leverage expertise in different fields through judges and mentors, and offer a unique opportunity for the larger entrepreneurial ecosystem to have exposure to new solutions proposed in different fields.

Business plan challenges are geared to new or newly formed ventures, rarely being used to attract well-established startups or small businesses. Typically, post-business plan challenge activities include joining an accelerator or a business incubator, where these newly formed startups can continue to receive the services and support to grow their ventures.

Ideas

An ideation challenge supports:

1. New ways of understanding and framing problems
2. New processes to solve problems
3. Innovative implementations as solutions to problems

In contrast to other challenge types, the ideation challenge is open-ended, allowing challenge participants to develop responses using a variety of resources. Usually, it does not pre-determine the solution by stating that it must, for example, be a software solution, data set, or other specific outcome. Therefore, the ideation challenge is ideal for sourcing input and ideas on a broad range of problems, especially those with hard-to-define concepts (like peace or tolerance) or addressing questions whose solution may involve outcomes resulting from the collective efforts of multiple disciplines (like the collaboration between a mathematician and sociologist to solve a problem whose solution may have initially appeared to be only math based).

Scientific

Scientific challenges seek to promote the understanding of a problem, solution or outcome using empirical or measurable evidence-based practices. Scientific challenges encourage critical thinking to gain insight into natural, physical, computational, social and all other sciences. These challenges use a focused problem-statement approach that outlines specific criteria used for evaluation without specifying or suggesting how to solve the problem. Solutions require clarity and substance with respect to experimental design features to promote scientific rigor and reproducibility. It's essential to provide adequate details to your solver pool so that solutions can be verified and validated as required in the evaluation and judging criteria for these types of challenges. Interestingly, incentive prizes began squarely in the scientific world. Scientific societies in 18th and 19th century Europe regularly posted lists of challenges; David Hilbert in 1900 famously listed 23 math problems of the century, some of which remain unsolved.

The design of a scientific challenge often overlaps with any of the six other challenge types: ideation; software and apps; technology demonstration; analytics, visualizations and algorithms; creative design; and business plans. Scientific challenges solicit hypotheses from the crowd and advance scientific research through hypothesis testing, discovery based research, computational approaches and predictive modeling using huge data sets. These challenges also apply scientific discoveries and knowledge to other problem areas.

Scientific challenges can take many forms, including:

- Small ideation challenges which solicit new thoughts, theories, proposals, concepts and hypotheses that might address a broad problem
- Theoretical challenges requiring a well-thought-out idea with detailed descriptions, specifications and requirements
- Full demonstration challenges with prototype development, proof of concept or reduction-to-practice simulation that proves a solution or idea and can be tested by others

Scientific challenges can be structured in various ways, including as single-phase, multi-phase and linked competitions. Single-phase challenges can deal with ideation or algorithms as in the . Multi-phased challenges seek theories leading to proof-of-concepts within one competition as in the Environmental Protection Agency (EPA) and National Institutes of Health (NIH) , the Food and Drug Administration Food Safety Challenge, and the [NIH](#). Linked challenges are treated as separate challenges for administrative purposes but build upon earlier successes. The [Seizure Detection Challenge](#) and [Seizure Prediction Challenge](#) were two separate but linked challenges for which solvers used the same data sets. The [NIH Follow that Cell Challenge](#) could have been two separate, linked challenges if the total amount of the prize was not available for obligation in one fiscal year. Sometimes scientific challenges are also combined

with [citizen science](#) projects like the Smithsonian Conservation Biology Institute's [project to track cats and coyotes](#) in order to engage volunteers in data collection.

Software

In a software and app development challenge, an organization asks solvers to create a software application to solve an existing problem or draw attention to potential uses of available datasets. A challenge may ask its solvers to use particular datasets or adhere to a set of outlined functionalities in their application. Such challenges provide open-ended paths toward a solution in order to encourage diverse and innovative participation. Desired solutions tend to be scalable and often require web-based assets. These challenges do not set out to solve extremely specific "big data," image processing or scientific problems, but could certainly use aspects of them all to develop a robust and scalable application. Challenges may also involve some algorithm development or data analysis.

A software and app development challenge often results in one of three distinct types of applications, depending on the needs of stakeholders.

- **End-user applications** are tailored to the specific needs of a user, often the general public.. Also called front-office applications, they are the most common application referred to when the term "app" is used. Typically, "app" refers to a software application designed to operate on a mobile device such as a smartphone or tablet. App challenges are some of the most practiced and well-understood among the types described in this toolkit.
- **Back-office applications** are not visible to the end user of an organization's product or service but will be accessed by those internally involved in a specific operation. A back-office application can run a company's inventory, financial records or manufacturing processes, and its interfaces are not generally designed for the general public.
- **Enterprise applications** are complex, distributed and often highly scalable. They are used in large organizations and contain mechanisms that affect large groups of employees or the public. They interface with large, diverse user groups and must remain flexible to allow system administrators to effectively manage them based on their organizational qualities.

Technology

Technology demonstration and hardware challenges seek prototypes or fully developed solutions to catalyze and demonstrate breakthrough technical innovations. The Orteig Prize that inspired Charles Lindbergh's transatlantic flight and the Ansari XPRIZE for commercial spaceflight are two well-known technology demonstration and hardware development challenges. In practice, many of these challenges are not limited to hardware innovation, since large-scale technology development challenges can require both software and hardware components to accomplish the task, especially in topic areas like robotics.

Large competitions often take place over many years, demonstrate sophisticated technology and take advantage of multiple steps where entrants have benchmark evaluations before advancing. Precursors to large challenges, or even standalone prototyping hackathons, have been very successful in making use of relatively inexpensive electronics components and 3-D printers to develop a diverse set of proof-of-concepts. These types of challenges vary in scope, and not every technology development challenge may be as large as these examples. You may find that a smaller demonstration challenge fits your needs or is needed to more completely define your requirement set for a long-term challenge. It's important to recognize that technology demonstration and hardware challenges can be designed to develop technology along the entire technology readiness level (TRL) spectrum, from paper concepts to final products ready for infusion.

Phase 1: Prepare

In this phase you'll begin to think through the problem you're trying to solve, estimate the necessary resources and consider partnerships within and outside government. This will help identify goals and desired outcomes and determine if a challenge is the appropriate tool for achieving results.

1.1 Get to Know Challenges

The use of challenges has steadily increased across government in recent years under a number of authorities outlined in an Office of Management and Budget memorandum from 2011 (OMB M-10-11). One such authority is the America COMPETES Reauthorization Act of 2010, which was signed into law Jan. 4, 2011.

Section 105 of the COMPETES Act added Section 24 (Prize Competitions) to the Stevenson-Wydler Technology Innovation Act of 1980 (15 USC § 3719), granting all government agencies broad authority to conduct prize competitions to spur innovation, solve tough problems and advance core missions.

The federal government has run many types of challenges to achieve a variety of outcomes. More than 100 agencies have run nearly 1,300 challenges since 2010, offering more than \$250 million in cash prizes and other incentives. These challenges have brought more than 5 million site visitors to Challenge.Gov and attracted hundreds of thousands of solvers from every part of the United States and around the world.

Federal agencies have used challenges to source new ideas, stimulate markets, develop technology, generate awareness, and educate and spur collective action, according to a 2014 analysis of government challenges.

The most comprehensive source of data about government challenges since 2010 are the reports to Congress compiled by the White House Office of Science and Technology Policy (OSTP) for fiscal years 2011, 2012, 2013, 2014, 2015, 2016, and 2018.

This report is now delivered to Congress every other year, per the 2017 American Innovation and Competitiveness Act.

Key Takeaways

1. Get to know the unique benefits of challenges.

Prizes and challenges have an established track record of spurring innovation in the private and philanthropic sectors. The 1714 Longitude Prize stimulated the development of the world's first practical method to determine a ship's longitude. In the 1920s, the Orteig Prize inspired Charles Lindbergh to fly nonstop from New York to Paris. More recently, the 2011 Oil Cleanup X Challenge saw a company from Illinois demonstrate a drastic improvement in the recovery rate for cleaning up oil from the ocean's surface.

Challenges and prizes provide several unique benefits:

Allow government to pay only for success and establish an ambitious goal without having to predict which team or approach is most likely to succeed. Contracts and grants are awarded based on proposals for future work, forcing agencies to value past performance at the expense of disruptive innovation. With a focus on proven results, challenges empower untapped talent to deliver unexpected solutions to tough problems.

Reach beyond the “usual suspects” to increase the number of minds tackling a problem. Challenges are one tool to tap the top talent and best ideas wherever they live, discovering breakthroughs from a broad pool of known and unknown sources of innovation in a given industry.

Bring out-of-discipline perspectives to bear. Empirical research conducted by Harvard Business School finds that breakthrough solutions are most likely to come from outside the scientific discipline or at the intersection of two fields of study.

Increase cost-effectiveness to maximize the return on taxpayer dollars. Challenges incentivize significant additional investment, magnifying the impact of cash prizes. Teams also compete for the associated validation, prestige and satisfaction that come from solving critical problems.

Inspire risk-taking by offering a level playing field through credible rules and robust judging mechanisms. Challenges give entrepreneurs and innovators license to pursue an endorsed stretch goal that otherwise would have been considered too audacious. Clear target metrics and validation protocols defined for the judging of a prize can themselves become defining tools for the subject industry or field.

2. Look at a broad range of challenges that have been conducted by the government.

Challenges allow you to address a wide variety of problems covering a broad range of topics, outcomes, prizes and participants. Search the web for challenges in your topic area and engage with the federal prize and challenge [community](#) to learn more.

3. Find your agency challenge point of contact.

You'll want to know if your agency has run any challenges before and if your agency has a challenge point of contact. After familiarizing yourself with the challenge concept, reach out to your agency's challenge point of contact for specific guidance. You don't need to reinvent the wheel!

In addition to resources from your own agency, the General Services Administration (GSA), through the Challenge.Gov program, has trained thousands in the federal government through workshops, [online resources](#) and an active community of practice. NASA's [Center of Excellence for Collaborative Innovation](#) (COECI) also provides a full suite of challenge implementation services, allowing agencies to experiment with these new methods.

4. Don't underestimate the effort.

Challenges have gained interest as a way to address problems across the federal government, but the effort involved is often underestimated. Starting a challenge with reasonable expectations will improve your likelihood of success. Consult the resources made available through this toolkit to stay on track.

5. Don't force a challenge.

Not all problems lend themselves to challenges. Before you commit to a challenge, think critically about the nature of your problem and consider other options such as grants, contracts and inter-agency agreements. OSTP put together some [innovative contracting case studies](#) that provide greater insight. It may be more effective to combine different methods, such as challenges and contracts, to achieve your objectives.

[Step 1.4](#) discusses this topic in more detail.

1.2 Prioritize Goals and Outcomes

Goals and desired outcomes form the foundation of a challenge design. You should plan your challenge in the context of any broader objectives.

Recognition of a basic problem often sparks the idea to run a challenge. The initial conversation might start with proclamations such as “we need communities to conserve energy” or “desalination is too expensive.” But remember: Achieving ambitious goals often necessitates multiple approaches, only one of which may be a challenge.

Once you identify a problem or goal and craft an initial framework for the challenge, you need to prioritize the project's goals and desired outcomes. Think of a goal as an objective your project seeks to achieve and a desired outcome as a measure of how successful you are in meeting that goal.

Historically, challenges have been used to achieve a broad range of objectives such as developing new ideas, technologies, products or processes and motivating people to work toward a targeted goal. In the process, the pursuit of these goals influenced public perceptions, inspired new talents and mobilized private capital, among other outcomes. In the past few years, the majority of government challenges have been designed to achieve multiple goals, and more than a third have been designed to produce multiple solutions.

Goals and desired outcomes ultimately will determine the monitoring and evaluation process for your challenge, as well as the metrics included in the biennial report to Congress.

Key Takeaways

1. Keep asking why.

Most challenges have restraints such as specific focus areas, budget limits, timing requirements and broad organizational priorities, so defining and prioritizing goals and desired outcomes for a specific challenge can be difficult.

There are often complex layers of goals and outcomes that can be realized. Keep asking “Why?” until you discover the most important ones. The answer may not be obvious, but make sure to engage many internal and external stakeholders, collaborators and intended users in the process. That way you can jointly identify outcomes that meet, align with or support their objectives.

Work hard to find the goals and outcomes that will make the greatest impact. Design your challenge around those.

2. Set goals and help realize them.

It’s not enough to set goals. You should take a comprehensive approach to your challenge design to identify specific opportunities that support those goals and metrics that will help you understand how well you did in meeting them. Collaborators are important to this process and can provide valuable insights to identify and implement other activities that may make the challenge more effective.

You should be able to articulate and prioritize the goals for your challenge BEFORE you start to design it. Many challenges have more than one goal. Keep in mind: The more goals you have, the more complicated your challenge design is likely to be. The America COMPETES Act defines these 10 goals for federal challenges:

- Improve government service delivery
- Find and highlight innovative ideas
- Solve a specific problem
- Advance scientific research
- Develop technology
- Inform and educate the public
- Engage new people and communities
- Build capacity
- Stimulate a market
- Other

3. Think community before and after.

Even if engaging people and communities isn’t a primary goal of your challenge, it often will be a secondary goal because challenges rely on gaining access to new communities of innovators. Most successful solvers depend on a community and a support structure. Engaging and supporting these communities can be time-consuming and costly.

Prioritize how communities will be cultivated, empowered and sustained throughout the competition. Nurture and strengthen bonds in existing networks before, during and after the challenge as much as possible. Sometimes the most interesting solutions do not come from the top winners but from a runner-up. You want to inspire these solvers to continue innovating.

4. Choose goals that can be measured.

It's important to specify how your agency and collaborators will measure the success of the challenge. Clear, easy-to-follow measures ensure that everyone understands how the challenge supports the goal. Maintain coherent measures throughout the challenge so you can report outcomes to leadership, collaborators and stakeholders.

5. Prioritize goals with a framework for cost-benefit.

Maintain a framework or logic that explains the rationale for how your goals were identified and prioritized. Once you settle on a challenge design, you probably will be asked to give briefings and presentations internally. You'll need to be clear about your priorities and how they support the agency's mission. Be definitive about what you do and don't seek to achieve through the challenge so agency leadership understands why certain design decisions were made.

6. Consider upfront how you will work with your solvers and ultimate solutions.

Clearly define your objectives: When prioritizing goals and outcomes, consider what you plan to do with the solutions or technology after the challenge ends. If you want to transition a complete or partial solution to an acquisition to buy it, develop it further or provide it to a third party, then you need to identify this objective when you prioritize your goals and outcomes.

Work with your contracting office to incorporate the rigor of the FAR, Agency Specific Regulations and OTA: If you want to acquire the solutions generated in your challenge, it's crucial that you consult with your legal team and contracting office before you design the structure of your challenge. The structure should support the acquisition of solutions under the Federal Acquisition Regulations (FAR), Agency Specific Regulations and Other Transaction Authority (OTA). You may have to adjust the design, structure and documentation of your challenge so it aligns with current statutory or regulatory requirements and provides a direct path to acquire the solutions.

1.3 Define the Problem to Be Solved

Developing and documenting a detailed understanding of your problem is critical to the success of any challenge. This is one of the most important parts of the design process, so you'll see it referenced in this guide again and again.

In this step you define WHAT you're trying to achieve, not HOW it should be achieved. Do some research and analyze why the problem hasn't been solved yet. Identify needed breakthroughs and organize

workshops to test assumptions. Use the information you gather to draft a concise problem statement that serves as an initial focus for your challenge.

When analyzing why a problem hasn't yet been solved, ask yourself:

- What is the history of the problem?
- What are the known or potential root causes?
- What does a viable solution look like?
- Who will be using it?
- What features must it have?
- What features would you like it to have?
- This step gives you the opportunity to engage potential partners and collaborators to shape the challenge and ensure a common understanding of the problem being addressed.

Key Takeaways

1. Engage many people who know the problem space well.

Doing extensive research about the space around your problem is important foundational work. Reach out to people within and outside your agency who are intimately familiar with the problem and even those who have attempted to solve it. You'll gain an appreciation for perspectives often overlooked. It may feel chaotic and time consuming, but this process is critical in forming a high-quality problem statement that will attract many well-informed solvers.

Ask your attorneys how to obtain outside input within the parameters of the Paperwork Reduction Act and Federal Advisory Committee Act. If you have time early in your exploration process, allow for input on the challenge design before the rules are finalized by the broader community. You can accomplish this through a request for information (RFI).

