

Building an Agile Federal Government

A Call to Action

Building an Agile Federal Government: A Call to Action

A White Paper by a Study Team of the National Academy of Public Administration and the Project Management Institute.

Sponsored by the Samuel Freeman Charitable Trust and the Project Management Institute.

National Academy of Public Administration
1600 K Street, NW
Suite 400
Washington, DC 20006
www.napawash.org

Project Management Institute
14 Campus Blvd
Newtown Square, PA 19073
PMI.org

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Established in 1967 and chartered by Congress in 1984, the Academy continues to make a positive impact by helping federal, state and local governments respond effectively to current circumstances and changing conditions.

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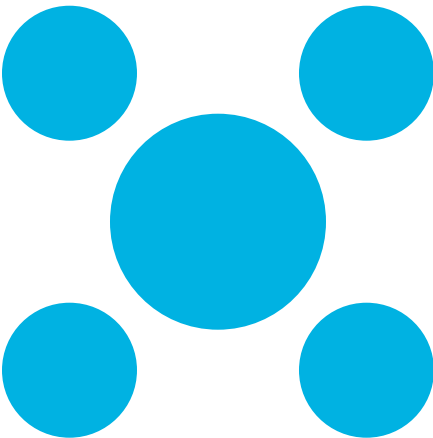
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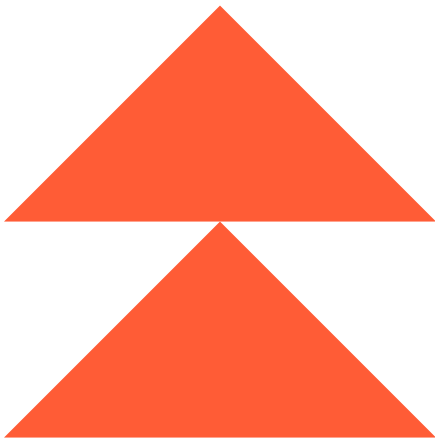
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Foreword



In November 2019, the National Academy of Public Administration (the Academy) presented the results of its year-long effort to identify the Grand Challenges in Public Administration. These challenges—a total of 12 across 4 focus areas—are the most significant issues that governments at all levels will face from a public administration standpoint over the next decade.

At the time we announced the Grand Challenges, we noted that the public sector would need to operate differently in order to address them. For example, public agencies must manage amidst risk and uncertainty, improve service delivery, and protect cybersecurity. This can be done by applying the core principles and lessons learned from agile software development to organizational management in government. Among other things, this new agile management paradigm makes “customer” or end-user satisfaction the top priority, empowers staff members and teams, and utilizes both networks and innovative ways of working to facilitate innovation and solve complex problems.

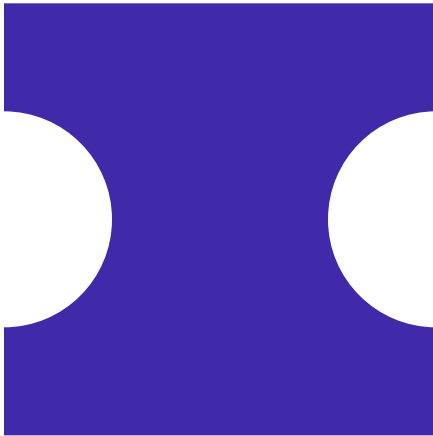
Earlier this year, we were asked by PMI and the Samuel Freeman Charitable Trust to report on how the federal government can become more agile. Our study team—which included Academy and PMI staff members—conducted research and analysis over the past six months to consider such issues as how agile government differs from current management practices, what major issues and impediments hinder agile adoption, and what various departments and agencies need to do to unlock the true potential of agile. The result is a set of 5 practical recommendations with specific implementation steps that we believe can increase agility to ensure that the federal government works, and works for all.

So many have contributed to this important work! This paper certainly could not have been completed without the support of PMI and the Freeman Trust, the contributions of our Agile Government Network, and the input from individual interviewees. I express my deepest appreciation to them—and to our Expert Advisory Group of Academy Fellows and our study team who worked mightily to synthesize information and develop usable recommendations. I hope that federal leaders and managers will find this to be a helpful agenda-setting document and practical guide for how agile can become the federal government’s primary mode of operating in the 21st Century.

Handwritten signature of Teresa W. Gerton in black ink.

Teresa W. Gerton
President and Chief Executive Officer
National Academy of Public Administration

Acronyms and Abbreviations



Academy	National Academy of Public Administration
CAP	Cross Agency Priority
CIGIE	Council of the Inspectors General on Integrity and Efficiency
CMS	Center for Medicare and Medicaid Services
CX	Improving Customer Experiences with Federal Services
FAR	Federal Acquisitions Regulations
GAP	Government Accelerator Program
GCI	Guided Continuous Improvement
HEMS	Department of Housing and Urban Development Enforcement Management System
HR	Human Resources
IT	Information Technology
MBIs	Minimum Business Increments
NGO	Non-Governmental Organization
PMI	Project Management Institute
RAIO	Department of Homeland Security Refugee, Asylum, and International Operations
UAE	United Arab Emirates
USDS	United States Digital Service
VA	U.S. Department of Veterans Affairs
WIP	Work in Process
WoW	Way of Working

List of Figures and Tables

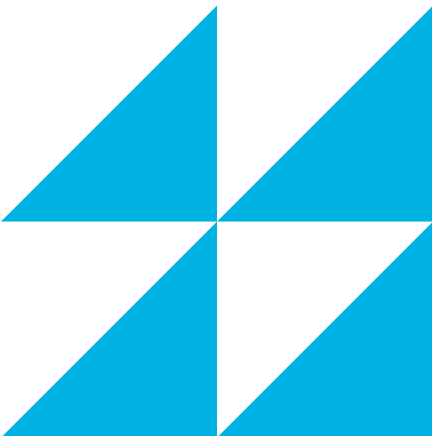


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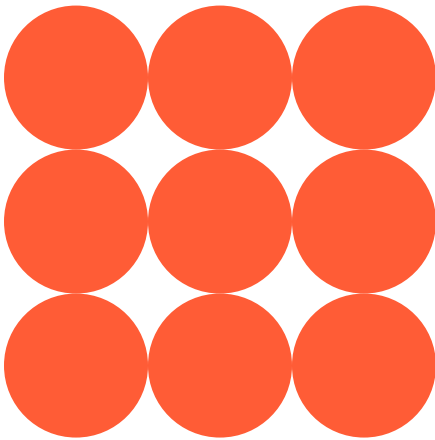
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Executive Summary



In these challenging times, the federal government has no time for ineffectiveness and little tolerance for failure. Steve Denning, author of *The Age of Agile: How Smart Companies Are Transforming the Way Work Gets Done*,¹ describes what he calls a “revolution” taking place in the world of work. Denning notes that due in large part to technology, today’s organizations have the capability to connect everyone and everything, everywhere, all the time; to “deliver value” almost instantly on a large scale; and to operate in a world in which people, insights, and money interact readily.² He sounds a note of optimism that a way is available for governments to achieve improved performance.

That way is agile. Under this new management paradigm, the top priority is “customer” or end-user satisfaction. Staff members are empowered. Small teams do the work in multiple short periods of time. Individuals operate within a focused set of networks. Innovative tools and working approaches that facilitate innovation and support problem solving are used. Risk is identified and addressed early. And the focus is on doing, not documenting.

This white paper—sponsored and supported by the Samuel Freeman Charitable Trust and PMI—focuses on how the federal government can become more agile. We propose that diligent, thoughtful, widespread application of agile—as adapted from the digital world—as a way to manage organizations can significantly improve federal agencies’ responsiveness and results.

We issue this paper as a call to action for the federal government. We hope it inspires agencies to inculcate the key principles of agile into their daily management and operations.

Our recommendations and action steps are presented in Table 1.

New operating principles and practices—and a new leadership and management mindset—will be required for success. With a more flexible management approach, the federal government can be in a stronger position to tackle persistent problems and deal with crises.

Table 1. Recommendations: A Call to Action

RECOMMENDATION	ACTION STEPS
<p>To the maximum extent feasible, agile should become the preferred operating model across the federal government.</p>	<ul style="list-style-type: none"> • Agile should be a cornerstone of the President’s Management Agenda. • Agile should be incorporated into existing Cross Agency Priority (CAP) Goals, especially “Improving Customer Experiences with Federal Services”³ (CX), to ensure that agile management is used whenever appropriate for organizations, programs, and projects. • The General Services Administration’s Office of Government-wide Policy should assign or establish an organizational unit designed to assist federal departments and agencies with their agile management journey.⁴ • The President’s Management Council should coordinate across its member agencies to develop and facilitate the implementation of strategies for accomplishing agile-related goals.
<p>Agile methods of management and operations should be championed inside federal departments and agencies and incorporated into as many of their activities as possible.</p>	<ul style="list-style-type: none"> • Department and agency leaders—both political and career—should seek out, support, and publicize agile programs, projects, and management approaches already existing within the agency. • Leaders and managers should assess their organization’s agile readiness, starting with the indicators outlined in Appendix A, and take steps to increase organizational readiness. • Leaders and managers should ensure that staff members assess their individual readiness, starting with the indicators outlined in Appendix A, for participating in an agile endeavor and take steps to increase their individual readiness. • Leaders and managers should encourage and support agile management practices throughout their organizations (at the agency-wide, program, and project level) by: <ul style="list-style-type: none"> - Empowering team members to make decisions, try out new roles, and determine their way of working; - Encouraging collaboration and discouraging siloed behavior; - Providing support as leaders, managers, and staff members start down the agile management path; - Actively participating in the agile management process, including by attending stand-up meetings, demos, and retrospectives as appropriate; and - Reinforcing the idea that agency actions, processes, and procedures should enhance the experience of customers/end users.

