**Vertical 13 – Engaging Startups**

***OSTP articulated this content area as an offshoot of V18 (Innovative Contracting). As such, content should be deeply interwoven and interlinked for web. For instance, nearly all contracting tools discussed in V18 have the explicit benefit of attracting innovative small businesses; they are covered in brief here to allow for introduction and cross-linkage to detailed how-to guidance for each approach.***

***Content is modular, particularly the enabling frameworks section in D3. The frameworks section provides an overview, rationale, use case, how-to, resources, authorities, etc. for both Agile and FIRE.***

|  |
| --- |
| D1 (elevator pitch) aimed at start-ups (as an offshoot of V18 – Innovative Contracting)  D2 (rationale/summary of premise, and benefits) for engaging start-ups + a review of challenges that inhibit startup engagement with the government  **D3 – rather than use cases, this explores in-depth two** **enabling frameworks, covering D1-D9 content in brief for both**  D4 – case snapshots of agencies deploying approaches to work with startups  D5– *abbreviated* discussion of challenges for engaging startups  D6 – *abbreviated* guidance for working with startups  D7 – additional links and resources broadly  D8 – additional legislative resources  D9 – next or promising practices |

**Pull Quotes section:**

### **Deliverable 1: Elevator pitch summary**

**Intro**

Agencies seeking more impactful and cost-effective ways to deliver on their missions for the American people can increase both the talent and the resource pool available to them by looking beyond the usual suspects. By adopting strategies that accelerate partnership and procurement with innovative startups and small businesses, agencies can harness their innovative energy and source new solutions from these entrepreneurial firms.

**Why**

Startups can provide alternatively designed, priced, or produced technologies than those offered by traditional providers. The general public also benefits from Federal efforts to de-risk new, cutting-edge technologies from startups for widespread adoption in the private sector. By serving as an early customer for new firms with breakthrough technologies, the government can use its buying power to catalyze new innovations that broadly benefit the American people. [Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016; “[A Strategy for American Innovation](https://www.whitehouse.gov/sites/default/files/strategy_for_american_innovation_october_2015.pdf),” Economic Council and Office of Science and Technology Policy, October 2015.]

**How**

In recent years, several agencies have created award vehicles and pilot programs in order to better interact and purchase from startups. These mechanisms have demonstrated that simple techniques, including the creative use of broad agency authorities such as the Other Transaction Authority (OTA), policies tailored to specific offices (for example, use of the IT Schedule 70 Startup Springboard Initiative, run by the U.S. General Services Administration), and delegation to bottom management structures such as the Defense Advanced Research Projects Agency’s (DARPA's) use of a prime contractor, can increase government procurement from startups. [Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.] ]

### **Deliverable 2: Summary of underlying rationales / empirical research**

**Federal agencies can benefit from working with startups:**

Startups and innovative small businesses have two overarching benefits: they can offer Federal agencies valuable new ways of solving long-standing problems, and furthermore they can provide cost-effective alternatives to solutions offered by larger, more well-established companies. As budgetary constraints continue to reduce available resources, there is a heightened need to grow new innovative contracting models that increase accessibility to these entrepreneurs, and reduce the complexity and cost of doing business with the government. Such tools often allow Federal agencies to pay contractors for results, not just best efforts. [“[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014.]

**Challenges faced by startups**

In recent years, Federal agencies have been able to gain greater access to the innovation and synergies generated by the commercial marketplace. Despite this progress, however, the standard procurement processes that agencies rely on have evolved relatively little, remaining highly complex and enigmatic for companies that aren’t traditional government contractors.

In order to understand why modern approaches to partnering and procurement are necessary for agencies seeking to engage non-traditional businesses, it is first important to understand the unique set of obstacles that small innovative businesses and startups face when trying to partner with the government. Some of these challenges include:

**Challenges**

**1. A costly procurement pipeline**

**2. Misconceptions regarding intellectual property**

**3. Cultural differences to risk-taking and modern methods**

**A costly procurement pipeline**

[Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.] ]

The “procurement pipeline” can be understood as the nature and order of events that must take place when the government wishes to buy a service or product from the private sector. The Federal government, as the quintessential big customer, has developed structures optimized to big companies, big contracts, and big oversight. This has the effect of driving up transaction costs for small innovative businesses at every stage along the procurement pipeline: initial discovery of product needs and specifications by the government buyer, dialogue and interface between the government buyer and the startup seller, identification of appropriate contracting “vehicles” for the sale (authorized frameworks, methods, and appropriate contacts/departments), interface during the implementation of a contract with a “prime” (overhead contractor), and ultimately the delivery of the product or service to the government buyer. Many startups assess the time, effort, and financial cost at each juncture to be too high, and instead choose to opt-out of working with the government to pursue opportunities with lower barriers to entry. When this happens, no one wins, because startups lose out on potentially lucrative contracts with a stable partner, and the Federal government loses access to potentially breakthrough solutions that meet agency missions.

There are many different manifestations of a procurement pipeline, depending on how and when a government agency decides it would like to purchase from a startup or small business. Regardless of whether a startup initiates the contract, there are four key issues that have consistently led to the dissolution of government/startup partnerships:

1. **Difficulty identifying opportunities:** Traditionally, Federal agencies will decide on a new product or capability to procure and post the opportunity on a website, such as [FedBizOpps,](https://www.fbo.gov/) or search for vendors through the U.S. General Services Administration (GSA). Neither of these practices are likely to lead to proposals from startups. If government agencies post opportunities on FedBizOpps, startups often do not know about the site, how to navigate the site, or when to look for opportunities. Furthermore, some opportunities (i.e., those involving cyber security) might only be posted on secured-network classified computers that small companies likely cannot assess. If government agencies search for vendors through GSA, the available vendors are mostly larger businesses that understand the Federal procurement processes. Becoming an approved vendor is a hurdle most small companies do not overcome because the standard approval processes are complicated and biased against young companies.

2**. Difficulty identifying relevant points of contact:** Startups often struggle to identify the point of contact for any agency when attempting to respond to a government need. Once a government buyer is identified, the startup must find that appropriate authority to relay information to regarding the capabilities of the product/service. This can be difficult, as there is sometimes a dissonance between the contact interested in the product and the contact with the authority to buy—sometimes, they can be in entirely different divisions within the agency.

**3. Difficulty plugging into an appropriate contracting vehicle**: As stated above, “contracting vehicles” are the legal and financial interface through which the government can make a deal with a private entity. A single contracting vehicle can be rather complicated, featuring incumbent government “owners” paired with a prime contractor, and unique parameters limiting types of available funds. The most difficult aspect of this step is the time involved in finding and understanding the complicated contracting vehicle process. Even when there is a willing and interested government buyer, and even after the appropriate point of contact has been established, a contracting vehicle may not yet be in place for the particular type of product or service needed—when that is the case, the process of creating a new contracting vehicle may be too lengthy for a startup or small business to accommodate.