2. Socialize your problem statement with leadership.

Most challenge designers are reluctant to ask their leadership for feedback about the problem statement before a full design is completed. Don't be. This can be detrimental to the whole process.

You can frame a problem in various ways that have significant implications on the quality and relevance of solutions, as well as who may be interested in helping to solve the problem. A challenge designer can spend an enormous amount of time crafting a well-thought-out problem statement.

Get buy-in from agency leadership early in the process. It will help avoid resistance and complication in areas of your agency that are out of your control.

3. Think early about simple ways to frame the problem.

Your problem statement will generate understanding and support within your agency and certain communities, but you need to make sure everyone gets it.

Find simple and catchy ways to communicate the problem, no matter how complex it is. While formulating variations to your problem statement, work with your communications or public affairs team to come up with clever and memorable ways to communicate the problem. Think about how you would articulate it through tweets and other social media. It helps to frame the problem as a goal to meet or a barrier to break.

4. Do your research and determine if the problem can be easily measured or quantified.

Do both primary (interviews with stakeholders) and secondary (literature review) research on your problem. Performing a “state-of-innovation” analysis establishes an evidence-based framework for determining the prize fund amount and the desired outcomes of the competition. This information will help you set the minimum performance criteria that competitors need to achieve. It also can determine how far beyond the current state that would drive innovation. Also, your primary research can generate excitement about the upcoming prize and attract judges, mentors and participants for the competition.

Consider doing a [Porter Analysis](#) of the ecosystem around your problem as well. This can help you understand threats of new entrants, bargaining power of suppliers, threats of substitutes and bargaining power of buyers.

Effective problem statements convey quantifiable objectives and parameters, such as a specific amount, rate of change and measure of impact (who, where, when and how). Determine early whether there are easy, accessible, inexpensive means to measure the metrics that define your problem. If not, then part of your design process needs to be the definition of new measurements, testing protocols and support services to potential solvers. If providing such additional capabilities makes your prize program impractical, then consider different formulations of the problem or proxies for those measurements.

Running a fair and equitable prize program begins with the right problem statement.

5. Learn from others and keep refining.

Study as many challenges as you possibly can on Challenge.Gov. Look at competitions outside of government as well. Reach out to the people involved to learn about the internal decisions and compromises they made in developing their problem statements. Ask them for feedback on your own problem definition.

Take time to meet with partners, collaborators and end-users to ensure consensus and shared understanding of the problem statement and measures.

1.4 Determine if a Challenge Is Appropriate

When defining a problem, it's important to assess if a challenge is the best or only approach for achieving the desired outcomes. A challenge is only one way agencies can entice innovators to take risks and invest resources to potentially secure a future benefit such as a cash award, recognition or advanced market commitment. Likewise, a challenge is only one possible intervention that could help address challenges through market shaping and facilitation.

Depending on the nature of the problem and anticipated outcomes, a challenge might not be the best intervention. You can support new market activity through either “push” or “pull” approaches. When you push, you pay for research inputs. When you pull, you pay for research outcomes.

Push mechanisms typically aim to reduce the cost of research and development by directly funding research. Traditional “push mechanisms” such as contracts or grants are most appropriate if a solution is obvious or additional research is needed.

Pull mechanisms are structured to incentivize private sector engagement and competition by creating viable market demand for specific products. If you can be flexible about how to solve your problem, it may help to pursue a mechanism that can be customized and achieve a number of different outcomes. Keep in mind that you can combine a challenge with another vehicle to achieve certain goals and outcomes.

Key Takeaways

1. Identify your potential solvers.

Consider who might enter the competition and present innovative and creative solutions. A challenge provides a way to reach solvers who aren't engaged through grants and contracts. How will you reach them? What would they bring to the problem that other methods don't? Will the targeted solvers have the time, funding, facilities and other resources to compete?

A challenge shifts some risks to solvers, most of whom won't win. Be thoughtful and creative in what incentives your challenge offers. Even large prize amounts may not be enough if solvers can't enter or don't want to take on the risk without additional support.

2. Identify the benefits of applying a challenge approach to your problem.

A challenge isn't just a different way to address a problem. It works best when traditional methods aren't providing sufficient incentive or direction or when a new perspective is needed. But a challenge is unlikely to produce a better outcome if your problem can be solved by a grant, contract, interagency agreement or other traditional method.

3. Determine if your problem is suited for a prize.

You can be flexible in many of the steps when designing your prize and challenge. Still, you need to consider a few things to determine if a problem is “prizable.”

- Can you clearly [define and explain](#) the problem you want to solve? Have you identified key issues that can be addressed by a challenge? If you can't be precise in defining the problem, it will be difficult to develop a challenge that can effectively solve it.
- Can you describe what a [successful outcome](#) should look like? Can you explain it clearly to potential solvers?
- Can you identify experts from other disciplines that you want to participate in your challenge? Can you provide sufficient incentives (prize money and others) to convince them to participate?
- Is there a way to [measure and judge the winners](#)? The evaluation doesn't have to be quantitative, but you should be able to define a way to select the winners.

4. Consider the timeline and process.

A challenge is often seen as a faster process than traditional grants, but that's not always the case, especially when you factor in the time required to develop and approve the challenge.

Challenges also may change the order of certain processes. Funding for more traditional acquisition is generally provided up front before work is done. Although prize funds may need to be committed up front, awards are made to participants after work is completed.

5. Identify aspects of prizes and challenges that can be applied to traditional methods.

A challenge approach has many advantages, and it allows you to engage a more diverse set of solvers. Identify the aspects of this approach that best address your problem so you can apply them in other activities. If you decide a challenge isn't the best method, you may be able to incorporate some of those elements into the approach you do take. For example, you can use communications strategies common to challenges to reach a broader group of problem-solvers for a variety of projects.

6. Evaluate other mechanisms.

Consider other Mechanisms such as [challenge-based acquisition](#). In some cases, you and your contracting office may determine that a challenge is inappropriate. For example, if you intend to purchase production units or lifecycle support for a solution under the umbrella of a single acquisition effort, then a challenge may not be the best approach. Challenge-based acquisition takes the challenge concept a step further by making it part of the procurement process. It brings the innovation opportunity of a challenge into the procurement framework of the Federal Acquisition Regulations (FAR).

If procurement is one of your goals, you should assess if a challenge is sufficient for your needs or if the use of a challenge-based acquisition or other FAR-based procurement approach is more appropriate.

1.5 Build a Team

A challenge requires the expertise of individuals who can perform a variety of roles, including:

- problem definition
- prize design
- communications
- procurement and funds disbursement
- technical support
- legal counsel
- event planning

There could be other roles, depending on the design of your challenge. Identify early who you'll need to consult from key offices (i.e., legal, procurement, communications/public affairs) while developing your challenge. These choices will shape the concepts and alternatives available to you in structuring your challenge. Many agencies have experience running challenges, and there already may be staff with useful knowledge. Also, consider that your team may change over the course of your challenge.

Key Takeaways

1. Identify others at your agency with challenge experience.

People who have run a challenge at your agency will be a valuable resource, even if they won't play a significant role in the design and development of yours. They can point you to individuals you'll need on your team or groups that should be involved. For example, someone who has run challenges at your agency before probably can introduce you to the attorney(s) most familiar with prize authorities.

If you can't find anyone with challenge experience, ask for guidance from the Federal Challenges & Prizes [Community of Practice](#) or send a note to the [Challenge.Gov team](#).

2. Put together a challenge dream team with key functional roles.

A challenge may appear simpler in execution and design than a traditional government program, but this isn't necessarily the case. A challenge is a program too, albeit one often carried out with a comprehensive communications campaign and in a compressed time frame.

Many of the core competencies needed to execute a challenge overlap with those required for a traditional government program. Below are some of the primary roles needed throughout a challenge. Depending on how the team is structured, these roles may be carried out by people at one agency, across several agencies or at third-party vendor or partner organizations.

- **Team lead:** The person in this role should be the same during and after a challenge. Continuity of leadership ensures successful stewardship of a challenge through the many stages of development and execution. The team lead will serve as the overall project coordinator, facilitator and point of contact for all members of the team. The person in this role sets the tempo and structure for the challenge. Unless the government is playing a supportive role in another

organization's prize competition, the team lead is usually, and in some cases must be, a federal employee. It has been common in recent years for government fellows to play this role as well.

- **Logistics & support:** The person in this role generally serves as the “catch-all” who keeps the team on track with the timeline and goals. This person will research, plan events, schedule meetings, book conference rooms, and review and draft documents. This person also may serve as the project coordinator in the absence of the team lead.
- **Subject matter anchor:** This role should be filled by someone in the relevant subject matter program office at your agency. If you conduct a challenge on a topic outside of your agency's programmatic portfolio, the prize may be “owned” by your lead innovation officer. The person in this role typically sets the goals of the challenge and criteria for winning.
- **Subject matter experts (SMEs):** This role can be filled by SMEs within the originating office or SMEs from other government agencies, academic institutions or the private sector. These experts help define the problem and understand the state of innovation in their field. They also help draft the challenge statement, construct the desired outcomes and define the criteria for winning.
- **Communications/engagement:** This role is gaining traction across government agencies. For many agencies, a desired outcome of running a challenge is creating social awareness about an issue. This is easier to achieve if you make communications and engagement a primary team role. A strong communications campaign serves several purposes. It can raise social awareness, engage and educate the public, and increase the number and diversity of applications. Challenge participants often say media attention is more valuable than cash prizes as it can lead to additional investment and collaboration opportunities. Those handling communications and engagement for your challenge also coordinate with your agency's legislative affairs office.
- **Legal:** Here it is again: Engage your office of general counsel early in the design process. General counsel can provide essential advice on eligibility, intellectual property, prize authority and adherence to the American Innovation and Competitiveness Act.
- **Contracts/grants/budget:** The people in these roles ensure adherence to agency policy for procurement and assistance and serve as the gateway to awarding prizes. As you start designing your challenge you need to determine who will help you disburse cash prizes. Their advice will influence challenge design features such as eligibility, review process, selection criteria, public notifications and payment of funds. Some agencies have well-established standard operating procedures for disbursing prizes. Still, many don't. The latter often hire outside prize administrators, which can be time consuming.
- **The customer or end user:** Involve the intended end user or “customer” of the innovation early in your design process. Engaging the end user will help you understand potential barriers to technology uptake and will help you understand important design features and functions.

- **Others:** A prolific, diverse challenges and prizes community has emerged across the U.S. government. Consult with your fellow practitioners at all stages of your challenge to ensure your project is as effective as it can be.

3. Make an impact by bridging resources through public-private partnerships.

Private foundations and corporations increasingly seek opportunities to work with government agencies and combine monetary and technical resources to make an impact across various sectors. For example, the U.S. Agency for International Development partnered with National Geographic to launch the [Wildlife Crime Tech Challenge](#), with National Geographic providing monetary and technical support to help design the challenge and evaluate proposals. Your agency's general counsel can tell you about the agreements that need to be in place when setting up a public-private partnership.

Collaborators, partners and stakeholders are important to the success of your challenge. Other agencies, academic institutions, nonprofits and groups with similar concerns can bring valuable perspectives to your project. They can contribute funding or support other aspects of the challenge. For example, another federal agency may lead the communications or judging efforts or provide subject matter expertise that is not available to you at your agency. The mechanisms you use to engage with third parties will be determined by the legal authority used to run the challenge, as well as requirements and priorities within your agency.

The government has a special ability to convene players in markets and systems conducive to innovation. This enables innovators to access people and resources they normally couldn't. Partners could include:

- corporations that can serve as manufactures, customers, distributors or acquirers of an innovator's technology
- organizations with ground-level market knowledge, which could include partners from relevant markets, federal and local government agencies, and local businesses
- organizations with expertise in logistics and legal/regulatory challenges of local and international operations
- technical experts from academia, design firms or other organizations with the ability to offer detailed feedback on product design
- investors, lenders and others who can provide focused funding in a particular sector
- partners who can finance end users

4. Consider early whether you'll seek contract support to help design or administer your challenge.

Thanks to the federal government's increased use of challenges, an industry of vendors has developed to support agencies in running competitions. These vendors offer expertise throughout the phases of a

challenge including providing a web platform, prize design and administration, communications and funds disbursement. When working with a vendor you need to ensure an appropriate level of agency representation for the project. This would include a challenge lead, legal representative, communications team, subject matter experts, and contracting or grants support (depending on the disbursement structure).

If you think you'll need consultation with problem definition or prize design, then you'll want to select a vendor to join your team early in the process. Some teams will wait until Phase 2 (Develop) to pick a vendor if that vendor is more likely to help with execution and administration than strategy and design.

1.6 Identify Legal Authority

Work closely with an agency attorney in this step.

It's not just the American Innovation and Competitiveness Act. Several other [legal authorities](#) (such as assistance, procurement or necessary expense doctrines) allow agencies to conduct challenges. You have to determine what legal authority to use for your challenge, and it's a critical decision.

Each authority presents unique requirements for your challenge structure. Consult with your agency's general counsel early in the design process to determine how the goals of your challenge align with authorities, appropriations and preferences for your agency. For example, some authorities, including that provided under the American Innovation and Competitiveness Act, allow for external funding in some circumstances but also limit eligibility to U.S. citizens.

In determining the legal authority, consider your desired participants, intellectual property for solutions and the likelihood of implementing the challenge through partnerships. Engage your attorneys early in the process to help weigh these choices.

There are many legal authorities available to run challenges. The American Innovation and Competitiveness Act is an update of the broad authority first provided by the America COMPETES Act, and it's the most common.

Key Takeaways

1. When looking at legal authorities, start with activities.

Focus on the objective or goal of the challenge with respect to agency mission, not using a particular authority. Don't set out to run a challenge; rather, set out to accomplish a goal as part of your agency mission.

A prize competition is a means, not an end. Don't run a challenge just for the novelty. It should be a deliberate decision that this is the best way to address your problem.

If you're tasked with running a challenge, make sure you apply it to an appropriate problem. Determine what activities will address the problem at hand and advance the mission, then consult with counsel to determine what authority the agency has to accomplish those activities.

Not all authorities are available to all agencies, with the exception of the American Innovation and Competitiveness Act. There may be other authorities available if a project ties directly to your agency's mission.

Continue to consider what the best mechanism is throughout the design process, not just at the beginning. You may realize later that another authority is better after all.

2. Follow the money, and follow the purpose.

Questions about legal authorities often start with whether the proposed activity will involve making cash awards or transferring funds to a third party. It makes sense to focus on this aspect during the planning process and when describing the proposed challenge to your agency counsel. If you're not planning a fund transfer, then legal counsel can review with you the authorities available for your agency to use crowdsourcing or challenge activities on a collaborative or no-funds-exchanged basis.

If the activity will involve the transfer of funds, consider the purpose for which the funds will be used. If you intend to acquire something for the direct use by and benefit of the federal government — like a crowdsourced mobile app or algorithm — then you'll likely use the procurement process. If the purpose is to support competitions or crowdsourcing events being run by independent third parties, then a grant may be a useful vehicle. If you intend to run a challenge and award a cash prize to stimulate innovation in an area of agency interest, then a direct prize authority like the one found in the American Innovation and Competitiveness Act may be the way to go.

The mission of your agency, the goals you hope to achieve, your available resources and the activities you plan will drive your choice of legal authority.

Stop us if you've heard this one before: ***Coordinate early and often with your agency's legal counsel for guidance.***

3. Consider legal authorities throughout the challenge development process.

Consideration of legal authorities isn't a one-time discussion.

All legal authorities and agencies have different requirements that will guide challenge development. And it works the other way too — your design decisions can guide which legal authorities should be used.

Look at legal authorities early in the planning process to understand your options. As you develop your plans you may find that a particular authority is too limiting, and you may need to go back and look at your options again.

4. Become familiar with the flexibilities and restrictions that different legal frameworks provide.

Different legal authorities may impose restrictions or provide options that aren't immediately apparent but will affect how your competition is run. Likewise, different agencies may interpret the same authority differently, so talk to your attorneys about these issues.

Ask these questions relating to legal authority:

- How will the challenge be funded and how will you pay out the prize?
- What do you want to do with the solutions? Will they become open source, public goods or products that will enter the commercial market? Will your agency use them? Many authorities specify what happens with the intellectual property (IP) generated by a challenge. If your agency wants to use the solution, traditional procurement methods may be best.
- Is it important to include international solvers? Some authorities limit eligibility to U.S. citizens and residents.
- Will you partner with outside groups? Do you want to administer the prize yourself or use a third party?
- Do you want to apply both government and nongovernment funds to your challenge? Some authorities allow agencies to receive outside funding for the purpose of conducting a challenge with certain restrictions.
- Do you want to have judges from outside your agency? Some authorities provide for an exemption from the Federal Advisory Committee Act (FACA) for judging panels consisting of non-government employees.