RECOMMENDATION	ACTION STEPS
<p>Key barriers to agile functioning within the federal government should be identified and appropriately addressed within the nation's checks-and-balances political system and legal framework.</p>	<ul style="list-style-type: none"> ▪ The Office of Management and Budget, the General Services Administration, and the Office of Personnel Management should work together to identify the most significant government-wide statutory and regulatory barriers to making agile management an expected way of doing business at the agency and program levels, not just IT projects. ▪ Individual departments and agencies should identify the most significant organizational-specific statutory and regulatory barriers to agile functioning. ▪ Based on the results of these reviews, departments and agencies should take steps to remove or mitigate unnecessary "self-imposed" (that is, non-statutory) regulatory impediments to agile functioning. ▪ Within the first two years of the Administration, the President should work with Congress on a package of needed legislative reforms to ensure that unnecessary impediments to agile operations are addressed or removed. ▪ Federal leaders throughout the government should engage the auditing community—including their Inspectors General, the Council of the Inspectors General on Integrity and Efficiency, and the Government Accountability Office—to get as much buy-in from them as possible on new agile approaches.
<p>Agile approaches, successes, and challenges should be highlighted across the federal government.</p>	<ul style="list-style-type: none"> ▪ The federal management councils—with support from the designated agile unit within the General Services Administration and the U.S. Digital Service—should establish agile communities of practice to support adoption, provide platforms for knowledge sharing, identify lessons learned, and publicize progress. ▪ The new agile unit within the General Services Administration should create agile management playbooks that can be used by departments and agencies in a variety of situations to move forward on their agile journey. ▪ Federal leaders and managers should build relationships with federal councils, including the Council of the Inspectors General on Integrity and Efficiency and others, to encourage and help facilitate the movement toward use of agile principles. ▪ Federal leaders and managers should coordinate with "good government" organizations as resources and allies in promoting agile management, identifying lessons learned, and developing proposed solutions to issues and challenges.
<p>Department and agency leaders should ensure that readily-accessible training opportunities about agile principles and approaches, especially including management skills, are available.</p>	<ul style="list-style-type: none"> ▪ Agile management should be incorporated into federal training programs, including at the Federal Executive Institute, and agency/department working frameworks across the federal government. ▪ Hands-on opportunities for leaders and employees to use these new ways of working together should be provided. ▪ Utilize existing platforms for agile training and instruction and determine how to adapt existing IT agile training for broader audiences such as organizational leaders and managers. ▪ Connections should be made with universities, schools of public policy and public administration, business schools, and other educational areas to encourage them to incorporate agile into their curricula and practical learning experiences.

CHAPTER 1:

The Need—and the Opportunity—for “Agile” in the Federal Government

In these challenging times, the federal government has no time for ineffectiveness and little tolerance for failure. The COVID-19 pandemic is the most recent crisis to show that we need to do things differently. It has revealed that many of our institutions are at best fragile and at worst failures. But other changes our country is facing are—or should be—forcing us to reexamine how government works. For example, we are experiencing the largest migration of the human species, there is a real threat that our planet will not be able to sustain human life in the future, non-sovereign states are players in global politics, etc. The welfare of the US rests heavily on the welfare of the rest of the world.

We have been applying progressive era-20th century approaches to meet head-on 21st century problems

– and some would say not very successfully. Nevertheless, we see some successes that allow us to reimagine the way work is done, and that will allow us to move beyond the outdated and ineffective operations and methods too often used in public programs. We see some organizations and governments able to respond creatively and effectively to crises. Can government learn from these successes?

Fellows and staff at the National Academy of Public Administration (the Academy) have been thinking about these cross-cutting strategic issues. In November 2019, the Academy announced the results of its year-long project to identify the Grand Challenges in Public Administration, as shown in Table 2.

Table 2. Grand Challenges in Public Administration

FOCUS	GRAND CHALLENGE
Protecting and Advancing Democracy	<div>1. Protect Electoral Integrity and Enhance Voter Participation</div> <div>2. Modernize and Reinvigorate the Public Service</div> <div>3. Develop New Approaches to Public Governance and Engagement</div> <div>4. Advance National Interests in a Changing Global Context</div>
Strengthening Social and Economic Development	<div>5. Foster Social Equity</div> <div>6. Connect Individuals to Meaningful Work</div> <div>7. Build Resilient Communities</div> <div>8. Advance the Nation’s Long-Term Fiscal Health</div>
Ensuring Environmental Sustainability	<div>9. Steward Natural Resources and Address Climate Change</div> <div>10. Create Modern Water Systems for Safe and Sustainable Use</div>
Managing Technological Changes	<div>11. Ensure Data Security and Privacy Rights of Individuals</div> <div>12. Make Government AI Ready</div>

Recognizing that addressing these challenges will require public agencies to change the way they do business, the Academy and the IBM Center for the Business of Government formed the Agile Government Center to serve as the hub of a network intended to bring together governments, non-profits, foundations, academic institutions and private sector partners to assist in developing and disseminating agile government principles and case studies of agile policies and programs. The Network is a source of knowledge-sharing and assistance to leaders and managers who want to adopt and implement agile to provide public goods and services that fully meet their user's needs and to build public trust.

With modern technology, communications systems, and contemporary management approaches such as agile, we believe that public agencies can achieve significantly better results. We can more effectively and efficiently perform essential tasks and develop better ways of meeting new challenges as they arise and evolve.

How can this be accomplished? What can be learned from ongoing efforts in the private and public sectors – especially in the high tech world? How can we systematically and successfully apply these new approaches to federal operations and programs? Can the framework, approaches and work processes used in successful IT programs be applied to broader settings and differing managerial challenges?

Along these lines, Steve Denning, author of *The Age of Agile: How Smart Companies Are Transforming the Way Work Gets Done*,⁵ describes what he calls a “revolution”

taking place in the world of work. Denning notes that due in large part to technology, today's organizations have the capability to connect everyone and everything, everywhere, all the time; to “deliver value” almost instantly on a large scale; and to operate in a world in which people, insights, and money interact readily.⁶ He sounds a note of optimism that a way is available for governments to achieve improved performance.

This white paper—sponsored and supported by the Samuel Freeman Charitable Trust and PMI—focuses on how the federal government can become more agile.

We propose that diligent, thoughtful, widespread application of [agile principles](#) adapted from the digital world can significantly improve federal agencies' responsiveness and results. The underlying lesson of these successes points to a more flexible management approach which can strengthen the federal government's overall abilities to tackle persistent problems and deal with crises.

This paper serves as a call to action for the federal government to inculcate the key principles of agile into daily operations in federal agencies, resulting in application and use of agile principles for problem solving where agile fits. The paper summarizes key principles of agile for applicability to governments and presents examples and tools for how to get from where we currently are to where government needs to be. New operating principles and practices—and a new mindset—will be required for success.

What does “agile” mean for government? What are the principles of agile?

Problems that public agencies are being asked to address often are interconnected and do not have clear, direct solutions, thus requiring a process of trial and error to determine what works. Success in addressing a problem may depend heavily on using approaches that are exploratory, iterative, and allow for adjustment. Many complex problems require holistic remedies that are best arrived at when using agility and flexibility for determining actions or solutions.

The agile management paradigm—borrowing from agile software development (specifically, originating with the 2001 *Manifesto for Software Development*)⁷—is increasingly being adapted for use in public management to “enable organizations to thrive in a world of rapid and unpredictable change.” This way of working began with information technology (IT).⁸ Its successful application in non-IT environments is increasing.

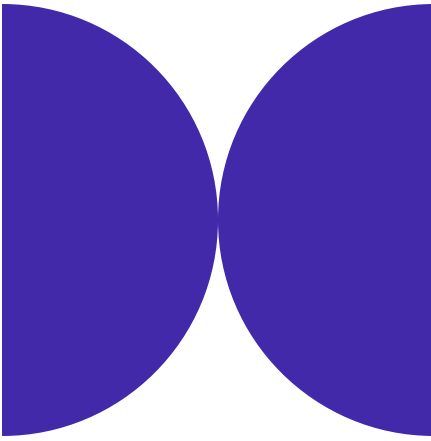
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When agile principles are applied to management and problem solving, they enable a team, a unit, or an entire enterprise to adapt, upgrade, and create products and services in a nimble manner. They permit an organization “to flourish [in a world] that is increasingly volatile, uncertain, complex, and ambiguous.”¹⁰ When the lessons of agile software development are applied to how public organizations are managed and how they tackle complex challenges, positive change can result.