Among government buyers, there is a perpetual scavenger hunt for established contracting vehicles which have pre-approved funding ceilings and allow for the buying of the particular goods or services in question. The ideal contracting vehicle is one which comes with a smart, professional contracting team that the buyer can trust to implement the deal in a timely fashion. Sometimes, this is not the case. An additional challenge is the requirement on the end-user to match the “color” of the vehicle (e.g. operations, research, etc.) with that of the funds. Funds must be unobligated if the transaction is within a short time, which it usually is for small businesses, or pre-obligated, meaning already designated through a preemptive process with foresight, towards something a small business can compete for. Small companies and startups do not have the knowledge or resources to navigate this process.

4. **Difficulty in dealing with a prime:** In some cases, the government buyer (and not the startup or small business) may be the one to have trouble interfacing with a prime contractor; this is often the case in areas in which the government is seeking a novel product or service, which in turn legally necessitates equal access to competition between interested companies. In these cases, the prime contractor is responsible for vetting interested companies equally and objectively, and the government buyer cannot tell the prime contractor which companies to select.If at this point an interested startup has already been interfacing with a government buyer directly, the change to an entirely new interface (coupled with a new competition step) can further complicate and extend the procurement process for startups. Even more troubling, many prime contractors can impose a fee, making it overall more costly for the startup to continue engaging with the government buyer.

**Misconceptions regarding intellectual property**

[Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.]

One of the biggest barriers for startups to enter into a government contract is the (perceived) danger to their intellectual property (IP) assets. Startups, or their angel investors and venture capitalists, commonly fear that government collaborations will result in the development of a new product to which they have limited rights, or they fear that the rights to their main marketable product may be, in some part, transferred to the government during the contract. This concern is particularly serious for companies that rely on trade secrets, have only filed a provisional patent, or those that have “patent pending” technology, and often leads startup businesses to believe, incorrectly, that they must wait to have a patent on their existing technology before they can collaborate with a government agency.

The fear that Federal agencies will “steal” startup IP is not warranted and originates from a perception of possible IP entanglements. Both non-exclusive, royalty-free (NERF) and traditional licenses provide startups flexibility in the use or sale of any newly-developed technology beyond a collaboration with the government. There are also simple legal maneuvers that can assure private partners that their preexisting IP is off limits to a government partner. Moreover, governmental agencies are generally not interested in “stealing” existing, patentable material. Instead, their primary interest is to seek a private partner that possesses the necessary expertise to modify an existing technology (or, sometimes, create a wholly new technology) that fits an agency need. It is nonetheless important for agencies to create a clear line of communication about their IP and contractual policies with their private partners, whether this means providing small businesses with a very clear and exhaustive FAQ webpage (as the Department of Energy (DOE) has with its [Small Business Voucher](BK:%20https://www.sbv.org/faqs.html) pilot program) or providing direct access to trained representatives or legal teams (as with the [NASA patent portfolio](https://technology.nasa.gov/patents)). [Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.]

**Cultural differences: Risk-taking and modern methods**

[Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.]

Integral to the startup culture is a willingness to take risks and fail fast. In startups, common practices include quick pivots requiring agility, short pitch sessions ending in partnership decisions, and month-to-month financing.

Federal agencies operate very differently out of an expectation that failure is not tolerated. As a result, rules and procedures have been established to minimize exposure to risk that limit agility, a hierarchical structure of management has been built that leads to centralized trust, and employees have been siloed as project sizes increase. As a result, typical procurement processes involve long time periods from proposal to contract, requirements that bias toward larger companies, contracts that lock in suppliers, and opaque operations. These outcomes are the result of institutional processes that were designed to minimize risk, and over time are accepted as the norm by employees. The culture gap between startups and the Federal government presents challenges to successful collaboration.

Moreover, writes former OMB director Shaun Donovan, “The prevalence of outdated digital service development and management practices across government, has discouraged modern vendors from working with government – as these practices would render those vendors unable to execute and operate in accordance with their core norms (e.g., unable to execute truly user-centered, agile design and development; unable to leverage cloud-based services; forced to comply with an obsolete technical reference architecture and archaic reporting and management requirements; etc.).” [onovon, S., “[Exit Memo: Office of Management and Budget,”](https://obamawhitehouse.archives.gov/administration/cabinet/exit-memos/office-management-and-budget) January 5, 2017.]

### **Deliverable 3: Use cases and Enabling Frameworks**

#### Enabling Frameworks for Modern Acquisitions and Engaging Startups

[“[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014.]

Beyond learning to structure and deploy new approaches to procurement, engaging with startups and other innovative small businesses requires a shift of mindset. Two modern frameworks that emphasize simplicity and quick iteration (FIRE and Agile) are worth highlighting for their relevance to modern acquisitions. Their relevance is two-fold:

* These methods are often used by innovative small businesses that may be engaged these new contracting approaches.
* Elements of these frameworks may incorporated directly into project management, including procurement processes.

Contracting officers and program managers alike can benefit from learning to apply these approaches, to better inform efforts to engage with innovative small businesses and procure novel, more effective products and solutions.

#### FIRE -- Fast, Inexpensive, Restrained, Elegant

[“[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014; Ward, D., personal communication with OSTP, February 2016.]

The FIRE (Fast, Inexpensive, Restrained, Elegant) method is an overall approach to procurement and program management that values speed, thrift and simplicity. It provides a heuristic-based decision-making framework by establishing constraints on time, money, complexity, and size.

The basic premise is that new solutions do not have to cost as much, take as long, or be as complicated. FIRE orients practitioners toward delivering “affordable systems that are available when needed and effective when used,” measuring success in terms of capabilities delivered rather than dollars spent. [Ward, D., "[Changing Acquisition Culture: What and How,](http://www.acqnotes.com/Attachments/Changing%20Acquisition%20Culture%20Nov13.pdf)" National Center for Policy, November 2013.]This contrasts with the approach of mistaking large price tags and high degrees of complexity as signs of quality, which can lead to outcomes which cost more, take longer, and do less than promised.

The FIRE method is relevant at multiple points in the acquisitions and program management process -- from organizational structure and process design to requirements definition and technical architectures. This approach aims to limit growth in every dimension of the program – including document length, meeting duration, and team size as well as process complexity, program budget, and delivery schedule. The result is a reduced risk of program failure, and a reduced impact when failures do occur.

**Benefits of FIRE**

The FIRE method can provide faster delivery of less expensive solutions, which benefits Federal customers and taxpayers alike. From a technical perspective, FIRE can deliver simpler architectures, which means the finished products are easier to debug, more reliable and can be more readily scaled up to larger applications. From an organizational perspective, FIRE can improve and expand the talent pool by increasing opportunity for people to gain experience via smaller, shorter-duration projects.

Implementing simplified procedures also opens the door to non-traditional suppliers and smaller entities who may have been previously unable or unwilling to manage the complexities of government contracting.

**Case Snapshots:**

[Sourced directly from “[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014.]

**NASA’s Faster, Better, Cheaper missions**: These missions in the 1990s demonstrated that it is possible for a government agency to simultaneously improve the cost, schedule, and performance of advanced technical systems. In many cases, program cost dropped by an order of magnitude while technical capability went up an order of magnitude.   
Federal employees can read more: “[Better, Cheaper – Revisited](http://www.dau.mil/pubscats/atl%20docs/mar-apr10/ward_marapr10),” *Defense AT&L*, March 2010.