5. Find out if your agency or department has specific guidance in place.

Some agencies have specific guidance about what legal authorities can be used, while others may allow a range of options. Talk to your agency's attorneys and challenge point of contact to learn what policies are already in place.

6. Understand other legal issues that might apply to your challenge.

The all-encompassing American and Innovation Competitiveness Act authority isn't the only law that may apply to your challenge. For example, sometimes challenge managers specifically want to involve students in their solver pool. If minors are potential participants, make sure you fully understand any legal limitations or requirements under the Children's Online Privacy Protection Act (COPPA). Pay close attention to parent/guardian authorization.

Other important questions [include](#):

- If an agency uses Challenge.Gov to host a challenge, must it submit an information collection request (ICR) to the Office of Management and Budget for approval under the Paperwork Reduction Act (PRA)?
- If an agency requests that a title for an idea, solution or entry be provided as part of a challenge, does the agency need to seek PRA approval?
- What happens if a participant wants to contest the decision? Who do they appeal to? It's critical that you follow the judging protocol you'll [develop](#) and [execute](#) later in the process. This is crucial to defend the agency if there's a disagreement among participants about the awards. The Federal Trade Commission recently won a case where a participant who didn't win [appealed](#) to both the Government Accountability Office and the U.S. Court of Federal Claims seeking damages.
- Does the National Environmental Policy Act (NEPA) apply to your challenge? Using the NEPA process, agencies evaluate the environmental and related social and economic effects of their proposed actions. Your agency may require a NEPA review of your challenge. For example, the Department of Energy has determined that prize competitions are major federal actions that require NEPA review. The NEPA strategy employed in each challenge is based upon the specifics of a particular competition. If you think NEPA may apply, include a NEPA specialist early in the planning and execution of your challenge.

7. Fully understand what legal authority you're operating under.

Under some challenge authorities, it may not be possible to efficiently transition a solution to a follow-on procurement without consultation of the FAR, agency-specific acquisition regulations or 10 U.S.C 2371 as related to Other Transaction Authority (OTA). Consult with your agency counsel and procurement office to identify additional legal authority necessary for a follow-on procurement.

1.7 Estimate Budget and Resources

Estimate the budget and future resource needs of your challenge early in the design process to better plan and secure buy-in for the concept within your agency. You'll need resources in a variety of areas: financial, technical assistance, administrative support, implementation (facilities for hosting), communications support and more.

Regardless of complexity or scale, any challenge requires at least one person to dedicate time throughout the entire process. Human capital needs and time commitment are two of the most important resources to consider early in the design process. Although it may be difficult to reach a decision on funding levels, human resources and timelines without a finalized design, you still need to estimate likely resources within your agency and among partners at this stage.

What is this going to cost? How many FTEs are needed? These will be among the first questions asked when you make the case to your agency leadership.

Key Takeaways

1. Estimate the prize purse and other incentives.

It's not easy to determine the right amount for a monetary prize. Sometimes your legal authority sets parameters on the amount you can offer. Your prize should be enough to attract a sufficient number of solvers from your target audience, but too large a prize may increase the cost of your challenge without getting the results you want.

Consider what it will cost people to participate in your challenge. Will they need to buy specialized equipment or have access to a lab? Can you offer the use of federal facilities equally to all participants? If it will cost a lot to participate, consider offering a larger financial incentive. You also can offer small milestone payments along the way to teams making the greatest progress if the cost of participation is a barrier to entry.

It helps to know how much your agency has paid through traditional approaches (e.g., grants and contracts) to support problem-solving in this topic area. What is the value of the solution to your agency? All of this is useful to consider when determining your prizes.

2. Look beyond the prize award amount.

Due to various challenge types, incentive structures and programmatic complexity, there's no general formula or rule to estimate your budget in the earliest stages of prize design. You have to define the problem, identify contributions from potential collaborators and determine desired outcomes before you can accurately estimate an appropriate award amount and the resources to execute your challenge. Still, you have to start with a rough order of magnitude to get leadership approval to proceed.

Challenge administration costs may easily match or exceed the prize purse being offered to the winners. For example, it may require significant resources to implement multi-stage competitions that involve testing and usability evaluations due to the involvement of management and experts. Beyond the prize purse, consider expenses associated with labor, general administration, communications and outreach, travel expenses, evaluation (e.g., data collection testing facility costs) and judging. If you plan to conduct the challenge with a third-party contractor, there will be fees associated with that. Determine where to budget for federal employee time or contract support when making your estimate.

3. Challenges don't implement themselves — it takes budget and resources to run one.

There's a perception that challenges are simple and inexpensive to run. Challenges take many forms. Some are easier and cost less, but others require extensive effort and investment. It's similar to a grant program where the initial setup incurs administrative costs beyond the funds being awarded to grantees.

The more complex your challenge is, the more you'll likely have to budget for administrative costs, which can end up being as much as the prize purse itself.

4. Consider potential contributions from collaborators and partners.

As mentioned in [Step 1.5](#) (Build a Team), collaborators and partners can help share costs and tasks across a challenge. A collaborator may provide technical capabilities for evaluation and testing or may manage the judging process. Consider the time it takes to find and enter into agreements with collaborators or partners. It can take months to finalize partnership agreements. Be aware of the trade-off between time and overall cost to the government if you're considering a strategy that relies on sharing costs with partners.

5. Plan ahead and conduct a preliminary assessment.

In addition to budget and resource considerations for your challenge, you may also want to consider what's needed to transition a solution to a possible follow-on procurement. Undertake a preliminary assessment on what funding and resources would be necessary for a procurement action. Who are the key stakeholders and what impact might resource constraints have on the transition to procurement? You may be able to involve these stakeholders in the challenge to ease that transition.

1.8 Make the Case

Most challenges require approval from agency leadership or someone else. When developing your challenge, think of a business case you can present for approval. This step helps you to distill the value proposition of your challenge.

After you make the case, your leadership should understand how the challenge contributes to the agency mission, the partnerships involved, and who the audience and stakeholders are.

Like any business case, you'll also want to show the potential return on investment.

Key Takeaways

1. Always tie your challenge idea back to the agency's mission and measurable outcomes.

You want to inspire people through your challenge, and that doesn't just mean those who ultimately will propose solutions to your problem. Your colleagues and leadership also need some inspiration.

Focus on the anticipated outcomes related to your agency's mission. This will help those at your agency see your challenge as a serious approach to achieving results and more than just a way to engage the public.

Challenges serve many purposes. They can focus attention on an agency topic, bring fresh perspectives to a problem, obtain an actual solution and accelerate agency goals. To make the case that a challenge is an effective tool for a given purpose you must explain how the challenge and its expected outcomes align with your agency's missions and goals.

To gain approval and support for your challenge, be clear about the goals and outcomes. Go beyond the prize award. An outcome should demonstrate how a solution will be used, how agency stakeholders might use it or be affected by it, and how it will support your agency's mission and goals.

A solution can benefit the agency directly or indirectly. Indirect outcomes could include stimulating a market, advancing a technology or engaging a new audience.

2. Anticipate questions.

Many people aren't familiar with challenges, so be prepared to describe challenges in general and how they're being used by other agencies across the government.

Identify others within your agency or department that have run a challenge to learn how they addressed certain issues. If your agency has a challenge lead or coordinator, that person probably will have resources you can tap as well.

Be prepared to talk about the [unique benefits](#) that challenges offer and how they can be used to complement contracts and grants. Remind your leadership and other offices that the process will look different than a traditional program. After all, that's the point! If you've done your research and know a challenge is the right approach, resist pressure to force your project to look more like a contract or a grant.

Use examples from other federal agencies (or your own agency) where a challenge had a demonstrable impact.

3. Start your roadshow early and be open to feedback.

Earlier in the process, you began [building your team](#). Conduct a roadshow to key offices (e.g., legal, communications, procurement and program offices with a stake in the subject matter) to propose the idea while it's still in development. This will give you a chance to enroll those offices as co-designers. You may have to go through an approval process to design and plan your challenge and again when you're ready to [announce the challenge](#). It will be easier to move your project through these approvals if you've already started socializing the idea.

Other offices may have concerns or advice that could strengthen your challenge design. Remain open to tweaking your concept and design as you bring more people on board to champion your challenge.

Phase 2: Develop

In this phase you'll determine the challenge structure and implementation timeline. During this critical step, you'll work with internal groups to establish eligibility and submission requirements, terms and conditions, and judging criteria. You'll connect with your communications team to outline your announcement and ongoing outreach strategy to engage potential solvers.

2.1 Design the Challenge Structure

Once you have defined the problem, researched the state of innovation and established desired outcomes, it's time to create the challenge structure. The term "challenge structure" refers to the design for the overall process, elements and timeline of the project.

You'll make several design choices when finalizing the structure to help you achieve goals and outcomes you defined for your challenge. Challenge design is exciting, because you can use myriad approaches and structures to arrive at your desired outcomes.

In some cases, you can conduct your challenge in stages to achieve iterative and incremental innovation and to target different solver populations. Alternatively, you can design your challenge with one competition phase in mind.

You also have choices when it comes to offering incentives to participants. In addition to prize money, you should determine what other incentives would be most valuable to innovators. Non-monetary Incentives could include access to testing facilities, time with influential experts, advanced market commitments and services such as business incubation and acceleration assistance.

So, yes, you have to consider a number of questions when structuring your challenge:

- What's the timeline for the challenge?
- What are the competition phases? Is it just an ideation? Do you want to have a demonstration or pilot phase?
- What incentives and support will you offer to participants? What are the monetary and non-monetary incentives? Will you make bulk payments or milestone payments?
- What's the setting for the competition? Is it totally virtual? Will it be head-to-head in person? Will you have a staggered performance competition?
- What's the award structure? Will there be a single winner? Will you make multiple awards across different categories?
- What are the performance requirements for submissions?
- As you can see, there's a lot to think about in terms of structure. Also, always consider the challenge type and desired outcomes to get the best possible solutions from your participants.

Key Takeaways

1. Key considerations for your challenge structure.

Deciding how to structure your challenge is integral to the design process and ultimate success of your challenge. Some challenges can be implemented with a simple approach, and others require more structure. A challenge aimed at developing new technology may require the use of multiple milestones or phases to guide participants toward desired outcomes.

For a more complex competition, the milestones and phases should divide the overall goal of the challenge into smaller parts, each with a clearly defined outcome, deliverable or evaluation criteria that will lead participants to a successful solution.

Here are some things to consider when designing your milestones and phases:

- Is there a way to divide your challenge to align with the solution development process? If you're asking for prototypes, you can align your challenge with the traditional prototype development process with a design, implementation and final testing and evaluation phase.
- If your solution requirements allow for a wide range of possibilities, it may make sense to start with an ideation phase in which participants submit their proposed solutions for evaluation before implementing them. This allows you to weed out unsuitable ideas early and saves time and resources. It also removes a potential barrier to participants, allowing them to have their ideas validated before putting an extraordinary amount of time and work into their submissions.
- Should you use one round of judging or multiple rounds? Consider whether different judging panels are needed for different rounds (e.g., technical experts to assess technical feasibility and policy experts to assess legal practicality). Also, consider where you need different evaluation criteria at different points in the challenge.
- How much guidance will you give the participants to develop solutions in line with the goals of the challenge? When should you provide this guidance and how will you do it? For instance, will participants need to work with a technical mentor or specialized equipment during the challenge? If so, you might tie these resources to a specific phase so they are used efficiently.

You can also use a contractor or a facilitator that can help your team discuss, design and implement the challenge. GSA maintains a list of marketing consulting services vendors that include several [competition and challenge services providers](#).

2. Integrate incentives into the challenge structure.

Once you have an idea of the challenge structure, make sure each part has appropriate incentives that drive sustained participation and achievement. One option is to offer monetary awards (as authorized by the American Innovation and Competitiveness Act and other legal authorities) for results at any of the challenge milestones. Cash prizes are a great way to motivate participants, but they require careful consideration. A legal authority may come with stipulations, such as whether participants must be U.S. citizens. You'll need to account for prize amounts in the [challenge budget](#) and determine the process for [paying the participants](#).

You can also use non-monetary incentives to encourage participation. Review the Key Takeaways in [Step 4.3 \(Awarding Non-monetary Incentives\)](#) for ideas and best practices.

Consider your audience and your desired outcomes when deciding how best to incentivize participants. For example, providing a trip to present their results to your agency leadership may be a great incentive for K-12 and university students. However, startups and small businesses may be more motivated by access to government resources and expertise.

For monetary awards, make sure the size of the award matches the amount of effort, resources and expertise required of participants. If you're asking participants to design a logo, you can offer a smaller prize amount. If you're asking them to design a self-driving car, you may need millions of dollars for them to justify their participation.

Agencies often run challenges to engage innovators that don't typically apply for government funds. Because a challenge lets an agency pay only for a successful solution, the research-and-development cost and risk shifts almost entirely to the innovator. The incentive piece of a challenge often limits participation to those who can afford the risk of not winning. Aim to create a fair, balanced incentive arrangement that doesn't exploit the innovator. You can accomplish this through a phased approach that provides seed funds as the competitors advance through the competition. This also sets up natural points in the challenge for generating publicity as you communicate the results of each phase.

You can also conduct a "needs assessment" to determine what types of non-monetary incentives will most benefit your solvers. Here are some broad categories of valuable non-monetary incentives:

- **Strategy and business model:** Identify and connect innovators with appropriate business experts to design flexible business models capable of attracting financing and steering growth. Work with innovators to identify potential pathways to growth. Help them set and achieve scale goals and define an implementation approach.
- **Organizational support:** Help innovators attract and retain the right people for the job. This can include on-the-job training that covers management, financial and professional development topics.
- **Access to experts and specialists:** Provide access to relevant experts and mentors in technical, geographic or cultural areas.
- **Prototyping, testing, iterating, refining:** Provide access to potential users and focus groups. Identify feedback loops in the design process and emphasize improved measurement and evaluation to inform the next iteration of the innovation.
- **End-user expertise:** Provide funding for an innovator to gather data on end users. This can include community adaptation and integration, market research, user-centered design, product/service integration, maintenance and training.

- **Logistics, production, supply chain, distribution:** Encourage an innovator to gather data on the distribution, supply chain, local/non-local manufacturing, tariffs and last-mile areas of their solutions.
- **Access to finance:** Identify opportunities for additional funding (e.g., investment, grants, donations, revenue). This could include evaluation experts to help make the case for the potential impact of a solution.
- **PR, branding, marketing:** Encourage an innovator to make use of communications experts, PR opportunities, media training, storytelling and marketing to drive demand and increase visibility.

3. Develop the challenge timeline.

Determine when to begin the challenge, how much time you need to allot for it and specific deliverable due dates.

Provide enough time for participants to develop a solution, especially for challenges that require extensive research or the development of software and hardware prototypes. Challenges typically allow between two and six months for these types of activities. Also, allocate enough time to evaluate the solutions and choose a winner. This could take a few hours if you convene a panel of judges in person to evaluate all the solutions, or it could take place over the course of several months.

When determining dates for your challenge, take into account time constraints your target audience may have. If you want to attract university students, think about beginning the challenge early in either the spring or fall semester and avoid scheduling milestone deadlines around exam season. If your challenge is for middle school students, it's probably better to launch it in the fall and allow for submissions over the summer.

When you're ready to make awards, look for ways to sync up with another agency event or date of significance to the challenge topic. For example, the Desal Prize announced winners on Earth Day to generate media exposure for the innovators and to maximize social outreach regarding the need for energy-efficient water technologies.

Don't forget about your own constraints related to funding. Will the budget you're planning to use expire during this fiscal year? After two years? Can your agency convert money allocated for prizes to "no-year" dollars? Can you extend the funding for the challenge by obligating the money through a contractor that can support the implementation of a challenge? Agencies running multi-year challenges often go through a contractor so the funds are obligated and remain available for several years.

Finally, include ample time for internal review and clearances, as well as any agreements or contracts you need to put in place.

4. Structure your challenge to enable the acquisition of winning solutions.

Your agency may want to procure solutions that result from a challenge. If so, consult early with your acquisition office. You may have to adjust the structure of your challenge to align it with the Federal Acquisition Regulations (FAR). Small changes to your structure at this point can create a smooth path to acquire winning solutions in the future.