Specifically, agile government agencies operate within these principles:¹¹

- **The top priority is “customer” or end-user satisfaction.** Agile requires a customer-orientation. Too often, organizations and government say that their top priority is the end-user, but this is only so within the constraints of existing systems and processes. They typically want to fit the customer into their existing systems, processes, and practices—not vice versa. Instead, agile organizations ensure that the customer or end user, and the problem he or she is trying to solve, drives “everything” the unit does. Optimally, “everyone” in an organization should be able to identify when something being done has no direct link to client value...prompting those resources to be redirected into an activity that adds client value.
- **Staff members are empowered.** Leaders and managers delegate decisions to the lowest possible levels. They provide guidance, feedback, and support to unblock obstacles that get in their employees’ way. Leaders and managers work to create a culture of feedback and authenticity—a culture where continuous, honest, and constructive feedback is given and received.
- **The focus is on iterating and learning.** Agile pushes teams to focus as much energy as possible on the result or product that clients/customers/users want and need. Teams test these products and results with users, and the products further evolve based on user feedback.
- **Small teams do the work in multiple short periods of time.** To the maximum extent possible, agile teams are small and work in short production cycles. Many organizations use or experiment with (intense) 2-week long periods. Teams are relatively autonomous but customer-driven, and they have and are driven by a “customer-based” metric. Managers become enablers whose job is to resolve questions about priorities and to remove impediments.
- **Individuals operate within a focused set of networks.** Agile organizations function like a fluid network where ideas and information about how to accomplish objectives can come from anywhere in the organization. Collaboration across units is sincerely encouraged, and might be facilitated by common physical space, daily decision-making sessions, and other techniques. Stakeholders in the project—business owners, IT, finance, legal, customer representatives, oversight personnel, and other stakeholders that have a vested interest in the outcomes—come together early and often, participating in planning and review of the iterative stages of the project.
- **Innovative tools and working approaches that facilitate innovation and support problem solving are used.** Tools from the IT world may be adaptable to, and extremely useful in, the non-IT world. These tools support the new ways of identifying and addressing problems and creative methods of innovating.¹² The goal is that the tools and the environment explicitly support the work of the group or unit, removing impediments or unnecessary structures or requirements that slow down progress or limit innovative thinking/problem solving. Teams, especially those new to agile ways of working, are frequently supported in using these tools and approaches through structured training courses as well as the introduction of an agile coach who provides ongoing support.
- **Risk is identified and addressed early.** Because agile processes deliver incrementally, problems in planning can be identified at the end of the iteration or work period, rather than at the end of the entire project. In this mindset, planning is iterative and ongoing, building as it goes and potentially being frequently modified to address identified risks and better meet customer’s needs.



“We’re not throwing a Hail Mary on years’ worth of work and hoping for the best. We are always delivering results and constantly adding value for our users.”

~ BEN GOODRICH
[KESSEL RUN OPERATIONS COMMAND AND CONTROL](#)

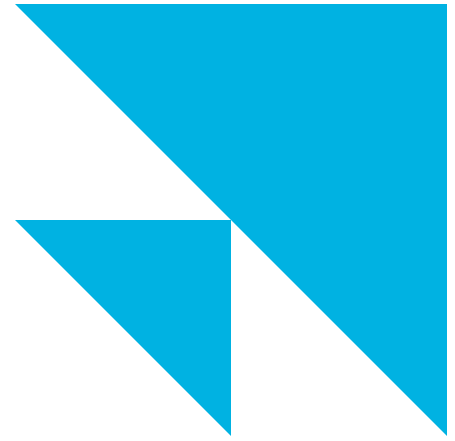
Although the core aspects of agile can be applied at different levels, at this time most agile work in the US Government is still IT-focused. Increased attention is being given, however, to using agile principles for non-IT work as a result of the successful use of this approach in the private sector. These efforts are primarily being done at the project and, sometimes, the program levels, with occasional efforts to apply agile principles to larger work units. We have seen some examples of this in other countries where they are applying agile principles to organizational units or entire agencies. We have identified five levels at which agile principles can be applied in governmental organizations.

- Government-wide;
- Agency-wide;
- Individual organizational units;
- Programs; and
- Projects.

Examples of how public organizations are using agile are contained throughout this report.

CHAPTER 2:

The Current State of Agile in the Federal Government



Agile in the Federal Government started with IT

For several decades, the federal government has been plagued by the unsuccessful development and/or deployment of large-scale computer systems, resulting in billions of dollars of wasted taxpayer money and frustration among agency program managers trying to meet program and taxpayer needs. Numerous studies have been performed that aim to document causes and improve system and program development. As GAO states in its 2015 High Risk Series,¹³ “federal IT investments too frequently fail to be completed or incur cost overruns and schedule slippages while contributing little to mission-related outcomes. GAO has found that the federal government spent billions of dollars on failed and poorly performing IT investments which often suffered from ineffective management...”

Among the government’s practices that have defined federal IT computing since the 1970s and – many contend – have contributed to systems-development problems they feed are complex federal procurement rules and practices; progress measurement requirements calling for percentage completion estimates; “gate reviews” that must occur before the next developmental step can be taken; and expectations for final, completed system and/or product delivery at one defined point in time. These procedures are hallmarks of the waterfall approach to IT development and delivery.¹⁴

Two of the major problems with this approach are:

- Customer needs may change between the lengthy time a project starts and when the final product is delivered, meaning it may no longer meet the customer’s requirements; and
- Making changes in response to what the team has learned or the customer’s changing needs, or accommodating new technology, typically means going back to the beginning to update the requirements document, incurring significant cost and delaying delivery.

Responding to concerns about the costs and challenges of successfully developing and implementing IT systems, individual federal departments such as the Departments of Defense and Veterans Affairs and other “supporting” agencies such as the General Services Administration have sought to tackle the problems that plague IT system development. Laws have been enacted and rules promulgated to rescue or prevent these costly, unsuccessful efforts. But success has been limited and by no means universal.

Faced with similar challenges, in 2001 leading IT developers in the private sector changed their work processes using concepts described in “The Agile Manifesto.” Agile differs from “waterfall” methods which feature the mapping out of a project into phases that follow one after the other with no overlap.¹⁵ In contrast, agile operates with short iteration cycles, incorporating customer needs and changes as the project goes along, and making contributions to the customer throughout that process. A chart helps illustrate the difference and the impact of each.

Figure 1: Waterfall vs Agile Approach to Project Management

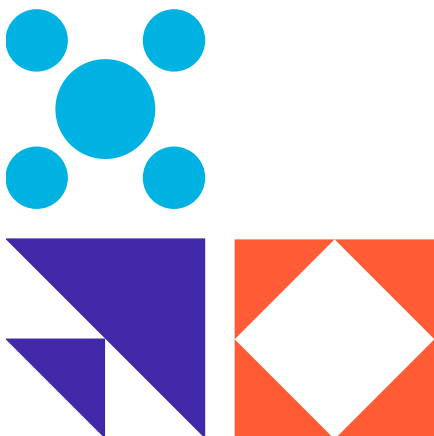


Source: <https://www.alletec.com/blog/can-erp-implementations-transition-from-waterfall-to-agile>

Compared to a sequential waterfall project, agile is a very different way for projects to be accomplished... and as adapted for broader use... for governments to operate. First came building understanding of agile principles for software development and IT initiatives and their incorporation by some federal agencies into their IT projects. Consulting firms, training organizations, and federal agencies themselves are now adopting and adapting agile principles for their systems and applications, resulting in changes in operations in numerous federal software IT areas.

It is now increasingly common for federal agencies to use agile for projects, especially for IT. It is rarer for federal agencies to use agile as a way of managing their organizations.

The U.S. Treasury tracked nearly **\$4 trillion** in annual federal government spending in 400 different financial data elements across 100 federal agencies.



Agile Practices Beyond IT

It has become increasingly clear that the management practices of agile IT projects can work for non-IT projects as well, improving management and delivering outcomes for a wide range of purposes. Agile is no longer just applicable to IT projects.

The World Bank Africa/
transportation agile pilot program
saved an estimated **27,000 hours**
of work when producing its project
appraisal document.

Practices that work for teams when learning how to apply the agile principles described earlier in this white paper to non-IT projects include:

- Starting with (small) customer-driven projects and discrete deliverables that have a smaller scope, smaller teams, and clear-cut deliverables due in relatively shorter time frames. This approach tends to be less risky because of the reduced scope, encourages customers or project owners to experiment on a small scale, and can more easily absorb failure or changes, which in turn encourages teams to try the new approach.
- Encouraging openness – “honest introspection.” Agile methods demand honest introspection so teams can improve, so their products can improve, and so they can meet customer objectives. Making a team comfortable with this openness is a big step, and a vital one to take.
- Managing risks from the outset of the project. Risks or “issues” can be understood early on in a project as potential problems that can impact or even threaten progress. Teams that learn to manage risks encourage team members to train themselves to plan proactively to identify and mitigate risks. Key to this is removing the fear of reprisal which requires leaders to both communicate and model this tolerance for risk identification. Successful teams appreciate the success of identifying and managing risks rather than having to deal with full-blown problems later in a project.

Other practices that need to be rethought when moving to agile and which therefore may require organizational leadership involvement include:

- Rethinking procurement practices and progress measurement for the organization, moving away from building into contracts rigid up-front specification requirements and percentage completion estimates and goals. These can force teams to track questionable indicators and spend much time documenting status for “gate reviews” as they move through the stages of the project. Some government agencies are already using innovative practices that allow for flexibility in procurement approaches that still adhere to requirements outlined in the Federal Acquisitions Regulations (FAR).
- Being strategic in planning for, accessing, developing and retaining needed personnel skills, in recognition of the fact that the government may not have the needed number of resources with the right skills, and therefore contractor support may be required. Thus, teams may include contractor and government individuals working in multiple locations. Meanwhile and simultaneously, agile talent must be developed internally – adequate training and coaching is required. And once federal employees have developed these skills, they should be given incentives to remain in roles where they can continue to share this expertise.

“In exercising initiative, Government members of the Acquisition Team may assume if a specific strategy, practice, policy or procedure is in the best interests of the Government and is not addressed in the FAR, nor prohibited by law (statute or case law), Executive order or other regulation, that the strategy, practice, policy or procedure is a permissible exercise of authority.”