**The Navy’s Virginia Class submarine program:** This program emphasized speed, thrift, simplicity, and restraint throughout its lifecycle. The results are striking: USS New Hampshire was delivered 8 months early, $54M under budget; the USS Missouri was 9 months early, $72M under budget; and the USS Mississippi was 12 months early, $60M under budget. In fact, the last six submarines were all delivered early.

**How to use**

[Ward, D., personal communication with OSTP, February 2016.]

FIRE can also be concretely understood within the context of the [Simplicity Cycle](http://changethis.com/manifesto/show/129.01.SimplicityCycle), a decision-making tool to help people make good decisions about complexity. Useful in the early design phase of a project,

The Simplicity Cycle provides a visual vocabulary which teams can use to discuss and analyze complexity-related issues in their organizations, technologies, and processes. It helps shine a light on both the value and cost of complexity, and introduces several practical techniques that can design and implement simple, elegant solutions. Program managers, technologists, and designers may find the framework useful for bringing clarity and focus to designs and discussions. The framework also provides teams a roadmap to help navigate a complex environment.

The Simplicity Cycle provides a common ground for assessing the cost and the value of various elements of a design, whether the design is a process, organization, or technology system. Using simple line graphs that anyone can draw, teams can track the way complexity affects an entity’s performance and value. The drawings help identify any places where complexity is becoming excessive, and helps direct strategic planning to avoid unnecessary complications. This tool may be used under any regulatory environment; the Simplicity Cycle has already been used successfully on several projects within the DOD and DHS.

**Relevant authorities**

The FIRE method (and the Simplicity Cycle tool) is consistent with the Federal Acquisition Regulation (FAR), which repeatedly encourages restraint and simplicity, and discourages over-engineered solutions. For example, [FAR 13.003](https://www.acquisition.gov/far/current/html/FARTOCP13.html) emphasizes the use of simplified acquisition procedures, saying “Agencies shall use simplified acquisition procedures to the maximum extent practicable for all purchases of supplies or services not exceeding the simplified acquisition threshold.” [FAR 15.306(d)(4)](https://www.acquisition.gov/far/current/html/FARTOCP15.html) recommends the government “suggest to offerors that have exceeded any mandatory minimums…that their proposals would be more competitive if the excesses were removed...”

[FAR 35.008](https://www.acquisition.gov/far/current/html/FARTOCP35.html) offers similar guidance, explaining that “an award should not be made to obtain capabilities that exceed those needed for successful performance of the work.” The modular contracting methods identified in [FAR 39.103](https://www.acquisition.gov/far/current/html/FARTOCP39.html) are also compatible with FIRE.

**Resources**

For more information, contact Dan Ward, at thedanward@gmail.com , or consult:

Ward, D., *FIRE: How Fast, Inexpensive, Restrained, and Elegant Methods Ignite Innovation*, HarperBusiness, 2014. This book provides an introduction to the FIRE tools, practices, and principles.

#### Agile Methods

While commonly used for software development, Agile methods, frameworks, and practices can also be applied broadly to project management. Agile emphasizes transparency, fast and adaptive iteration, and close customer collaboration. Agile is not one specific method; Agile is both a philosophy and an umbrella term for a collection of methods or approaches that share certain common characteristics. It can be understood as describing:

1. A set of engineering best practices that allow for rapid delivery of high-quality software.
2. A project management process that encourages frequent inspection and adaptation.
3. A leadership philosophy that encourages teamwork and accountability.

[Ward, D., personal communication with OSTP, February 2016.]

There is no universally accepted, formal definition for Agile. One informal definition from an Agile practitioner is: “Agile is an iterative and incremental (evolutionary) approach to software development which is performed in a highly collaborative manner by self-organizing teams within an effective governance framework, with ‘just enough’ ceremony, that produces high quality solutions, in a cost effective and timely manner which meets the changing needs of its stakeholders.” [“[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014]

The Agile philosophy is embodied in the 4 tenets of the [Agile Manifesto](http://www.agilemanifesto.org/) and its 12 associated principles. Actual Agile methods vary (Scrum, eXtreme Programming (XP), Adaptive Software Development, etc.), and each emphasize different aspects of Agile. For example, the Agile Scrum method has a heavy software management emphasis (e.g. daily team meetings and a sprint-based lifecycle), while XP emphasizes the technical aspects of Agile (e.g., pair programming and continuous integration).

|  |
| --- |
| Agile Glossary of Terms: [**Product Backlog**](https://www.atlassian.com/agile/backlogs)**:** a prioritized list of items for the development team to deliver. The most important items are shown at the top of the product backlog so the team knows what to deliver first. Items are often in the form of **user stories**.  [**Epic**](https://confluence.atlassian.com/agile/jira-agile-user-s-guide/working-with-epics)**:** A large or high level user story that can be broken down into a number of smaller stories.  **Product Owner**: The member of a scrum team who is responsible for what the team produces and the order in which it’s produced. The Product Owner is charged with making sure that the team produces something that is of value to users and customers.  **Retrospective:** At end of each sprint, the team holds a retrospective to reflect and adjust practices. Any team member can voice a problem or propose a solution.  **Scrum Master**: The servant leader of the team who facilitates, removes impediments, and generally ensures that the team is working well without managing them directly.  **Sprint:** A short period of time (usually two weeks) during which the team produces some items of customer value. Valuable feedback is sought from users and customers at the end of each sprint.  **Sprint Planning:** The team’s process of understanding and committing to a set of value to produce during the upcoming sprint.  **Standups:** A short, daily meeting typically held standing up and face-to-face to encourage brief sessions. This is not a status meeting. It’s a meeting for team self-organization around the work of the day. Team members plan for the most efficient and productive day for the team. Long answers and discussions should have follow-up in smaller groups after the standup meeting.  [**User Story**](https://www.mountaingoatsoftware.com/agile/user-stories)**:** A short, simple description of a feature told from the perspective of the person who desires the new capability, usually a user or customer of the system. They typically follow a simple template: “As a \_\_\_, I want \_\_so that \_\_\_.”  **Velocity:** The sum of effort estimates associated with the user stories accepted by the Product Owner during a sprint.  [Sourced directly from 18F’s Digital Acquisition Playbook, [Primer on Agile](https://pages.18f.gov/digital-acquisition-playbook/primers/agile/)] |

**Benefits of Agile Methods**

Agile methods show promise for enabling teams to adapt to changing requirements. Particularly for software and digital services development, Agile methods allow teams to more rapidly field software compared with the traditional waterfall approach.

In contrast to waterfall-based projects, Agile seeks to deliver small but functioning software in increments that eventually build up to the full desired capability. In this manner, users can begin to interact with the software system earlier. Users receive some minimal capability early rather than waiting until the end of the entire waterfall life cycle to receive any working software. This reduces lifecycle costs by eliminating the development of unnecessary and unwanted features. Agile also provides an explicit framework for discussing priorities and tradeoffs, which generates more accurate assessments of the state of the project at any given time. Additionally, constant collaboration between the contractors and the government personnel increases the understanding of the requirements which potentially results in a product better suited to the needs of the end users.