If this is one of your goals, there's a lot to consider and discuss with your acquisition office.

Leverage full and open competition: Stipulate in submission requirements and terms and conditions that results of the challenge may be considered part of the proposal and a major factor in a subsequent contract award evaluation. Determine ahead of time what information must be provided as part of the solution that will be necessary for the follow-on acquisition process. Think of the challenge results as an oral presentation that could be used to substitute for or augment a proposal for a follow-on acquisition.

Integrate challenge participation into past performance evaluations: Think about additional information you may need from solvers so you can use challenge outcomes as a source of past performance. You'll need this information to establish the relevance and currency of the solver to meet the specified need and "ability to perform" requirements of a follow-on acquisition.

Negotiate government purpose rights to intellectual property as part of the challenge [terms and conditions](#).

2.2 Develop Submission Requirements

Your target audience has to understand what you want. Develop appropriate requirements for challenge participants to follow in their submissions. Some challenges include detailed rules that apply to the submission and judging process to maintain fairness. For example, a prototyping or technology development challenge may have rules restricting the weight of a submission or how technologies interface to power sources.

Be clear. Participants and judges will thank you.

Key Takeaways

1. Be explicit.

Decide during the planning process what criteria are important for solutions to meet. Document these clearly and explicitly.

If you're asking participants to develop a website, specify which web browser versions, devices and operating systems it should support. Participants will have a better understanding of what's required of their solutions, and your team will have a legally justifiable method for disqualifying any that fail to meet these criteria.

Certain terms and expressions mean different things to different people. Your requirements should leave no room for interpretation.

For example, a submission deadline of 11/10/2025 would commonly be interpreted as November 10, 2025, in the United States. But if your challenge is open to those outside the country, some participants may think the deadline is October 11, 2025.

2. Don't be overly constraining.

It's good to be explicit, but artificial constraints can turn off potential solvers. Try to be as broad as possible in your submission requirements. For example, allow graphic designers to use a variety of file formats, and allow coders to use different programming languages.

2.3 Develop Terms and Conditions

Work closely with an agency attorney for this step.

You need to prepare clear terms and conditions for your challenge that participants then must acknowledge. Terms and conditions should address prize eligibility, intellectual property rights (including copyright and trademark), liability and privacy policy.

Some legal authorities mandate specific competition requirements that can be addressed through the terms and conditions. Your agency may also have its own unique constraints.

It may be useful to also consult with an open-source advocate at your agency if you're planning to have the results become open-source.

Key Takeaways

1. Work with your lawyers.

We can't say it enough. Work closely with agency legal counsel as you define your challenge's terms and conditions. You need to understand any legal constraints, applicable policies specific to your agency and the legal authorization to implement the challenge before making final decisions.

An agency could use several legal authorities to structure a prize competition, including the American Innovation and Competitiveness Act (which updated the America COMPETES Act), agency-specific procurement authority and Other Transaction Authority (OTA). There are others as well.

2. Define who's eligible to compete.

Eligibility criteria should reflect your target audience (e.g., students, nonprofits, universities or companies) and ultimate goal (e.g., an algorithm or a poster). This criteria must also adhere to the challenge's legal authorization.

Eligibility is limited to U.S. citizens, residents and companies for most challenges run under the broad legal authority provided by the American Innovation and Competitiveness Act. Even if another legal authority allows for foreign eligibility, it still probably won't allow for participation from restricted countries based on [current sanctions](#).

Age restrictions also could come into play as additional considerations are required to work with solvers under 18.

3. Be aware of liability and indemnification requirements.

The American Innovation and Competitiveness Act has specific requirements that will help guide the development of the terms and conditions for your challenge. Liability is a critical issue.

The law requires participants to obtain liability insurance or demonstrate financial responsibility for damages that could occur while competing in the challenge. Participants must also indemnify the federal government against damage claims.

Again, don't wander into the legal forest alone. Consult your general counsel.

4. Clarify your intellectual property requirements.

Submitted solutions often will be protected or eligible for protection under intellectual property laws. The federal government can't acquire an interest in intellectual property without the participant's written consent. However, the government can negotiate a license to use any intellectual property submitted as a solution in a challenge.

When considering requirements, take into account your challenge goals, the federal government's need to license solutions and whether any requirements will create a barrier to participation.

It's crucial to negotiate the Government Purpose Rights of intellectual property as part of the terms and conditions if you plan to acquire solutions for government use after the challenge.

Prizes to Procurement

Use Challenge Results as Technical Evaluation for a Follow-on Procurement: Consult with your contracting office if your challenge will involve a follow-on procurement. Clearly articulate in the terms and conditions that results of a solver's participation in the challenge could augment a full technical proposal for a follow-on FAR-based acquisition.

Use Challenge Results as Part of an Advisory Multi-Step Process: Consult with your contracting office to determine if the terms and conditions stipulate that results of a solver's participation may be used by the agency as the basis to participate in a follow-on acquisition. Familiarize yourself with [FAR 15.202\(b\) Advisory Multi-Step Process](#).

Include Relevant Terms and Conditions Required for Execution of Intellectual Property Strategy: Engage your agency counsel for advice on how best to develop your intellectual property management strategy.

Consider addressing the government intellectual property needs in the terms and conditions for your challenge. For example, the [Department of Defense Federal Acquisition Regulation Supplement](#) contains specific language on the use of Government Purpose Rights in technical data and computer software that can facilitate the acquisition of solutions resulting from a challenge. Once these rights are acquired, the associated data and software can be provided to a third-party as government-furnished information in support of a government purpose, such as the execution of a contract.

2.4 Define Evaluation and Judging Process

The appropriate evaluation and judging process can vary widely depending on the challenge type. Your particular problem might lend itself to solutions that can be judged objectively (e.g., the fastest possible algorithm) or with subjective criteria based on expert opinion. If a challenge is designed to achieve multiple outcomes (e.g., technological performance and usability), it may include both subjective and objective evaluation.

In this step, you'll establish the process to evaluate submissions. This includes defining specific criteria; identifying judges, subject matter experts and reviewers; and writing instructions to ensure a fair, transparent process and methodologically sound outcome.

Depending on the complexity of the challenge and criteria, you may need to develop a scoring function that uses performance data generated during the evaluation processes. Make sure your scoring function actually supports the type of innovation you want. Depending on the legal authority under which you're running the challenge, you may be able to use judges from other government agencies, foundations, academia or even industry.

The judging process refers to the evaluation of the challenge criteria. This can be done in person or virtually depending on the challenge type. Ideation challenges generally are judged virtually using a review template with specific questions related to the evaluation criteria. Technology solution challenges may involve virtual assessment to select the best ideas followed by in-person judging to assess performance.

Key Takeaways

1. Incorporate expertise.

Include your judges early in the development of selection criteria. Their technical expertise can lead to an easier and more transparent selection process, both for them and the participants.

2. Decide on your judging mechanism.

When developing judging criteria, first decide on an appropriate judging mechanism. This is determined by the competition topic and the policies and practices of the sponsoring agency.

Consult with appropriate agency staff (legal, operations, finance, subject matter experts, etc.) to determine if there are agency restrictions on the use of internal or external mechanisms. Use the challenge format to guide the specific system selection (subjective, quantitative, algorithm, etc.) Establish and adhere strictly to a well-defined judging mechanism. This gives you a more legally defensible basis for judging the competition and better safeguards your agency from potential litigation.

Your agency and legal authority both may have specific requirements on who can be a judge. Some agencies require outside judges. Others require judges to be federal staff or special government employees.

3. Equitable assessment is paramount.

Fair and transparent judging criteria are essential. State all criteria clearly in your challenge announcement and apply it to each submission. You can't use any criteria not included in the challenge announcement to judge submissions.

Your criteria can't create an unfair advantage for any group or individual. For example, don't require the use of resources that aren't public or that all participants can't equally access.

4. Ensure measurability.

The judging process is also shaped by what kinds of criteria the judges use to evaluate submissions. These criteria could be quantitative or qualitative, analytical or semi-empirical, objective or subjective.

Craft each evaluation criterion so it can be measured. The judge or measurement system must be able to determine if each criterion has been met.

Solutions will have many different assets with varying degrees of effectiveness. Calibrate the measurement scale for each criterion to reward exceptional results in a way that demonstrably links to the stated problem.

5. Develop a judging protocol.

Depending on the criteria, judges may be required to reach a consensus or majority vote. Also, you may require your judging panel to meet in person depending on the process.

If your challenge requires subjective judgment, develop an assessment protocol. Train all judges to use the protocol before judging begins. The protocol must be used when judging every submission. Determine the number of reviews to be conducted for each submission and define a procedure for handling anomalies, such as a tie. Consider designating one judge as the final selecting official in a tie-break scenario.

It's critical to review procedures and expectations for in-person judging scenarios. Establish any roles for the process, such as judge panel foreman, liaison with the challenge manager, etc.

Follow the judging protocol you develop in this step to ensure fairness and transparency. It also will help you defend your challenge should participants question the validity of awards. The Federal Trade Commission had to do just that in 2015 when a participant who didn't win its Robocall Challenge [appealed the decision](#) to both the Government Accountability Office and the U.S. Court of Federal Claims seeking damages.

6. Manage conflicts of interest and non-disclosure agreements.

Be prepared to deal with possible conflicts of interest, especially when your challenge is in a field where judges may have interacted with potential solvers.

Seek input from your legal counsel and address potential conflicts before formally selecting your judges. The nature of the conflicts and how you deal with them can have an impact on how you structure the judging process and time needed to evaluate submissions.

Make sure judges sign any necessary non-disclosure agreements. Those coming from government agencies may already be bound by agreements specifying governmental responsibilities. But you may need different kinds of non-disclosure agreements for judges employed by other entities. Consult your legal counsel to determine what agreements are necessary.

Ask your legal counsel also about managing conflicts of interest involving outside experts who provide advice in helping you develop the challenge.

2.5 Develop a Communications Plan

In this step you'll plan how to communicate important information about the challenge to various audiences and continue this outreach throughout the entire process.

Your communications plan should define:

- audiences (e.g., target solvers, partner organizations, influencers, end users and the general public)
- channels (e.g., website, news outlets, email blasts, word-of-mouth and social media)
- content (e.g., what information should be shared with which audience)

Use your plan to detail the timing and frequency of communications to generate interest at key moments. Consider the public relations boost from launching the challenge or announcing your winners at an agency or industry event that already commands media attention.

Key Takeaways

1. With a comms plan, more is better.

The communications plan is a key strategy document that you can share with collaborators and stakeholders. As such, it should include a variety of information related to the challenge timeline, key messages, product descriptions, press releases, target audiences, media contacts, awards and prizes, and more.

The “comms” plan is a living document that you and your team will revise and update frequently. Work with the appropriate people in your agency — such as the public affairs and legislative affairs offices — to ensure everyone is aware of and understands the challenge and can effectively promote it.

2. Develop and share key high-level messages.

You’ll have many opportunities to deliver key messages throughout the course of your challenge. But everyone needs to know what they are, starting with you.

Develop three to five key messages and share them early with collaborators and partners. Their involvement in fine-tuning these messages will ensure consistency no matter which organization is communicating about the challenge.

Don’t drag your key messages into the weeds. Keep them high-level so that different audiences, and ultimately, the general public “gets it.”

Think about creating a graphic representation for the challenge. This can help brand the competition across social media and any other communications material you produce.

3. Take advantage of social media.

Use the comms plan to track and share social media links. Agencies may have multiple Twitter hashtags, Facebook profiles and web pages from which they can push out messages, notices, updates and reminders of key dates and events.

Use the comms plan to document/archive and track tweets and posts you’ve written for release. It may help to set social media outreach goals upfront. You may want to aim for a certain number of tweets/posts per week or set a goal for impressions on Twitter or shares on Facebook and LinkedIn.

Make social media analytics a regular activity for your communications lead. It’s important to constantly track the effectiveness of your social media approach so you can adjust as needed.

4. Look for promotional opportunities.

Keep an eye out for conferences and events related to your challenge topic. They provide opportunities to share previews, launch your challenge, announce updates and award prizes. Your team and collaborators can use the comms plan to suggest appropriate venues.

Consider national, regional and local/community events of different kinds. Look at webinars, conferences and festivals. Find events through communities of practice, agency research networks, professional societies and other organizations.

Your outreach strategy should take into account the best approaches to target potential solvers and other stakeholders. Consider how these people generally receive information pertaining to the relevant subject matter. For technology or scientific challenges this may include in-person gatherings such as conferences or summits. If you want to reach a larger audience, you may be able to save time and money by advertising the challenge on a conference or society website. To reach a broad audience, you may want to use an advertising tool such as Google AdWords.

Finally, don't underestimate the power of your social networks. Reach out to those in your network who wield influence and have large followings. Provide them with suggested language that conveys your key messages so they can help promote the challenge through Twitter, Facebook and other social media channels.

5. Communications planning also includes solver engagement and capacity building.

It's important to work with participants throughout the challenge, especially if your goals include capacity building or having solvers commercialize solutions after the competition.

You may need to help match solvers with people, resources and funding. Your communications plan should include any additional activities required to set participants up for success. This may seem like a lot of work, but your efforts will help innovators attract additional funding from other sources. Whether it comes from government grants or private investment, solvers will need your help preparing for and managing these sources of funding down the road. This is particularly true for funding that doesn't come from your organization.

6. Consider opportunities for interactive engagement.

Consider using more interactive ways to engage with people about your challenge:

- Solicit public comment on draft challenge rules.
- Run a pilot challenge to determine interest and gather feedback from the target participant population.
- Use scouting services to identify potential participants in challenges.
- Invite winners to present webinars on their solutions to target audiences.

2.6 Create an Implementation Plan

You've worked through your challenge structure, judging process and communications plan. Now you have to figure out how to get it all done.

Create an implementation plan that consolidates the activities and milestones identified through these previous steps to make sure you have enough personnel assigned to carry out the challenge effectively.

Think of it as your project management plan.

During this step, you'll also decide whether implementation will be carried out completely through government resources or if you need to establish contracts or partnerships for parts of your challenge. When challenge management is outsourced, consider making metrics data collection and results analysis a requirement of the management entity. Also, be sure to clearly outline roles and responsibilities between organizations.

Before publicly announcing your challenge, you'll need to finalize any contracts, partnerships and agreements you have created to implement your challenge. Never underestimate the time it will take to put into place interagency agreements or other contracts.

Key Takeaways

1. Develop a challenge implementation plan.

To create an implementation plan, you must take a closer look at how the structure, judging process, communications plan and other details come together to facilitate a successful challenge.

Ask the following questions to begin fleshing out your implementation plan:

- What resources will you need to actually launch the challenge?
- What, if any, requirements are there on data quality, quantity and security for various phases of the challenge?
- In many cases a challenge website serves as the interface between organizers and the solver community and requires careful design considerations. What features does the site need to accommodate registration, data access, submission of solutions for evaluation and other aspects of participation?
- Should you perform a test run of the challenge website or the competition itself before public launch? What resources do you need to make this happen?
- How many support personnel (FTEs) will you need to carry out the challenge?
- What is the process for collecting data or performance results during the course of the challenge? Will you need to draft an operating procedure for data or sample collection?
- What training aides, tutorials, frequently asked questions or other learning materials should you provide to participants?
- How will you present feedback to participants? Will you have a leaderboard, and what resources will you need to support it?
- Will you have a discussion forum or blog available throughout the challenge for contestants to ask questions of the organizers?
- Will you allow participants to team up during the challenge and provide mechanisms that make it easier for them to do so?
- How will you address any disputes about judging?
- How will you announce winners and distribute prizes?
- How will you disseminate results of the challenge?

- How will you store any reports and scorecards?

2. Should you outsource or use government resources?

This toolkit contains a lot of information on [identifying a legal authority](#) and the [requirements](#) that come with it. Make sure you understand the appropriate legal authority and how it affects the implementation of your challenge.

You may be able to carry out the entire challenge using government resources, or you may want to hire a vendor to handle all or part of it. It could take six months or longer to issue a contract, so factor this into the overall project timeline. The decision to use a contractor can also be affected by the terms and conditions of whoever puts up the money for the prize purse.

When using contractors, set objective performance milestones to enforce the implementation plan and create specific metrics you can use to measure success.

3. Make sure you have an appropriate challenge team.

The challenge team is responsible for implementing, operating and monitoring the challenge throughout the process. Designate a project leader and make sure all other team members know and understand their roles and assignments and how it all fits into the challenge timeline.