– (FAR 1.102 (D) STATEMENT OF GUIDING PRINCIPLES FOR THE FEDERAL ACQUISITION SYSTEM.)

- Involving oversight functions early in the project. Agile practices may be new not only to the team members who execute the project, but also new to auditors, inspectors general, or other individuals responsible for ensuring that the project adheres to established rules and regulations. By encouraging involvement of these stakeholders early in a project or program, the benefits can be twofold: the transparency that is inherent in agile processes can actually facilitate effective oversight; and the ongoing collaborative contributions from the oversight function can ensure that the project is operating within requirements as it progresses.

Agile Grounded in Crisis Management

Some of the federal government's most successful non-IT applications of agile principles have taken place during times of crisis.¹⁶ Often under these circumstances, there is an urgent requirement for significant, immediate action and commitment of resources. Crisis management often differs from normal operations in several ways: the problem and desired outcomes are clear; individuals at the front line are empowered to make decisions; and risk-taking is understood to be essential. And, often, teams from a variety of organizations with a broad range of expertise must work together in strong collaboration.

Examples of such situations include the coordination and effort required after 9/11; the aftermath of hurricanes in the Caribbean, Louisiana and the Gulf Coast; and responses to the historic wildfires in California. Lessons from the life-saving actions of states and local governments addressing the COVID-19 pandemic already are emerging. Managing all of these natural and man-made disasters hold lessons of how the practice of agile management could result in mitigation and success. At issue is what we can learn about responding to various crises when action is mandatory, and how we can build upon and institutionalize those agile practices into regular management practice.

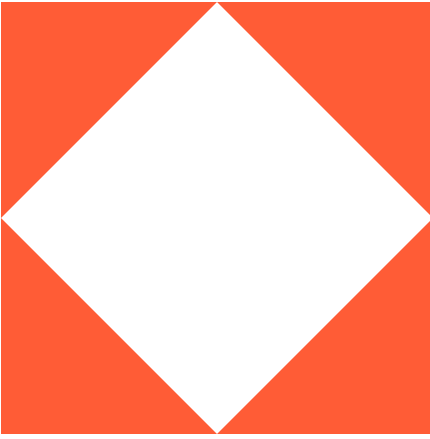
In short, in a non-IT setting, agile emphasizes cross-functional collaboration and an interactive test-and-learn approach to delivering products and services.¹⁷ This approach serves many Federal programs and organizations well in routine work as well as in crises.

Examples of the Power of Agile in Government

The key to success of agile rests with project managers. They must be skilled and knowledgeable in agile techniques, including understanding when the application of agile is appropriate. They must know that their work will be supported by agency leaders, which includes assuring access to needed training and support from the procurement side of the house to make contractual requirements compatible with agile development cycles and to provide needed resources. This support may vary depending upon the size and complexity of the project or undertaking. With thought and support, agile can apply to organizations of any size or complexity: on a project; a program (defined as including multiple projects); an organizational unit or region; at an agency-wide or department level; and even government-wide.

The United States Digital Service (USDS) and the Treasury Department—while providing IT-based examples—are two leaders among several Federal agencies already actively embracing agile principles:

- USDS harnesses agile methods and user-centered design at the program and project level. USDS applies a combination of agile methods from its “Agile Playbook” (summarized in Appendix B) to each of their projects. In the past 6 years, USDS has completed 166 successful projects including updating the Centers for Medicare and Medicaid Services’ (CMS) technological capabilities to reduce the time of developing and implementing new software functionality by 75% and producing a digital tool for Department of Homeland Security (DHS) asylum officers, which reduced processing time of each asylum case by a range of 15 to 28 minutes. USDS has consistently proven that these agile methods save its collaborating agencies time and money, while offering better products to the American people.
- The Treasury Department used agile methods when tasked under the DATA act to supply the American people with government spending data. The Treasury collaborated across units, customer service orientation, and short development cycles, among other agile methods, to track nearly \$4 trillion in annual federal government spending in 400 financial data elements across 100 federal agencies. After meeting the requirements of the DATA Act, Treasury



continued to work in an agile fashion to develop tools for data collection and validation as well as websites that portrayed this spending data in a user-friendly way.

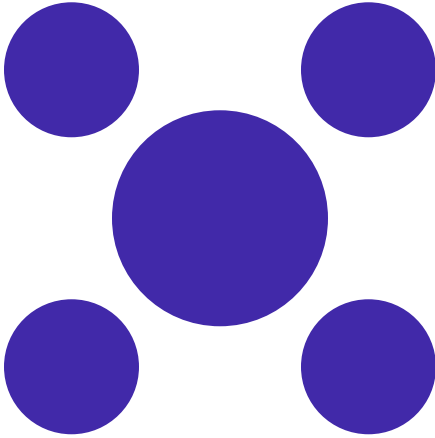
- The U.S. government has so far used agile mainly in IT settings, however, many private sector entities have found success using agile outside of IT. A [McKinsey article](#) from 2018 identified several of these private companies including ING Group, a multinational banking and financial services corporation, and Upwork, a talent recruitment and hiring company. Both organizations use a variety of agile principles, but the article specifically highlighted ING's empowerment of teams and Upwork's customer-focused approach as key contributors to each company's success.

Agile methods are not only successful in the United States but also around the world. Two examples of the use of agile by other countries are described below.

- The United Arab Emirates' (UAE) Government Accelerator Program (GAP), founded in 2016, serves as a collaboration platform for federal and local government agencies, private entities, and NGOs to solve issues in shorter amounts of time. From this platform, government agencies have launched 33 100-day challenges to achieve "specific, measurable, attainable, relevant, and time-bound" goals. This collaborative, cross-cutting platform and short project cycle times exemplify an agile environment for the launch of GAP projects. Successful outcomes from these projects include an increase in screening 1000 women for breast cancer and reducing road deaths by 63% on the country's 5 most dangerous roads.
- [In 2015, the World Bank](#) piloted three different agile programs to shorten processing times of projects and improve staff morale. These pilots used multiple agile methods including cross-functional teams and short-term sprints. The first pilot saved an estimated 27,000 hours of work by using agile to craft its Project Appraisal Document. The second reported more efficient work-streams among team members after instituting daily and weekly check-ins with managers. Finally, the third pilot optimized time and effort of senior executives during a review process for lending policy through delegation of tasks to staff more closely involved in the proposal.

CHAPTER 3:

How Leaders Can Assess Readiness to Adopt Agile



Success in using agile principles takes preparation and concerted action. Readiness to take that step is therefore determined by conditions that exist in the “host” organization as well as by the relevant experience of the project leader(s) and the staff assigned to the undertaking. What to look for and how is briefly discussed in this section of the white paper.

An organization considering adopting agile can maximize its success and minimize the stress that might accompany adopting a new work framework by considering in advance the success factors others have identified in making such a move.

One useful tool leaders can use is an Agile Readiness Assessment. Such a checklist allows a leader to identify key success factors for agile operations, and to flag areas of readiness – or the opposite. Supplemented by resources identified in this paper’s bibliography, this tool can provide assistance both to prepare for the undertaking and to maximize results.

PMI is developing a detailed online Agile Readiness Assessment tool that can be used across and within by agencies, programs, and teams to prepare for conducting or working on both IT and non-IT projects or programs using agile principles.

Organizational Agile Readiness Assessment

PMI’s tools will focus on helping an organization assess how prepared it is to begin implementing agile. The broad/general agency attributes that are critical categories in assessing the readiness of a program or organization to adopt agile principles are:

- organizational structure;
- organizational culture;
- operational context; and
- operational capability.

When conducting such a readiness review, each of these four categories contains specific factors that should be examined. They invite analysis of additional readiness factors – moving into additional levels of detail during the subsequent review steps, as shown in the figure below. (See Appendix A for additional detail.)

Table 3: Organizational Agile Readiness Factors

CATEGORY	READINESS FACTORS
Organizational Structure	<ul style="list-style-type: none"> ▪ Who is driving the activity? ▪ Level of organizational support and enthusiasm? ▪ Outsourcing strategy (will support and people power all come from inside the organization? Or will contractor support be available?)
Organizational Culture	<ul style="list-style-type: none"> ▪ How do leaders view the use of agile for this undertaking? ▪ Is this in response to a crisis, or not? ▪ What level of agile experience does the organization have? How successful? ▪ What kind of support can be expected from the organization's human resource (HR) experts?
Operational Context	<ul style="list-style-type: none"> ▪ What is the extent of customer/citizen involvement in this project? ▪ What authority does the project lead have to commit resources? ▪ What is the team size and what is the structure of the team? ▪ What is expected to be the duration of the project? What is the length of the planning horizon? ▪ What is the level of investment the organization will make in training and coaching the project team in agile principles?
Operational Capability	<ul style="list-style-type: none"> ▪ Is the capacity and capability of existing technology adequate? ▪ If appropriate, what capability does the organization offer for "automated testing?" ▪ What is the organization's track record in adopting new technologies and tools?

When using PMI's organizational self-assessment tool, leaders are asked to rate each readiness factor by selecting the option that best describes their current situation. For example, the assessor would answer the following question to explore "HR support," which is found within the "organizational culture" readiness category.

What kind of support can be expected from the organization's human resource (HR) experts?

- HR has clearly defined, consistent, and stable strategies in place.
- HR is open to evolving existing strategies, but does not (yet) understand the implications of agile.
- HR is a service organization to our teams.
- HR understands agile and has been updating existing HR strategies in support of agile and lean.