Other benefits of using Agile Methods include:

* Early insight by the users into the actual design and implementation of the solution
* Early and ongoing insight by the developers into user behavior, leading to more usable applications
* The ability to change requirements and priorities throughout the life cycle
* Opportunities to “fail fast” and make timely adjustments if the early solution ideas turn out to be flawed, little time or money is spent before that learning occurs, and redirection can be implemented
* Surfacing and addressing bugs earlier in the process
* An understanding on the part of the development and acquiring organizations that the requirements are expected to evolve and are a natural part of software development and ensuring value is delivered to the customer

[“[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014]

**D3:**

Any Federal agency that develops or purchases software can benefit from Agile – either by embedding Agile practices in its work, or in working with offerors using Agile methods. When adopting Agile – or entering into contracts with Agile-practicing businesses – agencies should be mindful of the various “flavors” of Agile and select the method(s) that most closely aligns with its goals (e.g., effective small team leadership practices, and increase efficiency and reduce waste).

**D4: Case Studies**

[AgileGovLeaders,](http://www.agilegovleaders.org) a community of practice, has assembled the following case studies that illustrate how the use of Agile has returned results across Federal, state, and local agencies:

* [Agile Government and The Department of Justice](http://www.agilegovleaders.org/case-studies/doj/)
* [Agile Government and Salt Lake City](http://www.agilegovleaders.org/case-studies/slc)
* [Agile Government and the State of Maine](http://www.agilegovleaders.org/case-studies/case-study-agile-government-and-the-state-of-maine/)
* [Agile Government and the Broadcasting Board of Governors (Office of Digital & Design Innovation)](http://www.agilegovleaders.org/case-studies/bbg/)
* [Agile Government and the General Services Administration (Integrated Award Environment)](http://www.agilegovleaders.org/case-studies/gsa/)

**D5: Challenges**

Adoption of any new acquisition lifecycle requires a change in the prevailing culture, and adopting Agile is no different. It requires a marked shift in perspective form traditional waterfall approaches to development, with implications for the organization structure, rewards system, communications, decision-making, and staffing model. To meet the challenges of adopting Agile, a program management office can take specific actions: Plan for it, train for it, anticipate changes in the environment and business model, and adapt as necessary. Terminology will need to be learned or relearned if terms have different meanings when using Agile. Once adopted, the transparent nature of the Agile approach provides continuous and immediate insight into the state of the project. [Ward, D., personal communication with OSTP, February 2016.]

**D6: How to:**

|  |
| --- |
| **10 Best Practices for Agile Project Management:**   1. Start with Agile guidance and an Agile adoption strategy. 2. Enhance migration to Agile concepts using Agile terms, such as user stories (used to convey requirements), and Agile examples, such as demonstrating how to write a user story. 3. Continuously improve Agile adoption at both the project level and organization level. 4. Seek to identify and address impediments at the organization and project levels. 5. Obtain stakeholder/customer feedback frequently. 6. Empower small, cross-functional teams. 7. Include requirements related to security and progress monitoring in your queue of unfinished work (the backlog). 8. Gain trust by demonstrating value at the end of each iteration. 9. Track progress using tools and metrics. 10. Track progress daily and visibly.   [Directly sourced, “[Effective Practices and Federal Challenges in Applying Agile Methods,”](http://www.gao.gov/products/GAO-12-681) GAO-12-681, July 2012.] |

**Checklist for Agile practices**

[Ward, D., personal communication to Office of Science and Technology Policy, February 2016.]

For the development of digital services, teams using Agile should:

* Ship a functioning “minimum viable product” (MVP) that solves a core user need addressed by the service as soon as possible, and not longer than three months from the beginning of any new digital project, using a “beta” or “test” period if needed
* Run usability tests frequently to see how well the service works for users, and identify improvements that should be made
* Ensure the individuals building the service are in close communication using techniques like war rooms, daily standups, and team chat tools
* Keep delivery teams small and focused; limit organizational layers that separate these teams from the business owners
* Release features and improvements multiple times each month
* Create a prioritized list of features and bugs, also known as the “feature backlog” and “bug backlog”
* Use an “issue tracker” to catalog features and bugs
* Use a source code version control system
* Ensure entire team has access to the issue tracker and version control system
* Use code reviews to ensure quality

**D7 - Resources:**

There are abundant resources within the Federal space that can train, assist, and mentor those interested in adopting Agile ways of working:

The TechFAR Handbook and Digital Services Playbook document the best processes and practices, including Agile, that help to advance smarter IT delivery in the government.

The TechFAR Handbook, in particular, highlights the flexibilities in the Federal Acquisition Regulation that support the use of contractors for Agile software development. The goal is for agency stakeholders to be trained on and use this guidance, which will include relevant authorities, practice tips, case studies, and sample language from successful contracts for Agile software development.

See also:

* [Agile Acquisition 101:](https://www.fai.gov/media_library/items/show/81/) This video seminar features examples of where agile acquisition has been successfully implemented in the Federal Government
* [AGL Academy:](http://www.agilegovleaders.org/academy/) A community effort by Agile government professionals to help educate and empower those who seek to implement Agile processes into their own agencies
* [Agile Handbook,](http://www.agilegovleaders.org/handbook/) AgileGovLeaders
* [Manifesto for Agile Software Development](http://www.agilemanifesto.org/)
* [The Scrum Guide](http://www.scrumguides.org/docs/scrumguide/v1/scrum-guide-us.pdf)
* [Information Technology: Leveraging Best Practices to Help Ensure Successful Major Acquisitions](http://www.gao.gov/products/GAO-14-183T) GAO, November 2013
* [Contracting Guidance to Support Modular Development](http://www.whitehouse.gov/sites/default/files/omb/procurement/guidance/modular-approaches-for-information-technology.pdf) OMB, June 14 201
* [Modernizing Government](http://www.whitehouse.gov/sites/default/files/omb/assets/modernizing_government/ModernizingGovernmentOverview.pdf) OMB, 2012
* [Effective Practices and Federal Challenges in Applying Agile Methods](http://www.afei.org/WorkingGroups/ADAPT/Documents/GAO%20Agile%20Report.pdf) GAO, July 2012

**White Papers**

* [Planning for Success: Agile Software Development in Federal Agencies](https://actiac.org/sites/default/files/Agile%20Software%20Development%20in%20Federal%20Agencies%20-%20ET%20SIG%2008-2013.pdf)
* [The new government leader: Mobilizing agile public leadership in disruptive times](http://dupress.com/articles/the-new-government-leader-mobilizing-agile-public-leadership-in-disruptive-times/)
* [Towards a More Agile Government](http://ben.balter.com/2011/11/29/towards-a-more-agile-government/)
* [Agile Software Sustainment in a Government Organization](http://www.scrumalliance.org/community/articles/2013/october/agile-software-sustainment-in-a-government-organiz)
* [Agile Government: Overcoming Objections, Facing Reality, and Saving Money](https://drive.google.com/a/civicactions.net/file/d/0B4x-JjyOVv3pM1MxdkprbmMzMzQ/edit?usp=sharing)
* [Agile in the Public Sector: Product Owner Is Key](http://www.unboxedconsulting.com/ideas/agile-in-the-public-sector-product-owner-is-key?goback=%2Egmp_4263280#%21)
* [ACT-IAC Acquisition Best Practices to Procure Agile IT Services](https://actiac.org/sites/default/files/Best%20Practices%20to%20Procure%20Agile%20IT%20Services%20-%20ET%20SIG%2003-2014.pdf)
* [Enabling Acquisition Success for Agile Development](https://www.asigovernment.com/documents/enabling_acquisition_success_for_agile_development_advisory.pdf)