The project lead should be familiar with all aspects of the challenge and ensure that the skillsets of team members match their assignments. It's critical that you choose people with appropriate expertise for key aspects of the challenge.

Think about it. Do you really want to rely on legal advice from someone who isn't an attorney? Of course not. So it stands to reason that you'll want an actual IT specialist to provide any technical assistance and a communications expert to handle promotion and outreach. Also, make sure your challenge lead can carry out your entire challenge plan and not just pieces of it.

If it makes sense, consider a platform manager who can support the challenge infrastructure and data scientists to help with metric preparation and data analysis.

4. The right technical preparation will help your competition run smoother.

Use this checklist to make sure you're on solid technical footing:

- Make sure the challenge website provides all the information participants need. This may include background information about the challenge, the reason you're running the challenge, rules/eligibility for participating and winning, evaluation criteria and any other pertinent details. The site also should provide access to tutorials, data and other resources that create a level playing field for all participants across all phases of the challenge. This includes any access to training, a leaderboard and tests.

- Have a plan for helping participants who experience difficulty accessing the website, required data, evaluation platforms or anything else needed for the challenge. You may want to establish an email address or phone number participants can use for such support.
- Have a back-up plan in case your system goes down. Also, have a plan to recover from a system failure.
- Be ready to scale resources up or down in case of high or low participation to make the most efficient use of resources during the challenge.
- Obtain a realistic cost estimate for the IT platform or cloud resources before the project begins.
- Establish a process to pay winners. Will payment come from the agency, or can a partner organization or contractor pay the winner?

5. Have a process in mind for reporting.

Reporting is a necessary part of any government project, and a challenge is no different. You'll at least need to provide summaries to your agency about a challenge at various stages along the way and afterwards.

Create interim and final reports to capture the totality of your challenge experience. These reports give you an opportunity to review progress and examine milestones, particularly if you're using contractors. Decide what information to collect and include in these reports, who will put them together and for what audience.

These reports also will come in handy when the White House Office of Science and Technology Policy engages to seek information for the next biennial progress report on challenges and prizes to Congress.

2.7 Identify Goal & Outcome Metrics

At this point you should have defined your desired outcomes and goals. Now, you must determine how to measure performance throughout the challenge.

Goals may include soliciting specific types of solutions, reaching new audiences, saving lives or creating more effective products. Using your desired goals as a basis, design an agency-focused set of metrics to capture your outcomes. For example, you may want to measure the speed of a solution or the number of students reached. Whatever it may be, identify specific data to collect throughout the challenge that will inform your metrics.

This can be a difficult step. It may help to enlist subject matter experts, academia, foundations and refer to case studies of previous challenges.

Key Takeaways

1. Develop relevant goals.

Outcome measures can vary widely depending on the specific challenge and goal. Brainstorm with colleagues, the community and subject matter experts. Make the goals relevant to your agency activities and strategic goals without restricting yourself unnecessarily.

2. Measure your outcomes.

Outcomes can be qualitative or quantitative, but you have to be able to measure them. Outcomes that can be counted are simpler, but qualitative measures may better capture the depth and value of an outcome.

As always, make sure your outcomes include all of the information required for the biennial progress reports to Congress.

3. Be creative in your measurement.

Consider developing user surveys or public access data to provide a more complete understanding of your challenge's impact at the individual and community levels. Your agency leadership may have specific criteria for success that require a unique form of measurement.

4. Use your website to help with measurement.

Your challenge website actually may provide the most efficient way to measure outcomes. The website can easily capture quantitative data. For qualitative data, consider using the website to collect user feedback.

5. Remember that your knowledge will be added to the public domain.

The material in this toolkit comes from those who have pioneered the use of challenges in the federal government.

After you collect and analyze your outcome data, it will be your turn to share what you learned.

When establishing metrics, keep in mind that down the road others may come to you asking about the goals you achieved or the processes and procedures you employed for your challenge.

When all is said and done, there are a variety of ways to share what you learned. You can report information using standard agency communication channels or in conjunction with the Challenge.Gov program in the form of case studies, blog posts or even new content for this toolkit.

2.8 Prepare to Announce

Before you announce the challenge to the public, verify the actions you took in earlier phases to ensure you tie up any loose ends prior to launch.

Make sure:

- proper management and staffing are in place;

- the implementation plan and responsibilities are clearly understood by all staff, partners and support contractors; and
- the primary website, promotional materials and other initial communication products are finalized.

If you haven't already done so at this point, reach out to the Challenge.Gov program team. They can help you identify anything you may have missed as you prepare to announce your challenge. Also, you'll need to work with them to at least list your competition on Challenge.Gov, even if you're not using it as your primary challenge website.

Key Takeaways

1. Leave sufficient time for final notice and approval of launch with agency leadership and partners.

Leave enough time before going public to make sure everyone who needs to know is aware of your launch event and associated messages. You don't want to surprise agency leaders or partner organizations with a launch.

Final review and approvals can take time so make sure you get any necessary reviews and clearance of all launch materials as early as possible. If you're working with other organizations, get approval to include their logos and give them an opportunity to provide input on the announcement.

Finally, complete any required financial procedures related to obligation of funds to a contractor or partner before or in conjunction with the launch and announcement.

2. Publish your Challenge.Gov listing.

Make sure your Challenge.Gov listing is ready to go and includes all the relevant information and links.

If you're using Challenge.Gov as your main website to interact with participants and accept submissions, make sure your challenge page includes information about eligibility, prize amounts, rules and judging, and how people should submit solutions.

If you're hosting your challenge on another site, you still need to create a basic listing on Challenge.Gov. Make sure you fill out the required fields to do this and include the appropriate link out to your main challenge site.

3. Be Creative and open in the selection of a launch venue.

Be open to different ideas when choosing a venue to make your launch announcement. Confer with collaborators and partners early in the planning stages about spaces that are available within your challenge timeline.

You may choose a national or regional meeting or conference, or there may be other events or announcements that you want to tie into. Think outside the box.

Think about what posters, banners and other visuals you would use inside a venue to promote the challenge. If you're launching virtually, consider using a blog or a website not on your agency's domain to reach a broader audience.

4. Don't forget to maximize your communications.

Social media allows you to send your key messages around the world in an instant. Twitter, Facebook, blogs, LinkedIn and others are great ways to get the word out about a new challenge.

You'll also want to have your agency issue a traditional press release. Gather quotes from agency and thought leaders that reiterate your key messages for the press release and other communications materials.

Also, your partners and collaborators may have email lists that you can use to get the announcement out to an even larger audience. If you have judges from outside your agency, ask them to retweet your announcement and share it with their social networks through other means.

In short, take advantage of all the modes of communications you identified in your [communications plan](#).

2.9 Obtain Agency Clearance

Get the proper clearance and approval from your agency before you publicly announce the challenge.

This process will differ depending on your agency and the legal authority for your challenge, but it's likely to include formal approval from leadership, review and clearance from legal counsel, and obligation of funds.

If you're using the legal authority under the American Innovation and Competitiveness Act, you also need to make sure that you have all of the required information for the challenge advertised on a publicly accessible government website, such as Challenge.Gov.

Key Takeaways

1. Make sure you have the support of your senior leadership.

The last hurdle before launching your challenge is getting agency clearance. But you knew this was coming, so you've probably been speaking regularly with your senior leadership and legal counsel, and everybody's already on the same page. Right?

Because that's how it should work.

Gaining the support of leaders in your organization will make the agency clearance process so much easier. When we say "leaders," this could mean your direct supervisor, the chief counsel or even the head

of your agency. If you're not sure what clearance is required, there may be a challenge mentor or someone else who has run a challenge at your agency who can provide guidance about obtaining clearance.

Try to set up individual briefings about the intent of your challenge with the appropriate people, and prepare a one-page summary that highlights your goals and expected outcomes. You can even use this summary as a cover sheet when you send documents around for clearance.

2. When necessary, work closely with legal or other agency process offices.

If possible, work with your agency clearance offices when drafting your documents. That way, you can identify issues that need attention sooner rather than later.

Your challenge is likely to move through the clearance process much faster if the officials required to sign off already have seen drafts of the documents. This means legal personnel, your supervisor and funding officials.

3. Make sure you understand and have addressed all requirements.

The documents required to launch a challenge vary depending on your agency. You can minimize complications if you address all requirements before you start seeking agency clearance. Many of the requirements are interconnected, whether it's guidelines for selecting judges, eligibility rules or judging criteria.

But there's no way around it. At this point, you have to be able to outline the entire process.

Phase 3: Conduct

In this phase you'll put your plans into action. You'll roll out your communications plan, accept submissions and interact with solvers to generate interest and enthusiasm throughout. After your submission deadline, you'll begin to evaluate entries, select winners and verify their eligibility. Successful execution of this phase is critical to maintain credibility of the challenge and your agency.

3.1 Execute the Communications Plan

The [communications plan you developed earlier](#) specified how to communicate your challenge to various audiences and solver communities. Now it's time to execute this plan to deliver your content through various communication modes:

- website
- news outlets
- email blasts
- word-of-mouth
- social media
- in-person events

Give yourself enough time to get approvals and clearances for press releases, blog posts and other content. It may take longer than you think, so plan ahead.

Be prepared to answer questions from participants, judges, stakeholders, the press and the general public. Make these answers available for everyone throughout the challenge to ensure everybody is operating with the same information.

Key Takeaways

1. Develop strong relationships with different communications teams in your agency.

Federal agencies are more familiar than ever with challenges. Even if yours is new to the concept, you'll still want to involve different communications teams within your agency to promote the progress of your challenge.

These teams may have a variety of ways to reach different audiences. Think about how they can reach your target audiences. An announcement from your agency's public affairs office likely will get more attention than one from your program office. Also, the more successful your challenge, the more other communications teams in your agency will want to feature it.

Still, it's not as simple as knocking on a door and asking them to put out a press release or tweet. Different communications teams have distinct cultures, protocols and timelines. If you understand how they operate, then you can work with them to set specific protocols and timelines that serve your challenge.

You already have the firm timelines laid out in your official rules. If you build strong relationships with your agency's communications teams, you should have no delays in letting the world know about your good work.

2. Decide who does what.

If you're using a contractor or vendor to run your challenge, they may have their own communications lead. Decide what communication will come from your contractor and what will come from your agency.

Keep in mind that the approval processes will be different. It could take two weeks to get approval to publish a blog post on your agency's website, while it may take your contractor just a day to post something similar on your challenge website.

That doesn't mean you go with one or the other. Remember: You can reach different audiences through different outlets.

3. Don't underestimate how long it can take to execute your plan.

You can accomplish parts of your communications plan with the snap of your fingers. Other parts may take longer to piece together.

It's easy to write a short blog post on a cool new video from a participant, but you need a place to put that content. And it will take more time and effort to build out the infrastructure of a challenge website where you can do just that.

If your agency is hosting the challenge website, allow time for approvals before it can go public. You don't want any holdups to derail your entire challenge. That's why you've built those strong relationships with different communications teams in your agency, right? Good. Because that should help mitigate any risks on this front.

If you know you'll be running more than one challenge, consider creating an overall program site hosted by your agency. It's easier to change the content of an existing site rather than creating new sites each time you launch a challenge.

4. Write for multiple audiences.

Your communications plan outlines what products you'll use to reach various audiences. Now, you'll want to customize your writing to reach those audiences.

The language you use to describe the goals and outcomes of your challenge should be clear to everyone you want to reach, including your agency's leadership. You may want to develop different communications materials for different audiences.

A basic principle of crowdsourcing is to encourage people from a variety of backgrounds with different skills to work on your problem. To do this, use [plain language](#) to explain goals, requirements, processes and progress throughout the challenge. It's good practice, and it's the [law](#).

This doesn't mean you should dumb things down. It does mean you should avoid using jargon and "government speak." The world is full of smart people who will understand advanced concepts but may not recognize the way in which you talk about it with colleagues and other insiders. Use simple, universal words even when explaining technical details.

You're running an open competition for ideas. The last thing you want to do is deter people from participating. Make the challenge accessible to everyone to attract more than the so-called usual suspects.

You may still decide to develop different communications materials for different audiences, say the general public vs. technical experts. If you do, direct people from one set of materials to the other so everyone still has a chance to see everything.

5. Provide an archive for people to easily track evolution and progress.

Challenges can unfold over months or even years. Along the way you'll likely generate regular content, such as newsletters, blogs and team profiles. Create an easily accessible archive of news stories and communications materials so those who come to the challenge later can understand what happened before they arrived. This provides a narrative arc that will help bring newcomers up to speed on your challenge.

6. Track the impact of your communications.

You'll communicate many different things in a variety of ways as your challenge progresses. A lot of the content you generate will end up on your challenge website and social media, where you can easily track analytics and how readers interact with the material.

IMPORTANT: If you want to conduct analytics, you need to be ready from the get-go. Talk to your local web guru or challenge partner about how you can configure your social media profiles and websites accordingly.

You can collect information on "click-through" rates, how much time people spent on your webpage and social media impressions. All of it will help you understand which communications methods have been the most effective. You may see some channels working better than others and consider phasing out ineffective ones to focus on the successful ones.

7. Your communications plan should be a living plan.

Pay attention to what's working and what isn't with your communications plan and adjust accordingly.

Even after you launch your challenge you may need to make changes to your overall plan or strategy to reach certain audiences. Blaze new trails. Add key industry or research conferences to your communications plan.

Search all corners of the media world for articles that mention your challenge, especially if they're favorable.

8. Amplify and cross-promote your communications.

A good news story gets picked up by other outlets and spreads far and wide. Think about ways to “cross-promote” communications about your challenge.

If your program-level communications team writes a blog, make sure your agency’s public affairs office links to that piece in its communications.

If local media features a participant from your challenge on the nightly news or a newspaper, highlight that piece through social media and other channels.

9. Check in often with your extended challenge team.

Communication among your team members and partners is a critical part of any effective external communications plan and challenge.

Your challenge team likely will include more than just the core team within your agency. You may have industry and other non-governmental partners assisting with your challenge.

Hold regular check-ins with all involved so everyone is on the same page and all moving parts of a challenge stay aligned. Use these check-ins to acknowledge the efforts and achievements of all your extended team members.

By running a challenge, you are motivating members of the public by recognizing and rewarding their hard work and good ideas. You should be doing the same thing with your implementation teams.

3.2 Accept Solutions

Your approach to accepting solutions from solvers will vary based on challenge type, legal authority and what’s being submitted.

A submission could be a paper proposal, video, poster or code provided as a link or attachment. It also could be physical hardware brought to a demonstration event.

Provide specific guidance to solvers in the submission requirements. They need to understand from the get-go what they’ll need to do to submit. Consider proper delivery, storage and handling when actual hardware is involved.

During this step, you’ll also begin to carry out the intellectual property decisions you made in your [terms and conditions](#), which will govern how you can use the solutions. The judging process also can affect how you organize and store submissions.

And don’t forget federal records requirements. Understand your agency’s process for managing records and know how long you must maintain submissions as federal records.

Key Takeaways

1. Execute your plan for accepting solutions.

When you accept solutions, you trigger the start of the judging process.

You can handle the submission and judging process in pieces or all at once depending on the amount of material. Follow the [implementation plan](#) and [evaluation process](#) you developed in Phase 2.

You may have a third-party contractor acting as your challenge administrator. If so, that contractor may be responsible for making sure all the submissions come in on time and meet requirements.

If you haven't hired an outside challenge administrator, then your internal team will have to manage the submission process.

It's best to plan for a large number of submissions and be prepared to tap additional judges if necessary. You may even get more than you can manage so have a risk mitigation plan ready in case the response to your challenge is overwhelming. It's unlikely, but it has happened.

Some challenges call for paper-based or online submissions. Others require participants to send in prototypes of devices. Set up a clear chain for handling submissions and make sure they can be accessed by challenge administrators, judges and others who need them.

Place appropriate restrictions on submissions to avoid cheating and unsportsmanlike conduct. An example: In managing the acceptance process for its International Space Apps Challenge, NASA requires all projects to have a profile added to the Space Apps [website](#) before they can be considered by judges. This process works for solutions developed at weekend hackathons around the world. All work is submitted via GitHub, where the solutions can be accessed for global judging.

2. Most solutions will be submitted less than 48 hours before the deadline.

You've given participants three months to submit solutions to your challenge. For two months and 28 days, you've seen only a trickle of activity from solvers.

If you're running your challenge as a completely virtual experience, you may even wonder if there is anyone out there working on a solution to your problem.

Don't stress. But get ready.

You're likely to see a deluge of submissions in the hours leading up to the deadline. Even if your submission period is open for several months, most solvers will submit in the final two days. That's just how it is.