As additional questions related to the organizational culture category—and each of the other categories—are answered, what becomes clearer is not only readiness in that category but also what additional steps need to be taken to be able to answer in the affirmative and move ahead with agile.

Individual Agile Self-Assessment

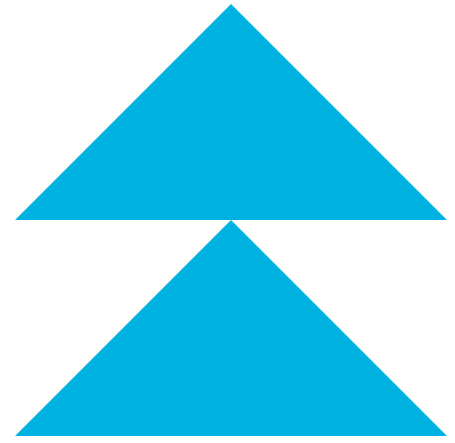
To further determine readiness, and ongoing ability throughout the agile adoption journey, leaders should conduct a detailed and technical review of the experience of project personnel with the principles, outcomes, and practices that are important to project success. This technique is akin to a "maturity model," which is often used in business and government.

Just as the organizational assessment has subcategories, PMI's individual agile assessment considers Principles, Outcomes, and Practices. Each of these has specific, associated knowledge areas and behaviors. Reviewing the readiness of project members against these behaviors allows leaders to identify needed training and other types of preparation needed for success.

See Appendix A for additional detail and examples about PMI's readiness assessment tools.

CHAPTER 4:

Recommendations: A Call to Action



Clearly, agile has a lot of promise for the federal government, but turning this promise into practice will require commitment and deliberate action. The following recommendations provide practical steps that federal departments and agencies—and their leaders, managers, and rank-and-file employees—can take to implement agile in their own organizations and programs. By implementing these recommendations, the federal government can improve the experience of the American people with their government, enhance performance, and increase trust.

Recommendation 1:

To the maximum extent feasible, agile should become the preferred operating model across the federal government.

To implement this recommendation:

- Agile should be a cornerstone of the President's Management Agenda.
- Agile should be incorporated into existing Cross Agency Priority (CAP) Goals, especially "Improving Customer Experiences with Federal Services"¹⁸ (CX), to ensure that agile management is used whenever appropriate for organizations, programs, and projects.
- The General Services Administration's Office of Government-wide Policy should assign or establish an organizational unit designed to assist federal departments and agencies with their agile management journey.¹⁹
- The President's Management Council should coordinate across its member agencies to develop and facilitate the implementation of strategies for accomplishing agile-related goals.

Recommendation 2:

Agile methods of management and operations should be championed inside federal departments and agencies and incorporated into as many of their activities as possible.

To implement this recommendation:

- Department and agency leaders—both political and career—should seek out, support, and publicize agile programs, projects, and management approaches already existing within the agency.
- Leaders and managers should assess their organization's agile readiness, starting with the indicators outlined in Appendix A, and take steps to increase organizational readiness.
- Leaders and managers should ensure that staff members assess their individual readiness, starting with the indicators outlined in Appendix A, for participating in an agile endeavor and take steps to increase their individual readiness.

- Leaders and managers should encourage and support agile management practices throughout their organizations (at the agency-wide, program, and project level) by:
 - Empowering team members to make decisions, try out new roles, and determine their way of working;
 - Encouraging collaboration and discouraging siloed behavior;
 - Providing support as leaders, managers, and staff members start down the agile management path;
 - Actively participating in the agile management process, including by attending stand-up meetings, demos, and retrospectives as appropriate; and
 - Reinforcing the idea that agency actions, processes, and procedures should enhance the experience of customers/end users.
- The federal government and individual agencies should establish annual award programs that recognize and reward agile leaders, managers, and teams.

Recommendation 3:

Key barriers to agile functioning within the federal government should be identified and appropriately addressed within the nation's checks-and-balances political system and legal framework.

To implement this recommendation:

- The Office of Management and Budget, the General Services Administration, and the Office of Personnel Management should work together to identify the most significant government-wide statutory and regulatory barriers to making agile management an expected way of doing business at the agency and program levels, not just IT projects.
- Individual departments and agencies should identify the most significant organizational-specific statutory and regulatory barriers to agile functioning.
- Based on the results of these reviews, departments and agencies should take steps to remove or mitigate unnecessary "self-imposed" (that is, non-statutory) regulatory impediments to agile functioning.

- Within the first two years of the Administration, the President should work with Congress on a package of needed legislative reforms to ensure that unnecessary impediments to agile operations are addressed or removed.
- Federal leaders throughout the government should engage the auditing community—including their Inspectors General, the Council of the Inspectors General on Integrity and Efficiency, and the Government Accountability Office—to get as much buy-in from them as possible on new agile approaches,

Recommendation 4:

Agile approaches, successes, and challenges should be highlighted across the federal government.

To implement this recommendation:

- The federal management councils—with support from the designated agile unit within the General Services Administration and the U.S. Digital Service—should establish agile communities of practice to support adoption, provide platforms for knowledge sharing, identify lessons learned, and publicize progress.
- The new agile unit within the General Services Administration should create agile management playbooks that can be used by departments and agencies in a variety of situations to move forward on their agile journey.
- Federal leaders and managers should build relationships with federal councils, including the Council of the Inspectors General on Integrity and Efficiency and others, to encourage and help facilitate the movement toward use of agile principles.
- Federal leaders and managers should coordinate with "good government" organizations as resources and allies in promoting agile management, identifying lessons learned, and developing proposed solutions to issues and challenges.

Recommendation 5:

Department and agency leaders should ensure that readily-accessible training opportunities about agile principles and approaches, especially including management skills, are available.

To implement this recommendation:

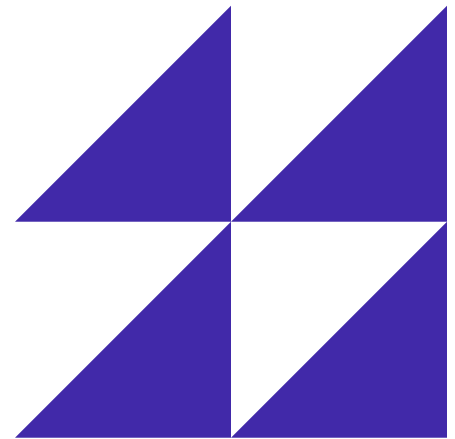
- Agile management should be incorporated into federal training programs, including at the Federal Executive Institute, and agency/department working frameworks across the federal government.
- Hands-on opportunities for leaders and employees to use these new ways of working together should be provided.
- Utilize existing platforms for agile training and instruction and determine how to adapt existing IT agile training for broader audiences such as organizational leaders and managers.
- Connections should be made with universities, schools of public policy and public administration, business schools, and other educational areas to encourage them to incorporate agile into their curricula and practical learning experiences.



APPENDIX A:

PMI's Self-Assessment Tools

PMI is deploying an online Agile Readiness Assessment. The Assessment is designed for use by organizational leaders to evaluate the readiness of their organizations—subsequently, their personnel—to embark upon projects using agile principles. The details implicit and explicit in these readiness factors provide both a means for evaluating the “condition” of the organization embarking upon an activity to be conducted using agile principles, and for implicitly providing a set of standards and/or behaviors that indicate what is needed for the organization and the people within it to be successful.



Assessment of Organizational Readiness

Table 4 overviews the readiness factors addressed in the assessment, and **Table 5** provides several detailed examples of how readiness factors are explored.

Table 4. Agile Readiness Factors

CATEGORY	READINESS FACTORS
Organizational Structure	<ul style="list-style-type: none">▪ Who is driving the activity?▪ Level of organizational support and enthusiasm?▪ Outsourcing strategy (will support and people power all come from inside the organization? Or will contractor support be available?)
Organizational Culture	<ul style="list-style-type: none">▪ How do leaders view using agile for this undertaking?▪ Is this in response to a crisis, or not?▪ What level of agile experience does the organization have? How successful?▪ What kind of support can be expected from the organization's human resource (HR) experts?
Operational Context	<ul style="list-style-type: none">▪ What is the extent of customer/citizen involvement in this project?▪ What authority does the project lead have to commit resources?▪ What is the team size and what is the structure of the team?▪ What is expected to be the duration of the project? What is the length of the planning horizon?▪ What is the level of investment the organization will make in training and coaching the project team in agile principles?
Operational Capability	<ul style="list-style-type: none">▪ Is the capacity and capability of existing technology adequate?▪ If appropriate, what capability does the organization offer for “automated testing?”▪ What is the organization's track record in adopting new technologies and tools?

Table 5. Examples of how readiness factors for organizational culture are explored.

	WORKS AGAINST YOU		NEUTRAL	WORKS FOR YOU	
What is your leadership's mindset?	Leadership sets the direction and expects people to do as they are told.	Leadership provides direction and allows teams to operate as they see fit within defined constraints.	Leadership has a servant-leader mindset where they focus on enabling teams to fulfill their goals.	Leadership has a host-leadership mindset where they focus on enabling teams to collaborate with one another to fulfill organizational goals.	Leadership has a growth mindset and understands the potential of Lean and Agile.
Are you dealing with a crisis?	Yes, but we have little or no time to improve.	No, and we are working at an unsustainable pace.	No, and we are working at a sustainable pace.	No, and we have spare capacity to invest in improvement.	Yes, and the crisis underscores the need to improve.
How experienced are you with agile?	We have tried agile in the past but failed at it. People are now disillusioned.	We have tried agile in the past and have had limited success.	We have not yet tried to adopt agile strategies.	We have adopted agile within many teams, mostly in IT, and people are willing to improve.	Earlier attempts at adopting agile strategies made advancements in many areas, including outside of IT, and people are looking to improve.
What is the level of involvement of your human resource (HR) group?	HR has clearly defined, consistent, and stable strategies in place.	HR is open to evolving existing strategies, but does not (yet) understand the implications of agile.	HR is a service organization to our teams.	HR understands agile and has been updating existing HR strategies in support of agile and lean.	HR is ready to actively support any improvement initiative.