**Articles**

* [4 Roadblocks to Agile Development and How to Overcome Them](http://www.govtech.com/local/4-Roadblocks-to-Agile-Development-and-How-to-Overcome-Them.html)
* [Agencies delivering IT capabilities 20 days faster by using agile, OMB says](http://www.federalnewsradio.com/65/3747623/Agencies-delivering-IT-capabilities-20-days-faster-by-using-agile-OMB-says)
* [Fixing Scheduling with Agile at the VA](http://www.forbes.com/sites/jasonbloomberg/2014/10/23/fixing-scheduling-with-agile-at-the-va/)
* [Devops, agile development cut through Federal agency’s red tape](http://www.infoworld.com/article/2837893/devops/devops-agile-development-cut-through-federal-agencys-red-tape.html)
* [Unraveling the agile development knot](http://fcw.com/blogs/lectern/2012/09/agile-development.aspx)
* [Agile Development isn’t undisciplined, says panel of Federal CIOs](http://www.fiercegovernmentit.com/story/agile-development-isnt-undisciplined-says-panel-federal-cios/2013-04-23)
* [FBI’s Sentinel Project: 5 Lessons Learned](http://fcw.com/blogs/lectern/2012/09/agile-development.aspx)
* [DHS shifting to cloud, agile development to boost homeland security](http://www.computerworld.com/s/article/9237732/DHS_shifting_to_cloud_agile_development_to_boost_homeland_security)
* [USPTO Gets Agile](http://www.uspto.gov/blog/director/entry/uspto_gets_agile)
* [DoD Goes Agile](http://scrum.jeffsutherland.com/2012/04/dod-goes-agile.html)

**D8: Relevant Authorities:**

In addition, Section 804 of the [National Defense Authorization Act (NDAA) of 2010](https://www.congress.gov/111/crpt/hrpt288/CRPT-111hrpt288.pdf) states a new acquisition process is required for information technology systems. “The acquisition process developed and implemented pursuant to this subsection shall, to the extent determined appropriate by the Secretary— (1) be based on the recommendations in chapter 6 of the March 2009 report of the Defense Science Board Task Force on Department of Defense Policies and Procedures for the Acquisition of Information Technology; and (2) be designed to include—

(A) early and continual involvement of the user;

(B) multiple, rapidly executed increments or releases of capability;

(C) early, successive prototyping to support an evolutionary approach; and

(D) a modular, open-systems approach.”

The FAR provides some sections that may be useful[. FAR 16.3, Cost Reimbursement, LOE-Term FAR 16.306(d)(2) and indefinite delivery FAR 16.5](https://www.acquisition.gov/?q=browse/far/16) provide potential implementation ideas.

### Deliverable 4: One or more “success stories” or learning narratives to underscore impact

**Case snapshots of agency-led approaches to engage startups:**

[All directly sourced from Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.] , authors convey agency approval]

**DOE Lab-Embedded Entrepreneurship Program**

The goal of the [Lab-Embedded EntrepreneurshipProgram](https://energy.gov/eere/technology-to-market/lab-embedded-entrepreneurship-program) at the U.S. Department of Energy (DOE) is to embed innovators and aspiring entrepreneurs within the national laboratories to perform applied research and development (R&D) with the express goal of launching advanced energy businesses, under world-class mentorship. These innovators generally have little experience navigating the IP landscape and DOE does not want these innovators to be hesitant to join the program due to IP concerns. To address these issues, DOE worked internally with General Counsel to establish a 2-step Cooperative Research and Development Agreement (CRADA). In the first step, the necessary background IP is explored, and innovators receive training on how to navigate the IP landscape and scope the work to be conducted during the program. In the second step, innovators enter into a standard CRADA with the national laboratory for all subsequent work. Each agreement can be sensitive to the needs of the innovator and, importantly, individuals can sign the CRADA instead of requiring already formed companies. The 2 step CRADA solution kept the focus on supporting the innovator while protecting DOE against IP infringement.

**Learn more:** https://energy.gov/eere/technology-to-market/lab-embedded-entrepreneurship-program.

**DOE Small Business Vouchers Pilot Program**

To efficiently execute the [Small Business Vouchers (SBV) Pilot Program](https://www.sbv.org/), the DOE needed a standard legal agreement for research and development between small businesses and national laboratories. Small businesses do not have the resources to negotiate agreements and one purpose of the pilot was to streamline small business national laboratory collaboration. To meet these needs, DOE simplified the standard short form Cooperative Research and Development Agreement (CRADA), added general language to the open form sections, and adopted the nonexclusive royalty free (NERF) license for the IP sections. By iterating internally with General Counsel and gaining preapproval from the national laboratories participating in the program, the pilot successfully streamlined the CRADA process by making it a requirement that companies accept the given terms to participate.

**Learn more:** [www.sbv.org](http://www.sbv.org)

**DHS EMERGE Accelerator Program**  
The Department of Homeland Security (DHS) launched the [EMERGE Accelerator](https://www.dhs.gov/scienceandtechnology/accelerator) to find emerging commercial technology that is adaptable for homeland security. EMERGE attracts entrepreneurs in the fields of wearable technologies (e.g., body-worn electronics, advance sensors.). As a consumer, DHS hopes to create an emerging technology base and influence the technology being developed for the commercial market that homeland security will use. The EMERGE accelerator is aimed at early stage companies that are looking for investment.  The program requires an application much like a traditional accelerator and the benefits include product validation, government and corporate mentorship, and access to interested investors and other sources of early funding. EMERGE is a partnership with the Center for Innovative Technology that operates a cybersecurity accelerator and was established by the Virginia Commonwealth to create economic development.

**Learn more:**  [https://www.dhs.gov/scienceandtechnology/accelerator](https://mail02.ndc.nasa.gov/owa/redir.aspx?C=6oUmjklx9eDwMhvLfFsJjQeJinpc3MFgDs4H9kS5bEySKmyGzUDUCA..&URL=https%3a%2f%2fwww.dhs.gov%2fscienceandtechnology%2faccelerator) and [http://www.cit.org/emerge/](https://mail02.ndc.nasa.gov/owa/redir.aspx?C=ng74Rg1A-YJwIzKeMJ6xt97lVKldF_nm7rnkRNveI7uSKmyGzUDUCA..&URL=http%3a%2f%2fwww.cit.org%2femerge%2f).