Because of this, it's a good idea to set a submission deadline during normal business hours. You want to make sure your team members are available to assist solvers with any technical difficulties, questions and concerns right up to the final minute. This is easier to do at 3 in the afternoon than at midnight.

If you've done a good job of implementing your communications plan, you should expect a large number of submissions. However, if you don't receive enough submissions for a robust competition, consider extending the deadline if your original rules allow for it. For this reason, it's good to build *some* flexibility into those rules and timeline.

3. Be prepared for issues during submission time.

Technical difficulties — the bane of modern existence.

Generally, accepting submissions through a web portal is consistent and efficient. But technical issues are inevitable.

Since most submissions arrive in the final hours, you need to have someone ready to handle questions, concerns and technical issues.

We'll say it again: Set your submission deadline for a time when the appropriate members of your team are available. And 11:59 p.m. probably won't work.

If you're asking for hardware or prototypes, be prepared for issues with shipping and receiving.

4. Eligibility Considerations

Your terms and conditions should specify eligibility requirements in accordance with the legal authority you're using. These requirements may cover a variety of concerns including indemnification and liability, insurance, and citizenship.

The broadest legal authority — first provided by the America COMPETES Act and updated by the American Innovation and Competitiveness Act — requires that, “in the case of a private entity, [it] shall be incorporated in and maintain a primary place of business in the United States, and in the case of an individual, whether participating singly or in a group, [he or she] shall be a citizen or permanent resident of the United States.”

Have a clear process in place for participants to prove they meet eligibility requirements before they submit. This way participants won't spend countless hours on a submission that can't legally win an award, and your judges only have to evaluate submissions that can.

You can do this by including a self-certification in the submission requirements: “By submitting a solution, participants are self-certifying that they are eligible.”

But there's no way around it. You'll still need to [verify](#) eligibility before you make the final awards.

5. Stay true to your terms and conditions.

The [terms and conditions](#) of your challenge set the eligibility and participation requirements for solvers. They also dictate your agency's relationship with the solutions, especially as it relates to intellectual property.

Your terms and conditions should specify how submissions will be handled, if and when they'll be made public and what will be done with them.

As a general rule, it's safest to stay true to your original terms and conditions. This ensures participants remain confident and comfortable with your challenge process.

It goes without saying: You should work closely with your agency's intellectual property counsel as you write your terms and conditions.

6. Allow teams and judges to ask questions about submissions before the deadline.

You may think you've done a first-rate job explaining technical details, but issues can arise after your challenge rules go public. And there's always room for interpretation.

Some challenges have well-defined requirements and ask for simple submissions. Others require teams to physically deliver prototypes of complex devices. For the latter, make sure those devices meet testing specifications so data can be fairly and accurately assessed.

Consider letting participants ask technical questions before they submit their devices to make sure they can be properly tested. You can even include this step in your [communications plan](#).

You may even want to convene participant forums well before the submission deadline to allow unanticipated questions to surface in a fair and transparent way. You don't want miscommunication to be the cause of any disqualifications.

Record all questions you get from participants and include them in a "frequently asked questions" document. Sharing your answers with everyone maintains a level playing field.

7. Create incremental indicators.

Don't wait until the day of an in-person competition to determine how many competitors will be there. Set incremental checkpoints to gauge response to your challenge.

Require participants to register well before the competition. Ask for the number of team members, proof of eligibility, etc. You also can set a deadline for work-in-progress submittals. Ask participants to provide the current status of their solutions with a photo, video or short written summary.

These checkpoints will help you plan for those who actually show up on competition day. Competitors who have made little to no progress are likely to drop out or not show up. And if they didn't register then they can't compete.

3.3 Manage the Judging Process and Select Winners

A challenge can seem like a feel-good, win-win situation for both your agency and participants. At the end of the day, though, it's still a competition. And competitors expect and deserve a fair, transparent process for deciding winners.

It's crucial that you select and appoint only qualified judges to ensure an environment where quality and ingenuity are recognized above all else.

The judging process may take place in person or remotely. Judges may gather on a conference call or via webinar. No matter the setting, you should document key decisions and stick to the evaluation guidelines you defined when you developed submission requirements.

An evaluation process can be objective, subjective or a combination of the two. Competitors should know how they'll be evaluated before they submit solutions. It's useful to provide all participants with feedback from judges.

You can even divide the judging process into stages. This makes sense if there's a large number of submissions to prioritize before a final panel reviews them.

Note: You may need to have judges sign forms, such as nondisclosure agreements and disclosures of conflicts of interest.

Also, your winner selection officials may or may not be your judges. It all depends on how your agency administers challenges.

Key Takeaways

1. Build the right judging panel.

Your judges can make or break your challenge.

You worked hard to attract solvers with different skill sets and backgrounds, and you don't want their innovations to be overlooked or dismissed during the judging process.

When selecting judges, consider their background, expertise and ability to work on a panel. Recognize them as members of a team even if they work remotely and never meet in person. They should understand the goals of the challenge and be open to new ideas proposed in solver submissions.

If possible, judges should take part in constructive debate about the submissions. It depends on your challenge, but you may want your team of judges to reflect a range of expertise and interests. This way, submissions are considered from a variety of perspectives. If your panel consists of five engineers and one social scientist, it's likely the latter will see something the others don't.

Pay attention to any restrictions your agency or chosen legal authority places on who can serve as a judge. Some legal authorities require judges to be from outside your agency. Others require them to be federal staff or special government employees.

You also can allow members of the public to vote on submissions. This can generate excitement and strengthen the sense of community around your challenge and topic area. You can use public voting to complement or even in place of a more formal judging team.

Keep in mind that the number of submissions you receive will dictate to some extent the number of judges you need. A good rule of thumb is to allow a minimum of 3 independent evaluations per submission.

Put together a list of backup judges who can help if you get more submissions than anticipated. Call these backup judges into action if you sense your main judging panel is overwhelmed.

2. Create the right incentives for judges to participate.

Your judges might be outside experts. Whatever the situation, your challenge could require them to spend significant amounts of time evaluating submissions. Communicate upfront the time and effort expected.

Just as you [incentivize your solvers](#), you want to provide reasons for why an expert would want to join your judging panel. Consider non-monetary benefits, especially if you're looking for volunteer judges.

Will your judges receive significant publicity or widespread acceptance and recognition in their fields?
Will they make professional connections?

Know the answers to these questions before you approach potential judges. This will help you retain them. You don't want judges to commit and then drop out, especially if you're publicizing their involvement in the challenge from the get-go.

And that's something you'll want to do if you have judges with name recognition and who wield a great deal of influence. Having high-quality judges will attract more participants to your challenge.

The National Science Foundation's [Generation Nano](#) competition asked students to create super heroes based on actual research in science and technology. It's safe to say that the middle and high schoolers who entered the competition took note of Marvel Comics creator Stan Lee's involvement.

3. Execute your well-defined judging process.

A fair and transparent judging process is crucial to maintaining the integrity of your challenge. It's also key to defending the results of the competition in the face of any dispute.

Familiarize your judges with the process you developed in [Phase 2](#). They need to recognize the power they have in deciding who advances in and wins your challenge.

Issues and topics can be debated ad nauseam, and there will be differences of opinion. But judges ultimately have to make a recommendation or score based on the process you designed. Be prepared to step in and mediate any issues that arise during difficult or tense periods in the judging process. Consider

appointing a judging panel representative who serves to facilitate discussion among the judging panel and with the challenge management team.

Strike a balance between structure and openness. You want to provide a framework in which your judges can make solid recommendations, but you also want to be prepared for submissions that come out of left field. Just because they weren't on anybody's radar doesn't mean they won't solve your problem.

Again, follow your previously defined [judging protocol](#) as you may need to defend the challenge if participants dispute award decisions. The Federal Trade Commission recently won a case where a participant who didn't win [appealed the decision](#) to both the Government Accountability Office and the U.S. Court of Federal Claims seeking damages.

Finally, people spend a lot of time, energy and even money to participate in challenges. Even if they don't win, make it worth their while. When judges and experts offer comments and feedback on submissions, pass that information onto the individual solvers so they can continue to refine and improve their solutions.

4. Understand the effort it takes to judge and develop the appropriate workflow.

Your rules may call for submissions all at once or break the process into different parts. Sometimes judges have a small amount of material to examine. Other times, they have a great deal to go through.

Allow your judges enough time to evaluate submissions and meet deadlines established in your rules.

Develop workflow or [Gantt charts](#) to know when judges need to have certain tasks completed. Block time on their calendars for evaluation and panel meetings well in advance.

5. Communicate the authority of the judging panel to agency leaders.

A challenge differs greatly from a traditional grant. Your agency leadership may have little to no role in deciding who advances in and wins your challenge. That decision could rest entirely with the judges.

The American Innovation and Competitiveness Act states: "For each competition, the head of an agency, either directly or through an agreement ... shall appoint one or more qualified judges to select the winner or winners of the prize competition."

Because the judging process can occur completely outside of your agency's normal operating procedures, you need to educate leaders on the authority your judges have in selecting winners for the challenge.

Still, some legal authorities and agencies require a government official to make the final decision about who wins a competition. Make sure you know your agency's policies regarding who must approve the winners.

If the approver is at the secretary level, allow yourself enough time to get on his or her calendar to obtain approval. You don't want to hold an award ceremony or make a winner announcement without that approval.

Document how decisions were made during the judging process so you can explain and justify to agency leaders.

6. Follow protocols to make official selections.

We want to reiterate the point we just made.

Depending on your agency, the judges may not be making the ultimate decision about who wins your challenge. This scenario is more likely if your judges come from outside your agency. In some cases, a federal employee may be required to make the final winner selections based on the judges' evaluations.

Make sure you know the protocol you need to follow regardless of who has the final say. And even if they aren't making the final decision, it's still a good idea to brief agency leaders about the winners.

Prizes to Procurement

Standardize Your Challenge Performance Evaluation Process: The judging of challenge performance must be consistent with the evaluation factors and terms and conditions you developed in Phase 2.

Consider using common templates and a repeatable process for evaluation and documentation of solution performance. This process should take into account strengths, weaknesses, deficiencies and risks of each solution to support a technical evaluation.

Consult with your legal and contracting offices to determine if this evaluation process can be used to support the past performance requirement for a follow-on Federal Acquisition Regulation (FAR)-based acquisition or other direct activity. For this, it would have to establish the "currency and relevance" of the solver to meet the government's need and clearly indicate the "offeror's ability to perform."

3.4 Verify Winners

You've selected winners, but you still have some work to do before you can announce them.

This could be as simple as verifying names, addresses or other contact information. But it also could entail verifying intellectual property and conducting patent searches.

Before you announce winners, check their names against the exclusion records on the [System for Award Management website](#) to see if any have been suspended or debarred. If you have international contestants, make sure they aren't citizens of proscribed countries.

If your legal authority doesn't allow for international winners, then you'll need to check that your winners are U.S. citizens or entities.

You can notify your winners in a number of ways, including through a phone call or email. You may decide to notify them as part of an event. This gives you another opportunity to highlight the challenge and bring attention to the problem or issue being addressed.

The “Announce Winners” step in the next phase provides additional considerations.

Key Takeaways

1. Your legal authority may affect your verification process.

If you’re going step by step through this toolkit, then you already know that not all agencies are covered by the same legal authority.

The American Innovation and Competitiveness Act is the most widely used authority and comes with certain restrictions on who can win an award. It requires that a private entity must be incorporated in and maintain a primary place of business in the United States. An individual competing alone or as part of a team must be a citizen or permanent resident of the United States. Some agencies will allow international participants with the understanding that they aren’t eligible to receive an award.

Bottom line: You need to understand your legal authority and know how it affects the verification and notification of your challenge winners.

Talk with your legal counsel because verification processes also vary agency to agency. For example, you may only need a passport for verification of citizenship or a license for business verification.

2. Develop a plan to verify eligibility.

You should make clear during registration the eligibility requirements for your challenge. Still, you need to have a plan for verifying eligible individuals or entities.

And you need to anticipate the time it will take to verify eligibility. It can range from weeks to months depending on the requirements.

Your legal authority can determine some eligibility requirements, but you’ll have to decide whether to add any other requirements for your challenge. Additional eligibility requirements require more planning. You’ll have to determine when to enforce, how to enforce and who enforces them.

Competitors can be ruled ineligible for a variety of reasons:

- citizenship
- entity location and practice
- patent infringement
- lack of intellectual property ownership or license
- suspension and debarment from award
- unprofessional or unfair treatment of fellow competitors
- actions intending to deter or destroy other challenge entries

The Department of Agriculture has dealt with suspended or debarred competitors by issuing a departmental regulation on prizes that makes these solvers ineligible to receive an award. There are also

federal suspension and debarment regulations for [non-procurement transactions](#) (Title 2 CFR Part 180) and [procurement transactions](#) (FAR 48 9.4).

Check with your legal counsel for more details on regulations and how to apply them.

You don't have to wait for a specific point in your competition to verify eligibility. It can be done at different stages as long as it's completed **before** you announce winners.

Some agencies review eligibility prior to judging so they only review entries from those who can win. Other agencies may allow ineligible participants to proceed through judging but not award them prizes.

Again, just do it before you announce winners.

You also can work through a third-party vendor to verify winners. For this, it needs to be clear whether the responsibility to verify eligibility lies with the federal agency, a partner or a support contractor.

Phase 4: Award

In this phase you'll determine the appropriate channels for announcing your winners. You'll work with internal teams to expedite payment and document your processes. You'll also explore important non-monetary incentives for all participants. These include detailed feedback, recognition and information about follow-on funding opportunities.

4.1 Announce Winners

You have a variety of options when it comes to announcing winners. Customize your process to meet the needs of your challenge, and formulate your announcement strategy early.

You may announce winners through a press release, on your website or at an event. However you do it, you need to effectively communicate who the winners are and what they achieved. You also need to explain the outcomes produced by the challenge.

Put some thought into the date you'll announce winners. You can maximize your outreach and increase visibility for your winners by making the announcement at an event or on a date that's significant to the challenge topic.

Key Takeaways

1. Decide what announcement event fits your communications and outreach goals.

Here are several ways to announce your winners. You can organize an event dedicated to your challenge, you can piggyback off of an existing event, you can announce the results online or anything in between. Just like you've done with the rest of your challenge — including the rules, terms and conditions, judging process, etc. — you can tailor your announcement strategy according to the constraints you face and the goals you want to achieve.

A dedicated final award event: If you are running a large challenge and think you would like to organize a special announcement event for it, planning can take a significant amount of time. In this case, you and your team are the ones who will have to attract an audience. Depending on your goals, your invitees could be high-level governmental staff, elected representatives, regulatory agencies, investors, philanthropic organizations, and participants and their families.

Piggybacking off of an existing event: This approach can significantly reduce the burden on planning the final award event, and you might consider holding your final award event in partnership, conjunction with, or as a part of community events, association or industry conferences, interest fairs or conventions related to your challenge topic area. You can synergize communications and outreach opportunities — you promote the event and the event promotes your announcement.

The date: Consider announcing the winners of your challenge on a significant date that somehow relates to your topic area. The team behind the USAID Desal Prize announced their winners on Earth Day. Think about when the media tend to pick up stories and plan accordingly. Since the date, or timeframe, of winner announcements may be in your rules, the world will know when to expect results. Create a buildup to the announcement on social media and your website. If you can't avoid a significant delay between the end of competition and announcement, then consider making an announcement during a controlled event (with no media) and request competitor silence so that the official announcement will maximize impact. Document these types of decisions in your [communications plan](#).

Here's a nonexhaustive list of questions you might consider when planning your final award event:

- **Gravitas and leadership:** Are you inviting the head of your agency to present the award? Inviting high-profile leadership not only brings external media attention, but it also brings internal (agency) attention to your project successes.
- **Next steps:** Are you announcing follow-on opportunities or prizes during your award event? Wouldn't it be great if winners got more than they were expecting?
- **Connections:** Do you want participants to engage with investors? Think about what participants and winners will do after the challenge is over.
- **Building skills:** Is there something in particular you would like your participants to learn? Consider a demo day, where participants engage in lightning talks about their ideas and successes.
- **Source of announcement:** Should an independent source — like judges or challenge officials — declare the winners using a letterhead from the executing organization? Or should the government agency declare the winners?

2. Generate excitement and build anticipation!

Start prepping to announce the winners of your challenge soon after the judging and approval process is finished. Your rules may already specify when to announce your winners, or you may decide this after the judging and approval process. Once you know the date and time, start generating excitement around the announcement. Use social media and your website to publicly count down to the announcement date.