Assessment of Individual Readiness

PMI's Individual Agile Self-Assessment tool is intended to enable project leaders to perform a detailed, technical review of the experience of project personnel with the principles, outcomes, and practices that are important to project success.

Table 6 presents the behaviors that the assessment investigates and **Table 7** provides several examples of how each behavior is explored, using a 5-point scale that will allow project members to identify their current success levels.

When team members take the assessment over time, perhaps every 2 to three months, trend analysis is performed so that the team can assess its improvement over each period.

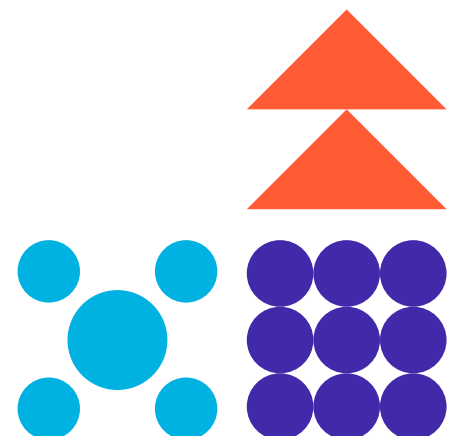


Table 6. Individual Behavioral Assessment

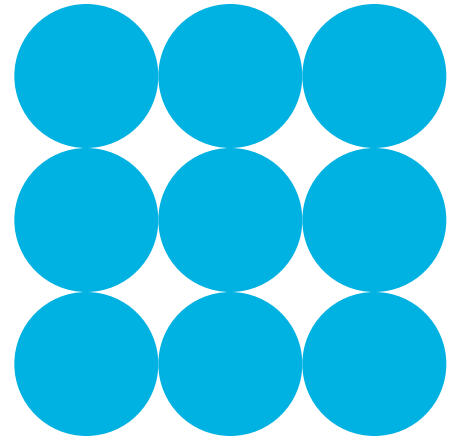
BEHAVIORS			
Principles		Outcomes	Practices
<ul style="list-style-type: none"> ▪ Make work visible ▪ Batch size ▪ Customer focus ▪ Limit work in process (WIP)/ focus on finishing ▪ Reduce delays 	<ul style="list-style-type: none"> ▪ Flow ▪ Growth mindset ▪ Learn fast ▪ Lean management ▪ Quick feedback ▪ Systems view 	<ul style="list-style-type: none"> ▪ Alignment ▪ Quality focus ▪ Accelerate value realization ▪ Value creation structure ▪ Mistake-proofing ▪ Coaching ability 	<ul style="list-style-type: none"> ▪ Guided continuous improvement (GCI) ▪ Planning horizon ▪ Sustainable pace ▪ Choose your way of working (WoW) ▪ Self-organization

Table 7. Gradations of Behaviors, Knowledge, and Experience for Individual Self-Assessment

BEHAVIORS	BEGINNER ²⁰	NOVICE ²¹	COMPETENT ²²	PROFICIENT ²³	EXPERT ²⁴
Batch size	I tend to work on bigger things because it lets me see how everything relates to everything else.	I try to work on components of things so I can complete them. I often build a layer, then add another layer until I am done.	I work on backlog items by taking thin, end-to-end slices to get them done. This enables quicker feedback.	If a PBI is not the smallest thing that it can be to deliver it. I talk to the PO to help me break it down.	I coach my team about the importance of MBIs, how they are different from MVPs, and why features and stories need to be pulled out from them.
Flow	I never seem to get anything done. I keep on getting stuck or interrupted. Work items keep on getting stuck on dependencies.	I am conscious of my team's commitments and push back on unnecessary interruptions. My team has single points of failure which leads to bottlenecks.	My team has limited interruptions or single points of failure. Dependencies and delays exist, but I do a good job of managing them. We have WIP limits, and I coach the team to focus on getting work to done.	My team gets the work done that we commit to. I coach the team to share responsibilities to eliminate the majority of single points of failure. Very rarely do we run into an unforeseen dependency.	My team gets stuff done really quickly with no waiting and no delays.
Quality focus	My organization does not use Minimum Business Increments (MBIs) and does not routinely include acceptance criteria in work requests. I sometimes will deliver incomplete work to make a deadline, knowing I can always fix it later.	I reject any incoming work that does not include acceptance criteria.	I never knowingly deliver work products with defects, even when it means missing a deadline.	I use explicit workflow with definitions of ready and done to ensure a consistent level of quality in the work products my team delivers.	Once my team's Minimum Business Increments (MBIs) have met their acceptance criteria and before delivery, I make sure my team performs end-to-end testing and validate that the MBI actually meets the customer's needs.
Self-organization	I take that attitude that I can organize how I am to do my own work so that I am most efficient.	When I organize myself or my team, I look to see how I interact with other individuals and teams.	When I organize myself or my team, I make sure my work does not adversely affect others.	When I organize myself or my team, I look to see how can we interact with synergy.	I look at self-organization from the perspective of the whole.

APPENDIX B:

Brief Case Descriptions of Agile Management



This Appendix provides a high-level description of a number of instances where governments have used agile to solve particular problems.

U.S. Treasury

Q: What was the problem?

A: The U.S. Treasury needed to track nearly \$4 trillion in annual federal government spending in 400 different financial data elements across 100 federal agencies.

Q: What tools were used?

A: Treasury utilized the New Mindset (collaboration across units, role of planning), Different Ways of Working (customer service orientation, customer driven teams, teams that do not necessarily work in a linear fashion, short development cycles for products with continuous iteration), and Innovative Tools and Techniques (stand-up meetings.)

Q: What was the outcome?

A: Through agile development, Treasury enables the development of consistent government-wide standards, a tool for data collection and validation, and a website to display the data for external stakeholders.

The World Bank

Q: What was the problem?

A: In 2015, staff at the World Bank were concerned about the length of time it took for them to develop and complete projects. WB leadership wanted to shorten the processing time of these projects and improve staff morale.

Q: What tools were used?

A: Through pilot programs, WB experimented with various tools including value streaming, Different Ways of Working (cross-functional teams and short-term sprints), Kanban boards, pulse surveys, and an agile fellowship program.

Q: What was the outcome?

A: The three pilot programs found varying degrees of success. The first, the Africa/transportation pilot, which focused on extraneous information in its Project Appraisal Document, reduced the page length from 140 pages to 40 pages saving an estimated 27,000 hours of work. The second, the South Asia/health pilot, reported more efficient work-streams among team members after instituting daily and weekly check-ins with managers. Finally, the third program, the Europe and Central Asia pilot, optimized time and effort of senior executives during a review process for policy lending through delegation of tasks to staff more closely involved in the proposal.

United Arab Emirates Government Accelerator Program (GAP)

GAP, founded in 2016, is a platform for federal and local government entities to solve issues in shorter amounts of time through accelerating the delivery of strategic programs, the development of policies and regulations, and enhancing government services.

Q: What was the problem?

A: The UAE wanted to accomplish the challenges faced by federal and local governments in shorter amounts of time.

Q: What tools were used?

A: The UAE created a platform that allowed for better integration among a variety of stakeholders including federal and local government entities, NGOs, and private entities. From this platform, government entities launch 100-day challenges which seek to achieve “specific, measurable, attainable, relevant, and time-bound” goals. The UAE have launched 3 cohorts of 100 day challenges revolving around Government Services, Annual Government Meeting Initiatives, and Food Security as well as several “special cohorts” for a total of 33 challenges. Each cohort includes several 100-day challenges.

Q: What was the outcome?

A: The platform has spurred success in multiple functional areas:

- 24 lives and 174 million UAE dirham saved by reducing road deaths on the five most dangerous roads in the UAE by 63% over same 2-month period the year prior (Ministry of Interior team).
- 16% reduction in emissions from Emirates Global Aluminum factory in 100 days, equivalent to annual emissions of 460,000 cars (Ministry of Climate Change and Environment team).
- 27 patents filed in the UAE in 100 days, a seven-fold increase compared to the same time last year (Ministry of Economy team).
- 100% of Emirati children on waiting lists enrolled in public kindergartens in Dubai eliminating a total waitlist of 435 names in 50 days (Ministry of Education team).
- 1,061 Emirati nationals hired in the private financial sector in 100 days (Ministry of Human Resources and Emiratization).
- 2,201 women screened for breast cancer in the Emirate of Fujairah in 100 days compared to 1,200 in the full year prior (Ministry of Health team).

United States Digital Service, within the US General Services Administration

The USDS has used agile methods to complete 166 successful projects over the past 6 years. USDS utilizes a playbook of 13 agile “plays” including those revolving around user feedback and flexibility. USDS likely utilizes a combination of these plays in each of their projects.