**DHS Silicon Valley Office**

In early 2016, the Science and Technology Directorate of DHS announced the opening of a [DHS Silicon Valley office](https://www.dhs.gov/scienceandtechnology/blog/2015/10/14/siliconvalleyoffice). The primary goal of this office is to “create a pipeline” for nontraditional partners, who may have access to the fast-paced innovation network of the Silicon Valley, to work with the government. DHS representatives have mostly begun private sector engagement by giving presentations to local accelerators and incubators through conferences and panels, and meeting privately with interested parties to answer questions and discuss DHS needs and pain points. Importantly, this office does not preselect companies to work with, and instead serves as a local resource for general, nontargeted business outreach. Officials at this office identified three main barriers Silicon Valley startups face when working with the government: speed of contracting, pivoting (when the startups must change the course of their business model because they need to customize a product for their government partner), and the fear of encumbering intellectual property.

**Learn more:** <https://www.dhs.gov/scienceandtechnology/blog/2015/10/14/siliconvalleyoffice>

**NASA Patent Portfolio/ Software Catalog**

NASA has enjoyed great success in attracting small businesses for technology-based partnerships. The [NASA Technology Transfer program](http://technology.nasa.gov.) acknowledges that some of this success may be due to the zeitgeist that surrounds NASA as a scientific organization; however, all government agencies can provide increased market viability, well-funded resources, and decades of experience. In order to leverage some of these resources, NASA has published consumer-friendly, easy-to-use use websites that list all available NASA technologies, including licensable patents, software, and public domain technologies. These technologies are categories, searchable and available for use by small and large businesses, academia, other government agencies and individuals. Through publishing these searchable portfolios, NASA has increased its visibility in the technology sector while also encouraging the development of new technologies that may solve NASA needs once they are commercialized. NASA is the only agency to currently offer this type of visibility into its available technologies.

**Learn more**:  [http://technology.nasa.gov](https://mail02.ndc.nasa.gov/owa/redir.aspx?C=fIMbN9305VUsMuP7DNUzejRxYRzvASTpbWbvZzYQGZjOfr6mzUDUCA..&URL=http%3a%2f%2ftechnology.nasa.gov%2f).

**NIH SPARC Program**

Funded by the National Institutes of Health (NIH) Common Fund, the [Stimulating Peripheral Activities to Relieve Conditions (SPARC) program](https://commonfund.nih.gov/sparc/index.) is designed to bring together government and individuals, industry, foreign, small business, and non-profit (“nontraditional”) partners with the goal of improving neuromodulation therapies by uncovering the underlying neuroanatomy and biological mechanisms of action governing nerve-organ interactions. The SPARC program is one of three programs at NIH that are currently utilizing NIH’s Other Transaction (OT) Authority, which allows the NIH to streamline the process of awarding federal funds and better target organizations and individuals. NIH officials specifically chose to use OT Authority because it affords NIH staff the ability to incorporate field advancements and expertise inside and outside academia quickly. In addition, staff are able to use existing government infrastructure to manage their OT process from solicitation through active post-award management and tracking deliverables. SPARC relies on OT mechanisms to streamline the award process which includes engaging nontraditional applicants through unique OT funding announcements, negotiating the terms and conditions of OT awards with each selected applicant, funding shortened award periods (e.g., monthly and quarterly), and the enhanced management of the 7 year program’s awardee consortium via a dedicated, SPARC Program Manager.

**Learn more:** https://commonfund.nih.gov/sparc/index.

----

### Deliverable 5: Challenges to deployment / approach limitations (inc. lessons learned from agencies where implemented)

**Key ingredients for success**

* **Decentralize trust and empower personnel lower down the chain of command**
* **Follow the law instead of tradition**
* **Express needs in the form of problems/outcomes instead of solutions/requirements**
* **Start small, gain quick wins, and scale fast**

[Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.]

**1. Decentralize trust and empower personnel lower down the chain of command**

At the level of the individual, contracting officers are often removed from conversations about fulfilling the agency mission. When combined with an environment known for emphasizing caution, it is natural that contracts are often awarded to known companies, even if those companies are not the most likely to deliver the best mission-oriented performance. Startups by contrast are young, unestablished, and may have the best solution for meeting the agency mission, but they are unlikely to be known to and trusted by contracting officers. Providing institutional cover and empowering contracting officers to take risks encourages procurement staff to award contracts to innovative small businesses that can demonstrate technical capabilities, not just to established companies that are well-known. Including contracting officers in conversations about fulfilling the agency mission will give them the final information needed to contract with the most effective, regardless of size, company.

**2. Follow the law instead of tradition**

Agencies at times self-impose restrictions that emanate from tradition rather than actual law. One of the first steps to streamlining procurement and working with small companies is to differentiate recommendations from regulations. The HHS Buyer’s Club [[crosslink]] recognizes this and seeks to find innovative strategies to find new ways to use old regulations and laws, rather than assume there is an essential problem within those laws. As the new practices are validated, they can first be disseminated internally through informational webinars and then circulated more widely through training courses offered by entities like the [Federal Acquisition Institute.](http://www.fai.gov)

**3. Express needs in the form of problems/outcomes instead of solutions/requirements**

The usual process of procurement is to define the solicitation by the solution requested and the related requirements. By design, the wording of the solicitation is typically narrow such that only a handful of suppliers are eligible, and typically there is a bias against small businesses. If instead solicitations specify the problems to be solved and the outcomes expected, smaller companies have room to be creative and will not be immediately disqualified. Additionally, small companies will gain the impression that the government sees them as valuable partners and may be more willing to apply.

**4. Start small, gain quick wins, and scale fast**

Any change takes time and resources. The same agile and Lean Startup perspectives from the world of entrepreneurship can be applied to making changes to government procurement. Many small pilots can try out new ideas and quick wins can help convince any skeptics. The pilots that are successful can then be scaled appropriately.

### Deliverable 6: How-To: Steps for deploying, practices for adapting

* **Tools and resources available to lower the complexity of engaging with startups**
* **Innovative contracting tools to engage non-traditional partners**
* **Other solutions to consider**

**Tools and resources available to lower the complexity of engaging with startups:**

* GSA Schedule 70
* Blanket purchase agreements [crosslink v8 to 18F Agile BPA]

**GSA IT Schedule 70 Making It Easier**

[Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.]

The U.S. General Services Administration (GSA) launched Making It Easier (MIE) in April 2016 for IT Schedule 70 to accelerate and streamline procurement. IT Schedule 70 is the largest IT acquisition vehicle in the U.S. government, and MIE is an effort to meet the speed of IT and supply government purchasers with the most innovative solutions. MIE includes the IT Schedule 70 Roadmap that explains the contracting process in plain language, a standardized welcome package for new contractors, the FASt Lane initiative to reduce the processing time of contact modifications and new offers, Startup Springboard to get companies less than 2 years old on the schedule, and a contracting forecast tool.

The FASt Lane initiative was started because IT Schedule 70 was losing suppliers due to the slow contracting process. GSA streamlined processes by assessing each potential contracting scenario and consolidating the process into a set number of steps to reduce the time to add a new supplier from 110 to within 45 days and modify contracts in 48 hours instead of 2 weeks. Startup Springboard gives young companies a way to get onto IT Schedule 70 by considering the professional experiences of the company executives as a way to ensure supplier quality. In sum, the MIE innovations to speed processes and include, train, and inform young companies make IT Schedule 70 more attractive to startups.