The announcement of your winners can make a big communications splash, so take advantage of it. It's the moment you've been waiting for!

3. Capture the right images.

Make sure you have good photo and video opportunities during your announcement. Pictures of surprise and excitement can become a lasting legacy of the enthusiasm generated by your challenge. Don't underestimate the value of a "big-check" moment. If you are not organizing an in-person announcement event, consider letting participants know they've won by webcam and taking a screenshot of their reaction. Capture the right moment to promote not only the conclusion of your challenge but also "after the challenge" spinoffs and successes.

4. Engage the right communications teams, and prepare communications ahead of time.

Just as mentioned in the “[Execute Communications Plan](#)” phase, think about the appropriate communications teams you want to engage. You may be creating a number of products to reach your intended audiences during your announcement of winners: press releases, web features, videos, social media content, etc. You could include approved quotes from your agency’s leadership about the success of the challenge or even how your agency might use the winning solutions. You could also quote the winners and use video footage from activities over the course of the prize. Make sure you summarize the challenge objective and promote any follow-on challenge activities.

Again, your products should come in multiple flavors — press releases, media features, social media posts and so on — to reach as large an audience as possible. Don’t assume one product will meet all your needs or reach your entire audience.

5. Socialize and promote the participants, not your agency.

Not all of the participants will win a prize, but many people will contribute to your challenge. For many participants, it’s not about the money. Make sure you provide a memorable experience for all of your participants and make each one feel important and respected for their participation, successful or otherwise. Think about the ways in which you can highlight all of your participants and provide non monetary benefits through the announcement process. Consult the “[Award Nonmonetary Incentives](#)” phase for ideas on how to reward all participants. For online competitions, accessing participants can be difficult, especially if they are based abroad. Think hard about how you might highlight their accomplishments if you can’t showcase them in person.

The announcement is about the participants, so focus on them. Telling the stories of the winners and highlighting the human dimensions of their participation — their struggles, what they’ve learned, what they’re hoping to do next — in your challenge makes an announcement much more likely to be covered, especially by local and regional press. Your agency will receive attention from the participants sharing their positive experiences. Remember that your efforts are laying the foundation for future challenges run by your agency.

6. Think about whether to pre-notify winners.

Consider combining the notification and the award presentation into a single ceremony. In most cases you will notify the winners in advance of the public announcement, but in some cases you may choose to wait to make a live announcement of the winners, especially if you’re announcing at an event and not through a press release or web feature. If you are going to be announcing winners in real time without pre-notifying the contestants, make sure to think about how to make the people that don’t win feel appreciated, how to ensure your winners show up to the event and how to attract positive media coverage.

4.2 Pay Winners

Making an award isn't always as simple as handing over a giant-size check. In this step, you will capitalize on your earlier [resource planning](#) to quickly and legally pay your winners. Work with your resource management office and budget office well in advance to establish the information you'll need from winners and the process you'll need to follow to make a payment. Often times agencies will need to adapt current accounting practices to be able to make a cash transfer to an individual prize winner, and this may require some pre-coordination with your budget office.

Key Takeaways

1. Who cuts the check, and how funds are paid, depends on how you're administering the challenge and who has the money.

There are various ways to administer your prize or challenge. You might choose an external, nonprofit or third-party partner to help administer and execute your challenge, or you can do it all within your agency. For each one of these administration options, the process you follow will depend on the mechanism being used for the prize or challenge:

- Execution by your agency; Funds provided by your agency are paid directly to the prize or challenge or challenge winners. The payout is treated as an invoice. Contact your accounting department to determine how an invoice is typically paid. Structure your payment form such that it can be treated as an invoice.
- Execution by a challenge partner; This pertains to an external partner that isn't using federally appropriated funds. Depending on the cited statutory authority and your agency's specific policies, the third party may be free to follow its own internal payout policies. Your agency would disburse your portion of the prize money, if any.
- Execution by a third-party contractor; For an external partner using federally appropriated funding, there may be restrictions in your agency's payout policies. One option is to include prize money as part of the contract and include prize disbursement in the contractor's roles and responsibilities.

2. Document, document, document!

Document the winner selection and payment dispersion.

It's critical to capture the contact information from your winners and top participants so you can keep in touch and monitor their progress in the future. Some of the best results from challenges don't come for months or years after the winners are announced. Document for your records and for internal processing the following information:

- Challenge title
- Challenge dates
- Challenge location

- Prize amount
- Winner contact information

3. Don't save awardee personal information.

If the payments in your challenge will be sent directly from your agency, then personal information (like Social Security numbers, bank account numbers, etc.) should be collected *only* by your financial officer. Send your financial officer the awardee's contact information so your agency can get the information it needs to distribute the prize award. Only request and retain this information for the purposes of awarding funds. Think carefully about the implications of collecting personal information during the registration or competition phase of your challenge because you might need to follow privacy laws with that information. Consult your agency privacy officer.

4. Consider processing prize awards like a procurement purchase.

You may consider working with your resource management office and chief financial officer to process prize awards just like paying a vendor for services, hardware or support. Use the money you obligated when you announced the prize to make the payment — and make sure your funding doesn't expire before you (or your partner or contractor) are able to make the prize payment!

5. Pay up, quickly!

Your goal should be to pay out prize money as soon as possible. The time from winner announcement to payout should be less than 60 days, especially for incremental awards, since competitors may be counting on this money for continuation. Set expectations by stating in the challenge rules how long the payout will take.

4.3 Award Nonmonetary Incentives

Nonmonetary incentives can be just as important as the size of monetary awards in attracting participants, but they are less cut-and-dry than sending a check. Access to testing facilities, face-time with experts at an awards ceremony, access to fast-tracked regulatory processes and business incubation are all examples of potential incentives that can motivate solvers to participate in your challenge. You may need to award these types of incentives through a separate process than the monetary award, but make sure they are also provided to participants in a timely manner. Keep in mind that these incentives are not necessarily awarded at the end of the challenge (e.g., mentorship opportunities can be available throughout the competition).

Key Takeaways

1. Showcase participant solutions at events and through media channels.

As part of the final challenge event — whether it be at your award ceremony (in person or virtual) — you can have participants publicly showcase their solutions. Consider organizing an event at a relevant conference, convention, trade show, fair or other public outreach event. You can include participants in

displays, booths or demonstrations, and even invite participants to be on a panel at an event like SXSW. Challenge-related venues can give participants the opportunity to engage with appropriate partners for further development, investment or even for starting a business.

For many participants, interactions with agency leadership or other luminaries can be just as important as winning the challenge itself. Organizing meetups and networking opportunities can go a long way in equipping teams with material they need to promote themselves and continue to build on their ideas. Leverage social media and promote the successes of your challenge and the participants during the challenge, at the final award event and also after it.

2. Provide information on follow-on funding opportunities and next steps.

While some winners or participants may be savvy at raising funds for their solutions, others may not. Consider providing participants with information on tech-to-market opportunities, resources on how to make pitches to investors, small business funding opportunities, research on grant making and so on. These valuable resources can be provided as part of the execution of your challenge, during the final award event or after it. Consider having a Demo Day to give your participants the chance to pitch their ideas to investors.

3. Think about releasing prize or challenge data.

One goal of open innovation is to open up the “black box” of government decision-making and quickly release data that might otherwise be held for long periods of time or never even released. If your challenge rules state that data and solutions will be made public, then you should think about how and when to release the data. These data could include those gathered during your challenge’s testing program, detailed scoring rubrics, data templates developed for the purposes of the competition or details on the exact testing program executed in your challenge. For algorithm or software development competitions, you may consider releasing your code open source. (Check your agency’s policies around open source licenses.) Broadcasting these data products can be a significant incentive to participate in a competition — a participant’s ideas may be used by the world! Publicly releasing challenge information allows others who weren’t able to participate to make use of the generated data. It also allows participants in your challenge to compare their solutions to others’ and sets standards for others interested in running their own competition. But remember, as mentioned in the “[Accept Solutions](#)” phase, stay true to your terms and conditions.

4. Provide expert feedback on submitted solutions.

Provide participants with the judges’ feedback on their solutions. This helps participants improve on their ideas or solutions to your challenge. Provide the feedback after winners are announced, and consider providing it in an open forum for the benefit of all participants.

5. Provide access to unique resources your agency has.

Think about providing winners and other participants opportunities not typically available to the public. Consider providing once-in-a-lifetime experiences such as meeting with agency experts or other notable

persons; a personalized tour of facilities; use of laboratory facilities or equipment; or some other behind-the-scenes experience. If your agency doesn't have what you're hoping to provide, think about partnering with other agencies, companies or governments to provide additional resources to participants and winners during or after your prize or challenge.

Phase 5: Transition

In this phase you will analyze and document the results, outcomes and impact of your incentivized competition. You will evaluate avenues for remaining engaged with your solvers as well as and next steps for high-potential solutions, whether moving them into an “accelerator” or exploring other channels for transitioning prize solutions to procurement.

5.1 Document Metrics, Results and Outcomes

As a part of the Prepare Phase, challenge owners are encouraged to think through the intended goals and outcomes of the project. As a part of the Develop Phase, challenge owners should have defined the metrics to measure progress against goals and outcomes. This step captures the assessment of how well the challenge achieved those goals and outcomes. Certain metrics, results and outcomes are required to be reported annually by the America COMPETES Act. Examples of metrics include documentation of the incentive structure (e.g., number and amounts of prizes and nonmonetary incentives), fees and management costs, labor hours, registration and submission statistics, participation demographics and judging structure and scoring. Examples of results include performance impacts, cost-benefit analyses, subjective benefits and ancillary impacts. Examples of outcomes are new ideas, technologies, actionable data about a problem and a better-educated constituency. If you outsourced the management of your challenge, you may need to gather this information from the management entity.

Key Takeaways

1. Consider the full range of costs and benefits in your analysis.

Costs and benefits can go beyond prize money and challenge solutions. Make sure you examine the complete set of inputs and outputs to your challenge, including direct costs but also indirect costs such as staff time, opportunity costs and in-kind support. On the benefit side, think about benefits to your agency (e.g., challenge or submissions led to changes in policy), the participants (e.g., gained skills and experience) and to the broader public. This will provide a more complete cost-benefit analysis that can resonate with a broad range of stakeholders.

2. Document the things you want to know, not just what’s required.

Meeting minimum or standard reporting requirements for your agency and the required annual report to Congress keeps you compliant, but it likely won’t give you the unique insight you are looking for that is tailored to your project or agency mission. Think of the lessons you’ll want to have learned from the prize or challenge process in advance, so you can collect information and document the process in ways that will respond to the questions you want answered.

When you first designed your challenge you had a clear goal in mind. You also probably thought about all of the different ways you would want to look back on your program. Now is your chance to use the data

you collected earlier to reflect on your process and inform future action. Data may help answer questions such as these:

- How many people participated?
- How many participants had not interacted with your organization before?
- Are you attracting solvers from specific demographics or different disciplines?
- What does the geographic distribution of participation and winners look like?
- Are there other ways you can leverage the community that has responded to the challenge?
- How much better is the winning solution than your current solution? Quantify this. Is it 10 percent better than the baseline? Two times better?
- How many people were reached by your challenge? What were the total social media impressions? Page views? Votes in an online voting activity? You should be keeping accurate counts and links of any press your prize received.
- Are there other projects or programs that could benefit from the challenge?

3. Metrics don't end with your challenge.

Imagine the prize process is like a book with many different potential endings. What information might be needed in the future? Is follow-up required? Will someone have something they expect to measure a year after the award? Determine exactly what the last chapter of your prize journey will be now and be sure to communicate that with all stakeholders and partners so assumptions about future activities do not go undiscovered. You may want to set a calendar reminder to follow up with winners in three months, six months, one year and two years to keep track of them and their solutions. It can take a year or more to see real impact for more ambitious prizes, especially those with a market stimulation element.

If you're engaging in survey activity, remember that Paperwork Reduction Act rules apply to 10 or more people. You want to use this engagement to continue to collect data and information, and you will need to find ways that this will benefit the participants.

5.2 Document the Challenge

Document the results of your challenge by wrapping all of what you've learned into a meaningful form. Collect impact stories, document lessons learned, consider commissioning independent assessments of the challenge and analyze metrics from the previous step. It is important to capture much of this information as quickly as possible while it is still fresh in participants' and implementers' minds. Products could include case studies for this toolkit; other communication materials that summarize the impact of the challenge and spotlight your solvers; and independent assessments or research papers that assess the impact of the challenge and even compare it against more traditional problem-solving approaches. Challenge documentation should also include any federal records that were generated as a result of the competition. A record of the evaluation and selection process should also be generated.

Key Takeaways

1. Conduct an after-action meeting with your team.

Conducting an “after-action” meeting once a challenge concludes is a best practice. You should have this scheduled and on your team’s calendar before the challenge concludes. This helps capture institutional knowledge so the agency can improve challenges in the future and also helps the challenge manager complete required annual reporting processes. Discuss lessons learned related to questions like:

- What could have been improved in judging, communications and operations?
- Did the evaluation process result in the selection of the best submissions?
- How might agency clearance and coordination go more smoothly next time?
- What would you have done differently in challenge design looking back?
- What worked well?
- What were any unintended consequences, both positive and negative?
- If you used the toolkit to help develop the challenge, are there additional insights you would add to the content? Where was the toolkit not helpful?

These lessons shouldn’t be written up and shared with your agency’s prize point of contact. Consider packaging these lessons as a case study for inclusion in this toolkit. You could also consider sharing these lessons in additional ways with other communities as discussed in the “[Share Best Practices and Results](#)” step.

2. Solicit 360-degree feedback.

Ask for feedback whenever it is relevant. Collect quotes, insights and metrics from your partners, judges, winners, stakeholders and others in the challenge process. Doing this consistently and consciously means that you will have more to work with when developing an assessment of the impact of your challenge. It is also worth noting that qualitative feedback often is critical. For example, did your senior executive think the prize hit the mark or evolved how your organization does business? Capture a quote or feedback around those insights that you can use inside and outside of your organization.

By reaching out to a new, ambitious and excited community of solvers, you may receive plenty of feedback about other related opportunities your agency may wish to explore. Be sure you share the feedback with those who could take action on it.

3. Embrace the power of storytelling.

Documenting the impact of your challenge is about way more than data. In fact, images, videos, stories and infographics can be much more powerful subjective descriptions of impact. This is a moment to gather and write down the impact stories that you’ll later tell about your challenge. What quotes about impact do you have from participants in the challenge? From users of the winning solution? From the agency customer? Take a moment to ask partners, winners, participants and stakeholders questions to understand and validate the perception and insights. NASA keeps up with challenge winners and participants through its “[after the challenge](#)” content. Challenge.Gov will provide another way to highlight

solvers in your challenge through its success stories page by interviewing winners. Make sure to tell these stories from your challenge in any required annual reporting you do in the [next step](#).

4. Keep a file of all of your challenge materials for records purposes.

You just spent a lot of time and effort pursuing an exciting approach to addressing issues for your organization in new and creative ways. In that process you created numerous program and implementation plans, communication materials, evaluations, stories and other documents. You should compile these resources on a shared drive or in another location for future challenge managers. Make sure that all of the descriptive documents, press releases, one pagers, social media tool kits and analytics are collected and organized. Keep your communications plan, checklists, tweet-sheets, website links, press releases and other elements somewhere easy to access. A record of the evaluation and selection process should also be kept here. Be sure to include copies of documents that your partners used and created.

As a federal employee, you may be asked to participate in an internal or external audit focused on the activity, financials and performance of your challenge. If you are thorough now in collecting and maintaining your information and telling a clear story, it will be easier to work with a team that wants to review your information later.

5. Conduct an independent assessment of the challenge and its impact.

Challenge design is still a craft that is being learned by challenge managers across sectors. It's important to take an objective, retrospective look at the impact of a challenge in order to make recommendations for process improvements the next time. Agencies like the Department of Health and Human Services and the Department of Housing and Urban Development have supported the creation of third-party reports that analyze the impact of challenges. For example, [AgResults](#) is a \$118 million multi-donor, multilateral initiative that uses pull mechanisms like prizes to incentivize and reward high-impact agricultural innovations that promote global food security, health and nutrition. AgResults has contracted with an external evaluator that provides lessons learned throughout the multi-year implementation of this program from an evaluator's perspective.