Figure 2. USDS Digital Playbook

DIGITAL SERVICE PLAYS	
1. Understand what people need	8. Choose a modern technology stack
2. Address the whole experience, from start to finish	9. Deploy in a flexible hosting environment
3. Make it simple and intuitive	10. Automate testing and deployments
4. Build the service using agile and iterative practices	11. Manage security and privacy through reusable processes
5. Structure budgets and contracts to support delivery	12. Use data to drive decisions
6. Assign one leader and hold that person accountable	13. Default to open
7. Bring in experienced teams	

Source: <https://playbook.cio.gov/>

In their Spring 2020 Impact Report they highlighted five projects in the following agencies:

1. Department of Veterans Affairs (VA)

Q: What was the problem?

A: Veterans experienced disjointed navigation between sites and pages on the VA website because the website format was built around the organizational structure and not around user experience.

Q: What tools were used?

A: USDS reorganized the website based on input collected from over 5,000 Veterans, service members, caregivers, and family members. The USDS team also collaborated with offices across the VA to inform decisions on connecting services with needs.

Q: What was the outcome?

A: There are now 1.7 million logins every month on VA.gov. The resulting website has also increased customer satisfaction by 30%.

2. Centers for Medicare and Medicaid Services (CMS)

Q: What was the problem?

A: Medicare's infrastructure systems lagged behind Medicare's growth and evolution from a fee-for-service model to a value-based care model. The lag in technology capabilities hindered CMS ability to enact policy. USDS attempted to modernize these systems.

Q: What tools were used?

A: USDS utilized its agile playbook with a focus on user feedback and flexibility for future changes. USDS also collaborated with staff from CMS.

Q: What was the outcome?

A: USDS and CMS produced a cloud-based system which could be more easily adapted to CMS policy changes relative to process claims and pay providers. This new system drove 65,000 new monthly claims priced in the cloud-based service and a greater than 75% reduction in time need to deploy new code. They were now able to deploy new code in a few days instead of four weeks. Since the USDS' assistance ended with this project, CMS continued to use scaled agile.

3. Department of Homeland Security Refugee, Asylum, and International Operations (RAIO)

Q: What was the problem?

A: The number of incoming asylum applications outpaced the RAIO capacity to vet each application by over 300,000 applications. RAIO needed a solution that "adjudicated cases more quickly while not compromising the integrity of the process."

Q: What tools were used?

A: USDS collaborated with RAIO. USDS also involved the "customer" by traveling to 10 nationwide asylum offices to training the relevant officers.

Q: What was the outcome?

A: The collaborative team produced a digital tool that automated certain tasks while ensuring the proper resources were readily available for tasks that needed the asylum officer's attention. Officers saved an average of 15 to 28 minutes on documentation of each case. 76% of the staff also stated that the new tool was easy to use.

4. Department of Housing and Urban Development

Q: What was the problem?

A: Users experienced issues with HUD's Enforcement Management System (HEMS), which processed fair housing discrimination cases. Users began using workarounds, which reduced HUD's ability to process complaints.

Q: What tools were used?

A: USDS collaborated with HUD to gather user feedback at HUD field offices, partner agencies, and HUD headquarters. USDS then matched this input with market research to find a suitable vendor.

Q: What was the outcome?

A: USDS found a technology vendor to support HEMS in 3 months and also provided user input for a redesign of HUD Form 903, the largest method for collecting housing discrimination complaints. USDS infused agile methods into HUD's acquisition process enabling the agency to "adopt more innovating contracting methods."

5. Department of Justice

Q: What was the problem?

A: Experts in the Americans with Disabilities Act could easily navigate the ADA.gov website, while non-experts could not. This hindered non-experts' ability to answer their questions and solve their problems through ADA.gov.

Kessel Run

Kessel Run is a "hybrid acquisition and operations unit with the mission to revolutionize the manner and methods used to acquire and field software solutions for the warfighter." It is known as a software development unit inside the Air Force that uses agile processes.

Q: What was the problem?

A: Kessel Run's mission involves delivering useful combat capabilities to the military while managing and updating the Air Force software acquisition process. It "builds, tests, delivers, operates, and maintains cloud-based infrastructure and warfighting software applications for use by Airmen worldwide...on time, as needed and with efficiency and cost-effectiveness..."

Q: What tools were used?

A: USDS used its agile playbook. USDS also recommended DOJ conduct further user-research to better match support of the website with user needs.

Q: What was the outcome?

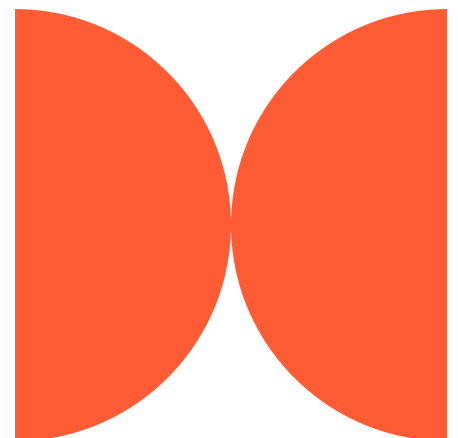
A: The ADA.gov team made a stronger case for iterative changes to the website.

Q: What tools were used?

A: Throughout the organization, Kessel Run practices lean product development, pair programming and test driven development, user-centered design, continuous delivery, continuous feedback, and continuous learning.

Q: What was the outcome?

A: Jigsaw, Kessel Run's first project, saved approximately \$12 million a month in fuel costs. In other projects, Kessel Run more quickly updates capabilities for warfighters through continuous authority. KR claims their operational software capabilities have saved over \$13 million and 1,100 man-hours per month. (Source: <https://www.c4isrnet.com/it-networks/2019/01/14/how-the-air-forces-new-software-team-is-proving-its-worth/>)



APPENDIX C:

Resources for Agency Leaders

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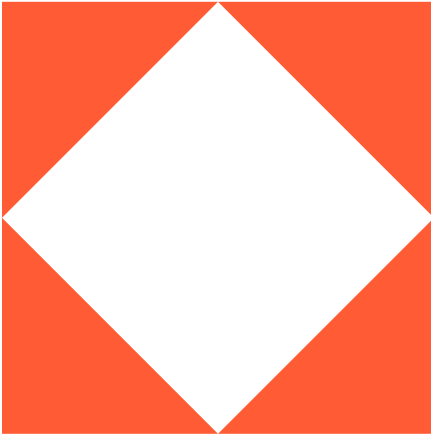
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APPENDIX D:

Individuals Interviewed and/or Contacted for this Study



- **Beth Angerman**, Client Service Partner, Slalom
- **Allison Brigati**, Deputy Administrator, General Services Administration
- **Mark Bolter**, Vice President of Cloud Operations, IBM
- **Xavier Briggs**, Senior Advisor, former Program Vice President, Ford Foundation
- **Dustin Brown**, Deputy Assistant Secretary for Management, OMB
- **Jan Shelly Brown**, Associate Partner, McKinsey & Company
- **Dan Chenok**, Executive Director of the Center for The Business of Government, IBM
- **Ed DeSeve**, Coordinator Agile Government Network and Visiting Fellow at the IBM Center for the Business of Government
- **Amy Edwards**, Deputy Assistant Secretary, Department of the Treasury
- **Victoria Espinel**, President and CEO, The Software Alliance
- **Bill Eggers**, Executive Director for the Center for Government Insights, Deloitte Research
- **Angela Evans**, Dean of the LBJ School of Public Affairs, The University of Texas at Austin
- **Jane Fountain**, Distinguished Professor, University of Massachusetts Amherst
- **Sukumar Ganapati**, Associate Professor, Florida International University
- **Ruth Gordon**, Managing Consultant, IBM Global Services
- **Margaret Graves**, Executive Vice Chair, American Council for Technology and Industry Advisory Council
- **Brian Hancock**, Partner, McKinsey & Company
- **Eddie Hartwig**, Deputy Administrator, U.S. Digital Service
- **Mary Ellen Joyce**, Executive Director, Brookings Executive Education
- **John Kamensky**, Senior Fellow, IBM Center for the Business of Government

- **John Koskinen**, Commissioner of Internal Revenue, Department of the Treasury
- **Don Kettl**, Professor, University of Texas at Austin
- **Anne Khademian**, Director of the School of Public and International Affairs, Virginia Tech
- **Dave Mader**, Civilian Sector Chief Strategy Officer, Deloitte Consulting
- **Kimberly McCabe**, Technology Principal, Deloitte Digital
- **Stanley McChrystal**, Co-founder, McChrystal Group
- **J. Christopher Mihm**, Managing Director for Strategic Issues team, GAO
- **Stosh Misiaszek**, Director of Federal Business Development, Scaled Agile
- **Beth Noveck**, Professor, New York University
- **Marc Ott**, Executive Director, International City/County Management Association
- **Pablo Juarez**, Department of Homeland Security USCIS
- **Kyle Peters**, Interim Managing Director and Chief Operating Officer and Vice President of Operations, World Bank
- **Mark Pisano**, Professor, University of Southern California
- **Max Reece**, Deputy Commander and Chief Operating Officer, Kessel Run, US Air Force
- **Matt Rosenstock**, Associate Partner, McKinsey & Company
- **Robert Shea**, National Managing Principal, Grant Thornton
- **Jordon Sims**, Founding Partner, Imperium Global Advisors
- **Melissa Starinsky**, Director of Acquisition, Grants Management, Centers for Medicare and Medicaid Services
- **Dave Wennergren**, CEO, American Council for Technology and Industry Advisory Council
- **Jennifer Widner**, Professor, Princeton University
- **Sarayu Srinivasan**, Senior Advisor, OMB
- **Paul Verkuil**, Senior Fellow, Center for American Progress
- **Danny Werfel**, Managing Director and Partner, Boston Consulting Group
- **Andrew Whitford**, Professor, The University of Georgia

APPENDIX E:

Biographies of Expert Advisory Group Members

G. Edward DeSeve,* Visiting Fellow, IBM Center for the Business of Government. Executive in Residence, Brookings Executive Education. Former Co-Executive Director, State Budget Crisis Task Force; Senior Advisor to the Office of Management and Budget for Director for Implementation of the Recovery Act, Special advisor to the President and Assistant to the Vice President; Professor, Fels Institute of Government, University of Pennsylvania; Professor and Director, Management Finance and Leadership Program, School of Public Affairs, University of Maryland College Park; Managing Partner, Governmentum Partners. Former Partner and National Industry Director, Federal Government, KPMG; Deputy Director for Management, and Controller, U.S. Office of Management and Budget; Chief Financial Officer, U.S. Department of Housing and Urban Development; Special Assistant to the Governor, Commonwealth of Pennsylvania; President, Public Financial Management; Managing Director, Merrill Lynch Capital Markets. Former positions with the City of Philadelphia, Pennsylvania: Analyst and Deputy Director, Community Renewal Program; Assistant to the Director of Finance; Deputy Director of Finance for Budget; Director of Finance.