For more information, contact [FAStland@gsa.gov](mailto:FAStland@gsa.gov) .

**Other innovative contracting tools that can engage non-traditional partners include:**

* Rapid technology prototyping
* Staged contracts
* Competitive Milestone-based payments
* Incentive Prizes
* Non-binding purchase commitments

**Rapid Technology Prototyping**

A rapid technology prototyping contract is an innovative contracting model that consists of multiple, small, fast, and cheap acquisitions to “try out” innovative technologies. They may be used to rapidly and inexpensively identify whether cutting-edge, unproven, but potentially transformative technologies are viable options for an agency’s particular requirements.

Read additional guidance on why, when, and how to deploy this approach. [[crosslink V18]]

[“[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014.]

**Staged Contracts**

Staged contracts offer agencies a tool to solicit proposals widely across the private sector—from established contractors to entrepreneurs—and rapidly assess them. A staged contract is an innovative contracting model that follows a three-phase evaluation process consisting of a short concept paper, invite-only full proposal, and subsequent 1-2 year pilot evaluation. Staged contracts may be used for the rapid and inexpensive assessment of many existing or prototype private-sector technologies.

Read additional guidance on why, when, and how to deploy this approach. [[crosslink V18]]

[“[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014.]

**Competitive Milestone-Based Contracts**

Competitive milestone-based contracts are a useful tool for attracting businesses with innovative approaches to well-defined, multi-component problems. A competitive milestone-based contract is an innovative contracting model that promotes competition among a stable pool of selected offerors across a series of clear, technically feasible milestones, with payment withheld until the associated, agreed-upon milestone is completed.

Read additional guidance on why, when, and how to deploy this approach. [[crosslink V18]]

[“[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014.]

**Incentive Prizes**

An incentive prize is a contracting model that promotes innovation by offering a reward upon completion of a specific objective task. Prizes enable the Federal government to pay only for success, establish an ambitious goal, and reach beyond the “usual suspects” to increase the number of minds tackling a problem without having to predict which team or approach is most likely to succeed. Many well-known incentive prizes have focused on catalyzing technology R&D, though prize administrators are increasingly using incentive prizes to drive behavior change, market adoption of existing solutions and interventions, and progress in areas of social policy such as health, energy use, and education.

Read additional guidance on why, when, and how to deploy this approach. [[crosslink V11]] [“[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014.]

**Challenge-based acquisitions**

Challenge-based acquisitions are a “try before you buy” approach. They provide for the small-scale introduction of innovative and cost-saving technologies into existing acquisition programs through “challenge” proposals. With a challenge-based acquisition, an agency can incentivize private-sector entities to develop and demonstrate their solutions in real-world conditions as a source selection mechanism for the award of contracts or task orders for additional testing, refinement, or production of their proposed solution. The award of contracts and task orders occurs if, and only if, the private-sector entity successfully meets the real-world requirements of the challenge. Read additional guidance on why, when, and how to deploy this approach. [[crosslink V18]]

[“[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014.]

**Non-binding purchase commitments**

Non-binding commitments to purchase products can create demand for new, more effective solutions where market requirements remain unmet. Frequently developed in partnership between Federal and private sector partners, commitments can catalyze the voluntary market introduction of cost-effective solutions that advance everyone’s best interests. Non-binding purchase commitments work best when there is both a clearly defined performance specification and a strong expression of interest from potential buyers.

Read additional guidance on why, when, and how to deploy this approach. [[crosslink V18]]

[Rand, D., Summary of Pull Mechanisms, May 17, 2016.]

**Other solutions to consider:**

1. Create workable procurement pipelines
2. Designate a small business representative
3. Address intellectual property concerns through clear communication
4. Leverage existing training resources to build capacity

[Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.]

**1. Create workable procurement pipelines**

Despite the procurement pipeline challenges, at least one widely workable alignment exists for research and prototyping projects for which Other Transaction (OT) Authorities [[crosslink]] or Blanket Purchase Agreements (BPA) [[crosslink V8]] are appropriate. One example of setting up this type of contracting vehicle:

* The government end-user creates a contracting vehicle in advance for an anticipated, broad, repeated need for startup engagement, for instance, DARPA’s Cyber and Robotics Fast Track programs [[crosslink case study]], which used the OT Authority and BPA, respectively. Both the OT Authority and BPA are flexible enough to work with diverse startups.
* The contracting vehicle is competed and awarded to a “thin”prime. A thin prime is a contractor willing to find and contract subs with little interference. The prime understands the needs of the end-user well, and has enough technological savvy to curate and select the subs.
* The end-user promulgates its demand where the startups are – the prime can also be charged with doing this.
* Subs compete, the prime grants funds, and end-user receives the product.

[Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.]

This is only one example, limited only to uses where prototypes are adequate. Other such solutions can be devised, with diligent research and an agency or program office’s commitment to realizing “the art of the possible.”

**2. Designate a small business representative**

In addition to widely disseminating new opportunities, agencies that wish to engage innovative small businesses should consider designating a representative. Not all agencies will have the resources to create a new position dedicated to private sector outreach, but existing employees may be designated duties that include direct contact with incubators and accelerators. Be aware that fair competition regulations may prevent certain agencies from choosing particular incubators or accelerators over others. An alternative solution is to conduct private sector outreach at national business conferences, so-called “innovation weekends”, or even academic events which attract aspiring student entrepreneurs. Agency-specific representation at these events increases the visibility of the government as the consumer, and it also provides a point of contact that may streamline communications between companies and agencies. Keep in mind when choosing the person or people to serve as small business representatives that the selected individuals are knowledgeable, welcoming, and able to manage expectations of potential partner companies.

**3. Address intellectual property (IP) concerns through clear communication**

Agencies should consider providing specific methods for partners to ask questions and receive answers about legal considerations. One option is to designate an individual with legal knowledge to serve as an IP liaison with new private partners, and to publish that person’s contact information in a readily accessible web space. This increases the likelihood that small business with legal concerns will get their questions quickly and efficiently, therefore increasing much needed trust in prospective government partners.

**4. Leverage existing training resources to build capacity**

The [Defense Acquisition University](http://www.dau.mil/default.aspx) and [Federal Acquisition Institute](http://www.fai.gov) have a number of courses aimed toward enabling the inclusion of small businesses and implementation of agile practices. The procurement lessons learned should be shared, when applicable, through these platforms to maximize impact. Civilian contracting officers are required to take 40 hours of training every 2 years; encouraging staff to choose training on innovative contracting models can enhance agency capacity to engage a wider range of partners in the procurement process.