Also, some academics are studying the science of open innovation. This field looks at how and when open innovation methods can be best applied to improve results. These academic institutions will study one or more challenges to understand what worked and what didn't, how the approach differed from more traditional models and more. Academic research into the conduct and outcomes of your challenge may take months or years to produce a report, but it moves the knowledge of the entire field forward.

5.3 Complete Required Reporting

Good reporting isn't just useful, it may also be required. You likely will be asked to provide input for the biennial America COMPETES Act Report prepared by the Office of Science and Technology Policy (OSTP). Your agency may also have an internal reporting requirement. Your reporting may be easier if you update

the Challenge.Gov database with your results data, which will help you keep your project details and outcomes all in one place.

Key Takeaways

1. Good data and good stories reinforce one another for annual reporting.

Now is the time to put to work all of the good data you collected in the “[Document Metrics, Results and Outcomes](#)” step and the additional learnings and stories you collected in the “[Document the Challenge](#)” step.

Stories are powerful vehicles for persuasion, and they are made stronger by supporting evidence. Conversely, good data will give you a more precise picture of what worked and what didn't, but we are able to understand it better within the context of a good narrative. In your required reporting, focus on both of those elements to create a more complete picture of the challenge results.

2. Update contact information and outcome data in the Challenge.Gov database.

In the “[Prepare to Announce](#)” step, you added your challenge content and related information to Challenge.Gov. Before the conclusion of the challenge process, it's helpful to establish who will be responsible for updating new information on progress or post-process outcomes (such as winner(s) information. Make sure the information in the Challenge.Gov database contains the point of contact for the future of your challenge.

3. Agencies with many challenges should consider institutionalizing the reporting and updating process.

Some agencies have adopted an agency-wide pre- and post-challenge reporting process that gathers information like:

- What info needs to be routinely gathered?
- Where is it gathered from?
- How routinely should it be gathered?
- How and to whom is it distributed?
- How is it used and analyzed?

5.4 Continue Community Engagement

After awards are made, it is vital to continue a regular dialog with users and stakeholders. User feedback may be delayed, and unintended consequences may not immediately be realized. It takes time to form new companies and ventures that were incentivized through participation in a challenge. It can also take time for new products to get to market. Also, opportunities for additional follow-on challenges often arise

over time. One practice for ongoing engagement is to conduct stakeholder interviews six months and one year after challenge completion. Lessons-learned documents should be updated based on this ongoing feedback. The “Award Nonmonetary Incentives” step outlines many creative ways to reward and incentivize participants. The implementation of these nonmonetary activities may occur over months or years.

Key Takeaways

1. Maintain post-challenge momentum and manage expectations with partners.

If a variety of stakeholders or partners were engaged in the challenge implementation, they will each have expectations for outcomes. Be clear about what will follow and manage those expectations up front to help everyone involved maintain a positive sense that their time and resources are worth investing in the process. Think about how to thank your judges, subject-matter experts and other participants in your challenge — and how you keep them up to date on progress associated with it. Go beyond the “[Document the Challenge](#)” step and contemplate how to continue to derive value from the outcomes of the challenge with other challenge partners.

2. Ensure participants and winners are motivated to stay engaged.

Once awards are provided, winners and other participants will no longer have a direct, financial motivation to stay engaged with you. That doesn't mean, however, that they don't want to. By investing time and money into developing their solutions, participants have effectively raised their hands to say they're interested in this work. Make sure you know what will motivate them to continue their work and their dialog with you, and make it as simple as possible for them. Review the variety of incentives detailed in the “[Award Nonmonetary Incentives](#)” step for additional ways to motivate your participants. Also ensure that you're implementing the [community engagement](#) and [capacity building](#) items you developed in the second phase of your challenge.

For example, if you are hoping the innovation will have external impact or even commercial viability, you may find that your innovators need additional assistance with their business plans, market access and other elements. Thinking this through and providing expertise can make all the difference. These additional expert resources can come in the form of mentors, access to official contracts and business support services, deal-making with external investors and much more.

Create a mailing list to help you stay connected to your cohort of participants and winners and let them know when additional opportunities of interest to them might become available. Invite your cohort of winners to events they might not normally be able to access to enable those innovators to continue to develop a relationship with you and each other.

It is also helpful to consider if resources or mechanisms are needed to prevent participants from feeling abandoned once the process ends. They are interested in the outcomes of the process just like you, so consider how you'll keep them informed and engaged.

3. If you have multiple winners, think of them as a cohort.

Though some participants in challenges may have dissimilar innovations or consider themselves competitors, it is more likely that in developing and testing an innovation and tackling challenges in local markets, innovators will address different aspects of a very large problem and will have a great deal of knowledge to share with each other. Thus it can be useful to think of them as a cohort. Bringing innovators together for peer learning can be an effective acceleration activity with many different forms. It can be a stand-alone event or part of an annual program. When considering peer learning activities, involve innovators in your planning process so that these activities are relevant to their interests and needs, timed to optimize participation and geographically feasible to travel to if in-person.

Promoting winners requires communication efforts that extend beyond the winner announcement, especially because the newsworthiness of the innovators' stories will become more interesting to the media, innovation communities, acceleration partners and the general public once the program begins to yield results. Communicating the work of awardees as a cohort, rather than as individuals, can amplify each group's work and creates a wider variety of communications opportunities.

4. Build a community of winners and non-winners through networks.

Just as awardees of the program could be treated as cohorts of innovators, non-winners are also an important part of the open innovation communities that your organization's innovation programs are trying to engage. All applicants should be treated as valuable assets. Non-winners of your challenge may be future winners of other challenges; influencers capable of attracting new applicants to future prizes, grants, contracts or other activities; or even organizations that will take an innovation forward by adapting it for another part of the world. Engaging non-winners can and should be included in the [communications strategy](#). Creative, unanticipated collaboration is what open innovation is all about.

Both winners and non-winners can play vital roles in current and future programs, including by

- serving as nodes in a network for promoting future prizes, grants, contracts or other activities and amplifying the messages of the campaign;
- being sources for feedback on future prizes, grants, contracts or other activities before they are finalized so that program teams can make design decisions in the future that better serve nontraditional actors;
- being information resources for problem definition and the state of innovation in target markets or by enlarging the peer-to-peer learning pool;
- constituting the pool of applicants for subsequent rounds of a challenge or other innovation programs; and
- providing public comment on related programs in the future.

Look for ways to inspire innovators to see that they are part of a larger, groundbreaking movement. Consider activities and communication tactics that help awardees view themselves as part of a cohort, unified in the pursuit of piloting and deploying innovations to solve a development problem. The value of

their successes and failures may not always be visible in day-to-day implementation; your team should take efforts to make common connections visible.

5. Take your community virtual.

Try to migrate your new innovation community into a virtual realm. It can be as simple as setting up a Facebook page, a website or a partner platform, but it is critical to continue a relationship with your innovators that moves beyond your email inbox. Decentralizing the community so it doesn't rely on your mediation allows it to grow more organically and on its own after the challenge.

5.5 Manage Solutions

Solutions resulting from a challenge could serve a number of purposes including use by your agency, use by a broad public or potential commercialization by competitors. Depending on the rules of a challenge, you may need to make solutions available in the broadest possible way to facilitate reuse or support to others who are investigating similar problems. One practice is to deploy all artifacts of the solution to an open-source repository (such as GitHub) that is broadly available. If solutions will be integrated into existing processes or products, consider continuing your engagement with the solvers. Intellectual property rights are a key consideration; if you don't obtain the rights as part of the initial challenge, a plan to obtain a license to use the solutions may be needed. Also, the pathway to adoption for solutions resulting from a challenge may not be immediately clear. For example, ideation challenge results may take time to be socialized, and demand for implementation of those ideas may take time to grow with user communities.

Key Takeaways

1. Think about how to manage communities of innovators and solutions differently.

In the "[Continue Community Engagement](#)" step, you thought about how to engage the people that participated in your challenge in order to continue to cultivate a community of innovators. In this step it is important to think about how the solutions that came from those communities will be scaled or implemented – sometimes the solver has no role in the implementation of a solution within an agency. It is good practice to think strategically about managing both solvers and solutions.

2. For implementing solutions, the end of the challenge is really just the beginning.

It's time to reflect on the impact you really wanted to have. For some, simply running the challenge, engaging others or advocating for the issue may be enough. But for many, it's critical to continue on the path that takes your innovation from a winning idea to actual use. Finding an innovation is just the first step – applying it to the problem, measuring its impact and helping scale it are equally as important. Innovations follow an unpredictable path from development to implementation, but it's possible to

anticipate the actions necessary to make sure they are properly resourced along the way. These actions include

- understanding intended markets and developing product-market fit;
- identifying and securing customers or users;
- building internal systems suitable for the innovation to scale;
- accessing finance or funding;
- building a quality team with technical, regulatory and business expertise; and
- operationalizing the development of products or projects and creating or identifying distribution channels as applicable.

Think about who is critical to the application of your innovation. If it's for internal use, who do you need to engage inside your agency? If it's for external use, to what groups should you highlight the solutions? Should you have considered partnering with them from the beginning? Partnerships, whether interagency, intergovernmental or public-private, are a great way to ensure that solutions are managed to maximize impact and return on investment. Partners may be able to provide greater exposure to funding opportunities or help provide opportunities for piloting or adoption. Partnerships can also create pathways to apply solutions to different domains.

3. Execute the acquisition of winning solutions, if you structured your challenge to do so.

If your agency seeks to procure the solutions from your challenge, you need to work with your procurement team to acquire them. There are many actions you can take to help justify a procurement:

- Leverage the full and open competition of your challenge to justify a procurement.
 - o Consider the results of the challenge, as stipulated in the solicitation, as part of the offeror's proposal and as a major factor in contract award evaluation.
 - o Consider making challenge results a factor in whether a proposal proceeds in the acquisition process.
 - o Think of the results of a full and open challenge as an oral presentation, which could be used to substitute for or augment a vendor's concept or proposal for a follow-on acquisition.
- Integrate challenge participation into past performance evaluations.
 - o Use challenge outcomes as a source of past performance information to establish the relevance and currency of the offeror to meet the specified need and indicate the offeror's ability to perform based on the source and context of how the proposed solution meets the agency's need.

Evaluate how the Government Purpose Rights in intellectual property obtained as part of the challenge terms and conditions may influence the procurement.

4. Consider moving high-potential solutions into an “accelerator.”

Acceleration is about equipping high-potential innovators with the strategies, knowledge, capacities, relationships and other tools to achieve their goals. When done well, acceleration support enables

innovators to achieve goals faster, to make rapid course corrections when failure is encountered and to build on success to grow their innovation further.

Awardees of your organization's challenges could be developing and testing new innovations, whether as a venture or a new program within established organizations. Deploying new innovations can be an unpredictable and long process but if these efforts do not achieve a certain level of success with their initial grant funding or start-up capital, they may cease to exist and awardees may be unable to take their innovations and learning forward. Acceleration can help ensure that innovations move quickly along the optimal path, whether they fail or succeed.

A growing number of organizations, known as accelerators or sometimes incubators, exist to provide acceleration services to new ventures in a cohort-based format. Accelerators that focus on different stages of ventures, geographies and sectors can be engaged as program partners (offering their services in-kind) or as service providers (being paid for their services directly by your program or by the innovators themselves). Accelerators offer a wide variety of services and have varying requirements for participation. Carefully consider who the best organizations are based on the goals of your program and the needs of innovators. A program may design and implement acceleration activities by choosing to work with an existing accelerator in a number of ways. Program teams should undertake a comprehensive evaluation of potential accelerators before deciding whom to work with on implementing all or part of the planned acceleration activities. Consider the following criteria:

- **Geography:** For what part of the world is the accelerator equipped to support organizations?
- **Model:** Is the accelerator in-person, virtual or both?
- **Sector:** Does the accelerator specialize in a sector that is appropriate for this program or cohort of awardees?
- **Expertise:** Does the accelerator specialize in or have comparative advantage in an area that relates to the needs of innovators, in terms of training modules or relationships to mentors and advisors?
- **Services:** Does the accelerator provide training, mentorship, partnership brokerage, co-location and funding?
- **Stage:** Does the accelerator work with organizations at the same stage of development as the cohort in question?
- **Nonprofit/For-Profit:** Does the accelerator explicitly or implicitly focus on for-profit ventures, or is it prepared to support any kind of organization?
- **Program Type/Duration:** Does the accelerator's specialized program align with the availability of innovators to participate and the duration of the program's support to the innovator cohort?
- **Customization:** What degree of customization in services is the accelerator willing to provide?

It may not be possible to find an existing accelerator that has services for some or all of the needs of your program-supported innovators. Also complicating matters, some accelerators run their own selection and due diligence processes and may not be willing or able to take in the cohort without additional review.

Prizes to Procurement

- *Transition Your Prize Solutions to Procurements* – If your [goals and outcomes](#) include the acquisition of winning solutions, then work with your contracting office to transition from a challenge to a follow-on procurement. To award a procurement, you'll need to work through many of the following issues:
- *Use a Follow-on Sole Source Procurement after the Challenge* – If you anticipate a sole source procurement after the challenge, then consider announcing that to solvers prior to the competition. If full and open competitive procedures were used during the challenge, consult with your contracting office to determine if these may be justification for a sole source award predicated upon the fulfillment of competitive procedures. If the intent of the challenge is to identify a highly unique or specialized solution, then your contracting office can determine if a sole source justification for only one responsible source can be considered (see [FAR 6.302-1 Only One Responsible Source and No Other Supplies or Services Will Satisfy Agency Requirements](#)).
- *Integrate Challenge Participation into Technical or Past Performance Evaluations for Competitive Procurements* – Work with your contracting office to determine if you can consider the results of the challenge as part of a solver's technical concept or proposal and as a major factor in contract award evaluation. The results of your challenge might also be considered as analogous to oral presentations in that the results could be used to substitute or augment a solver's technical proposal for a follow-on acquisition. If using an Advisory Multi-Step Process, your contracting office can determine if the solver's evaluated results can be considered as part of the "information submitted" for invitation to participate in the next step of an acquisition. Finally, your contracting office can consider using challenge participation and the associated evaluation process and supporting documentation as past performance for the follow-on FAR-based acquisition.
- *Evaluate How the Government Purpose Rights in IP Obtained as Part of the Prize Challenge Terms and Conditions (see Step 2.3) May Influence the Procurement as GFI* – If intellectual property (IP) was obtained as part of the challenge, work with your agency counsel and contracting office to consider what is required to transition it to another program office or third-party working under a government contract for a related purpose.
- Consult with your agency legal and procurement professionals

5.6 Share Best Practices and Results

The prizes and challenges community of practice is heavily influenced by best practices shared within the community. There is currently no commercial "book of knowledge" for prizes and challenges, as one might find in the field of project management. Case studies, lessons learned and captured results are

critical to advancing state-of-the-art challenge design and execution. These experiences, in turn, are fed back into the toolkit to make the experience base broadly accessible. Write up your lessons as a case study and share them with this toolkit and with the federal Challenges and Prizes Community of Practice.

Key Takeaways

1. Tell your success story within your agency and your industry.

The great practices and results you've documented won't share themselves. Make sure to set up briefings with leadership at your agency to share the results of your challenge. Share with them what you learned about the process for conducting a challenge within your agency and make concrete recommendations for how the process could be improved for people that follow you.

Share your results within your industry by putting in proposals to speak on panels. Consider publishing pieces on your results in appropriate trade magazines and publications.

2. Foster peer learning.

By designing and implementing challenges, challenge managers will have a great deal of knowledge to share with each other. The Challenge.Gov program brings these innovators together for peer learning in order to accelerate the advancement of prize design practice. Consider volunteering to present and share your learnings at a spotlight chat or deep-dive session. If you gained knowledge in a specific niche area or had remarkable success in a portion of your challenge, also consider conducting a webinar for the federal community through Challenge.Gov to share what you've learned.

3. Share your documentation with other practitioners.

An easy way to address some knowledge management issues is simply to make anything you can available publicly. This toolkit is a great place to add specific resources from the conduct of your challenge. It is also an opportunity to share a case study that adds your insights from conducting a challenge of your type to the general knowledge of the federal community.

4. Acknowledge the efforts of partners who contributed to your challenge.

You have rewarded your winners and have come up with ways to keep your new community of solvers engaged. You also want to keep the momentum going among your team members and partner organizations. Acknowledge the work of all those who helped to make your challenge a success. Tell the story of their efforts and the impact they had on the outcome of your challenge. This will encourage continued engagement among your internal teams, partners and the larger federal community devoted to using challenges to address critical issues in government. It also builds a foundation for continued support for future crowdsourcing projects.