One promising new model for empowering contracting officers with the knowledge to execute new contracting approaches is a new collaborative effort from the Office of Federal Procurement Policy and US Digital Services. The Digital IT Acquisition Professional (DITAP) Training stresses experiential learning and focuses on the acquisition of digital services. Select contracting professionals are offered an intensive six-month blended learning program with both online and in person components. The program consists of online learning through a learning portal, discussion boards, badging, interactive assignment to demonstrate learning, collaborative in-person classroom sessions and a live digital assignment. Training is hands-on and stresses experiential learning over book knowledge and memorization. Participants work alongside acquisitions officials already successfully implementing these new approaches. DITAP also emphasizes an integrated team approach to contracting by involving program officers and legal counsel upfront to decide together how to implement new contracting approaches. This training model could be replicated to provide experiential learning on other innovative contracting models. [[DITAP content sourced from V8; Crosslink ]]

### Deliverable 9: Future directions (“next practices as opposed to best practices”)

**Create a repository of contracting vehicles**

[Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.]

Good contract vehicles are the major tool in the government official’s startups toolbox. One potential future initiative may be the creation of a shared repository of contracting vehicles that provides useful information to potential end-users.

Some innovation hubs are informally acting as contract gurus (e.g. DoD’s DIUx, or GSA’s 18F), not only advising on good contracting vehicles, but also using tech savviness to help program managers and contract officers through advanced procurement processes. This is very helpful, but it is a piecemeal fix for a systemic problem. A true fix would require a holistic response that engages legislative, regulatory, and organizational cultural change reforms. [Ansari, S., Krieger, B., and Siboni, R., “Buying What Works Memo,” Unpublished, August 25, 2016.] ]

**Bring together contracting officers to consolidate steps**

The [GSA FASt Lane](https://www.gsa.gov/portal/content/122754) approach to reducing processing time was to catalog all potential scenarios and consolidate each into 7 standardized steps. This process effectively cut the time to add a new supplier from 110 to within 45 days and modify contracts in 48 hours instead of 2 weeks. Similar progress in other areas is possible by dedicating resources and time to streamlining processes.

### Deliverable 8: Examples of policy that have enabled or encouraged approach (legislation, exec order)

* “[A Strategy for American Innovation](https://www.whitehouse.gov/sites/default/files/strategy_for_american_innovation_october_2015.pdf)”, National Economic Council and Office of Science and Technology Policy, October 2015.
* “[Contracting Guidance to Support Modular Development](https://obamawhitehouse.archives.gov/sites/default/files/omb/procurement/guidance/modular-approaches-for-information-technology.pdf)”, OMB, June 14, 2012
* “[Open Innovator’s Toolkit](https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/openinnovatortoolkit_nstcmemo.pdf),” National Science and Technology Council, February 8, 2012.
* “[Increasing Small Business Participation in Federal Contracting](https://www.whitehouse.gov/sites/default/files/omb/procurement/memo/increasing-small-business-participation-in-federal-contracting.pdf)” OMB, Feb 11, 2011.
* [Social Media, Web-Based Interactive Technologies, and the Paperwork Reduction Act](https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/inforeg/SocialMediaGuidance_04072010.pdf), OMB, April 7, 2010
* [Small Business Administration and Agencies Partnership Agreements](https://www.sba.gov/contracting/contracting-officials/sba-agencies-partnership-agreements)

### Deliverable 7: Online inventory of resources

**Resources**

* [The Voice of Startups in Government](http://www.engine.is/). Research, policy analysis, and advocacy
* [Making it Easier for Suppliers to Work With the Government](https://www.gsa.gov/portal/content/252215), General Services Administration
* [Contracting Cookbook: User Centered Design](https://pages.18f.gov/contracting-cookbook/recipes/user-centered-design/)**,** 18F. Guidelines for contractors to employ user centered design
* Thornton, D., “[How agencies can build an engaged social media following](http://federalnewsradio.com/federal-drive/2016/08/agencies-build-engaged-social-media/)”, Federal Drive, August 17, 2016.
* Mergel, I., “[Working the Network: A Manager’s Guide for Using Twitter in Government](http://www.businessofgovernment.org/sites/default/files/A%20Managers%20Guide%20for%20Using%20Twitter%20in%20Government.pdf)”, IBM Center for the Business of Government, 2012. A guide to getting started with Twitter.
* Mergel, I., “[A Manager’s Guide to Assessing the Impact of Government Social Media Interactions](http://www.businessofgovernment.org/report/manager%E2%80%99s-guide-assessing-impact-government-social-media-interactions)”, IBM Center for the Business of Government, 2014.  How to measure social media impact
* “[Innovative Contracting Case Studies](https://www.whitehouse.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf),” White House Office of Science and Technology Policy (OSTP), 2014.

**For Startups:**

* Mazzucato, M., “The Entrepreneurial State: Debunking Public vs. Private Sector Myths”, Public Affairs, October 27, 2015
* Chappellet-Lanier, T., “[This new accelerator helps startups get federal contracts: Dcode42](http://technical.ly/dc/2015/03/10/dcode42-startup-accelerator-federal-contracts/)”, Technical.ly, March 10, 2015
* Marinaro, L., “[How startups can work with cities to innovate for a smarter future](http://readwrite.com/2017/01/04/startups-can-innovate-smarter-cities-cl1/)”, ReadWrite, January 4, 2017. Interview with Robinson Hernandez on the roles of startups in governments
* Pierce, A., “[The Startup’s Guide to Government Relations](https://www.startupgrind.com/blog/the-startups-guide-to-government-relations-1/)”, StartupGrind, 2016

**Further Reading**

* Piechowski, D., “[Beyond Facebook and Twitter – How Government Organizations Leverage Other Social Platforms Effectively](http://www.businessofgovernment.org/blog/business-government/beyond-facebook-and-twitter-%E2%80%93-how-government-organizations-leverage-other-s)”, IBM Center for the Business of Government, August 26, 2015. Exploration of specific social media platforms and their uses
* Syeed, N., “[Tech Startups Struggle to Tap $82 Billion in Federal Contracts](https://www.bloomberg.com/news/articles/2016-12-08/tech-startups-struggle-to-tap-82-billion-in-federal-contracts)”, Bloomberg Technology, December 8, 2016
* Volkman, E., “[Startups Propelling the Relationship Between Government and Innovation](http://tech.co/identifying-where-tech-meets-government-2016-02)”, Tech.co, February 8, 2016
* Sheuh, J., “[5 Startups Helping to Bring Government into the 21st Century](http://www.govtech.com/products/5-Startups-Helping-to-Bring-Government-into-the-21st-Century.html)”, Government Technology, May 21, 2015
* Mond, A., “[40 Startups That Are Helping Government](https://www.munirent.co/blog/40-govtech-startups)”, The MuniRent Blog, August 21, 2015.
* Ravindranath, M., “[With New Programs, GSA Wants Startups to Sell to the Government. Will They Work?”](http://www.nextgov.com/cio-briefing/2016/04/new-programs-wants-startups-sell-government-will-they-work/127314/), Nextgov, April 7, 2016
* Rohrlich, J., “[Why Can't Startup Companies Get US Government Contracts?](https://news.vice.com/article/why-cant-startup-companies-get-us-government-contracts)”, Vice News, September 24, 2015. Vice reporter explores the business relations with US government contracts.

**Text contributed by:**

Saad Ansari

Brenna Krieger

Ruth Siboni

Dan Ward