Angela Evans,* Dean, Fellow of J. J. “Jake” Pickle Regents Chair in Public Affairs, and Clinical Professor of Public Policy Practice, Lyndon Baines Johnson School of Public Affairs, University of Texas. Former Deputy Director, Congressional Research Service; Acting Deputy Librarian and Head of Congressional Relations, Library of Congress. Former positions with Congressional Research Service: Senior Specialist; Acting Assistant Director for the Research; Section Head for Education and Labor; Analyst.

Ron Feldman,* Chief Operating Officer, Federal Reserve Bank of Minneapolis; Executive Vice President, Supervision, Regulation and Credit, Federal Reserve Bank of Minneapolis; Senior Vice President; Supervision, Regulation and Credit; Federal Reserve Bank of Minneapolis; Vice President, Supervision, Regulation and Credit, Federal Reserve Bank of Minneapolis; Vice President, Payments, Federal Reserve Bank of Minneapolis; Assistant Vice President, Supervision, Regulation and Credit, Federal Reserve Bank of Minneapolis; Senior Analyst, Planning, Hennepin County; Analyst, Congressional Budget Office; Presidential Management Intern, General Accounting Office and Office of Management and Budget.

Study Team Members

Joseph P. Mitchell, III, Project Director
Director of Strategic Initiatives and International Programs, National Academy of Public Administration; Member, National Science Foundation Business and Operations Advisory Committee; Associate Director, Office of Shared Services and Performance Improvement, General Services Administration; Director of Academy Programs, National Academy of Public Administration; Project Director, Senior Analyst, and Research Associate, National Academy of Public Administration

Sarah (Sally) F. Jaggar,* Senior Advisor
Project Director and Senior Advisor, National Academy of Public Administration; Project Director for Zelos Corporation at the Department of Housing and Urban Development and the Nuclear Regulatory Commission; Senior Strategic Advisor at the Partnership for Public Service; Managing Director for Mission Support, Managing Director for Health Financing and Public Health Issues, and Director of Operations in the Accounting and Information Management Division at the US Government Accountability Office; NAPA Fellow.

Scott Ambler, Senior Advisor

Vice President and Chief Scientist for Disciplined Agile, Project Management Institute. Advisory board member with Architectural Thinking Association, ScaleFree Inc., and SEMAT. Author or co-author of 21 books. Former executive positions with Disciplined Agile Institute and IBM.

Jill Diffendal, Senior Advisor

Government Relations, Project Management Institute; Academic Programs Administrator, Project Management Institute; Senior Communications Specialist, Trion, a Marsh & McLennan Agency; Editor, Advance Newsmagazines, Merion Publications

David Summers, Senior Advisor

Government Relations, Project Management Institute; Executive Communications, Project Management Institute; Senior Director, The Seminar Network; Director of Implementation, Aristotle International; Program Manager, Wisconsin Department of Health, Division on Health Care Access and Accountability; Project Manager, Epic Systems Corporation

James Higgins, Research Associate

Research Associate for Grand Challenges in Public Administration, National Academy of Public Administration; Intern, The Cohen Group; Extern, U.S. Patent and Trademark Office.

Peiyao Jia, Intern

University of Maryland, PhD Candidate in Policy Studies; New York University, M.A. in Economics; Fordham University, B.A. in Economics Intern for Grand Challenges in Public Administration, National Academy of Public Administration

Kate Kellen, Intern

Gonzaga University, current Junior majoring in Political Science and Government; American University, Washington Semester Program; Intern for Grand Challenges in Public Administration, National Academy of Public Administration

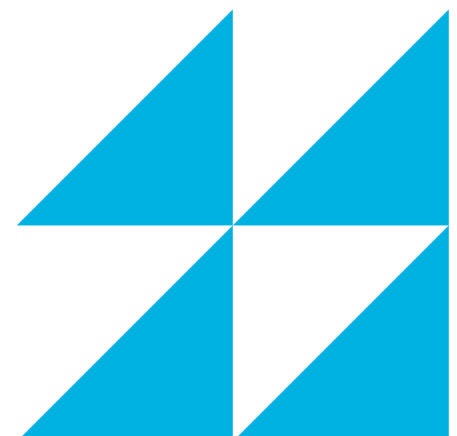
Benjamin Feldman, Intern

Cornell University, current Junior majoring in Governance and Political Influence; Office of Professor Sarah Kreps, research assistant; Intern for Grand Challenges in Public Administration, National Academy of Public Administration.

Angie Orange, Intern

Virginia Tech, current Senior majoring in National Security and Foreign Affairs; Intern for Grand Challenges in Public Administration, National Academy of Public Administration.

**Academy Fellow.*



Endnotes

- 1 Stephen Denning, *The Age of Agile: How Smart Companies Are Transforming the Way Work Gets Done*, American Management Association, 2018
- 2 Ibid., Page xiii.
- 3 <https://www.performance.gov/CAP/CX> Improving Customer Experience with Federal Services. See the Goal Statement, Challenge, and Worksheets, which includes information on supporting documentation, a schedule of desired outcomes and operations by 2030, and other implementing frameworks.
- 4 The purpose of this unit is to provide concrete assistance to agencies to take agile to the next level: that is, to ensure that agile is not just used for IT projects, but applied to broader organizational management issues so that this becomes a new way of leading and managing in the federal government. The GSA unit and the U.S. Digital Service would need to coordinate to (1) allow GSA to learn from USDS's experiences on agile in technology and design and (2) to assure there is no unnecessary overlap and duplication in their missions, roles, responsibilities, and activities.
- 5 Stephen Denning, *The Age of Agile: How Smart Companies Are Transforming the Way Work Gets Done*, American Management Association, 2018
- 6 Ibid., Page xiii.
- 7 Manifesto for Software Development – <https://agilemanifesto.org>
- 8 Agile advocates refer to the “old” way of working as “waterfall”... where work and projects are planned in full from start to finish before work on the project begins. Waterfall project management typically involves breaking a project into phases that follow one after the other with no overlap. Thus the waterfall approach requires detailed specifications up front and completion of one phase before moving on to the next. As a result, issues that may occur over the life of the project—including changes to customer needs, changes in available technology, or flaws in some aspect of the process—may not be discovered until the project is complete.
- 9 Denning, op. cit, p. xiv.
- 10 Denning, op. cit., p xv.
- 11 The Agile Government Center has published a more detailed set of principles specifically for governments. <https://www.napawash.org/grandchallenges/challenge/agile-government-center>
- 12 Examples include journey mapping, test-first development, agile modeling, refactoring, etc. Some even influence the design of work spaces and operations of agile teams, including open space settings, burn-down charts, automated dashboards, standup meetings, and the like.
- 13 GAO-15-290. High Risk Series: An Update. *See the section on Improving the Management of Information Technology Acquisitions and Operations.*
- 14 <https://www.wrike.com/project-management-guide/faq/what-is-waterfall-project-management/>
- 15 Planning for Success: Agile Software Development in Federal Agencies. American Council for Technology and Industry Advisory Council, 2013; Software Development: Effective Practices and Federal Challenges in Applying Agile Methods, Government Accountability Office (2012)
- 16 John Dowdy, Kirk Rieckhoff, and J.R. Maxwell, How the public sector can remain agile beyond times of crisis. May 25, 2017. <https://mckinsey.com/industries/public-sector/our-insights/how-the-public-sector-can-remain-agile-beyond-times-of-crisis> 2/14
- 17 Jan Shelly Brown, Khushpreet Kaur, and Naufal Khan, Implementing Agile Ways of working in IT to Improve Citizen Experience March 13, 2020. <https://www.McKinsey.com/industries/public-and-social-sector.our-insights/implementing-agile-ways-of-working-in-it-to-improve-citizen-experience>
- 18 <https://www.performance.gov/CAP/CX>. Improving Customer Experience with Federal Services. See the Goal Statement, Challenge, and Worksheets, which includes information on supporting documentation, a schedule of desired outcomes and operations by 2030, and other implementing frameworks.
- 19 The purpose of this unit is to provide concrete assistance to agencies to take agile to the next level: that is, to ensure that agile is not just used for IT projects, but applied to broader organizational management issues so that this becomes a new way of leading and managing in the federal government. The GSA unit and the U.S. Digital Service would need to coordinate to (1) allow GSA to learn from USDS's experiences on agile in technology and design and (2) no unnecessary overlap and duplication in their missions, roles, responsibilities, and activities.

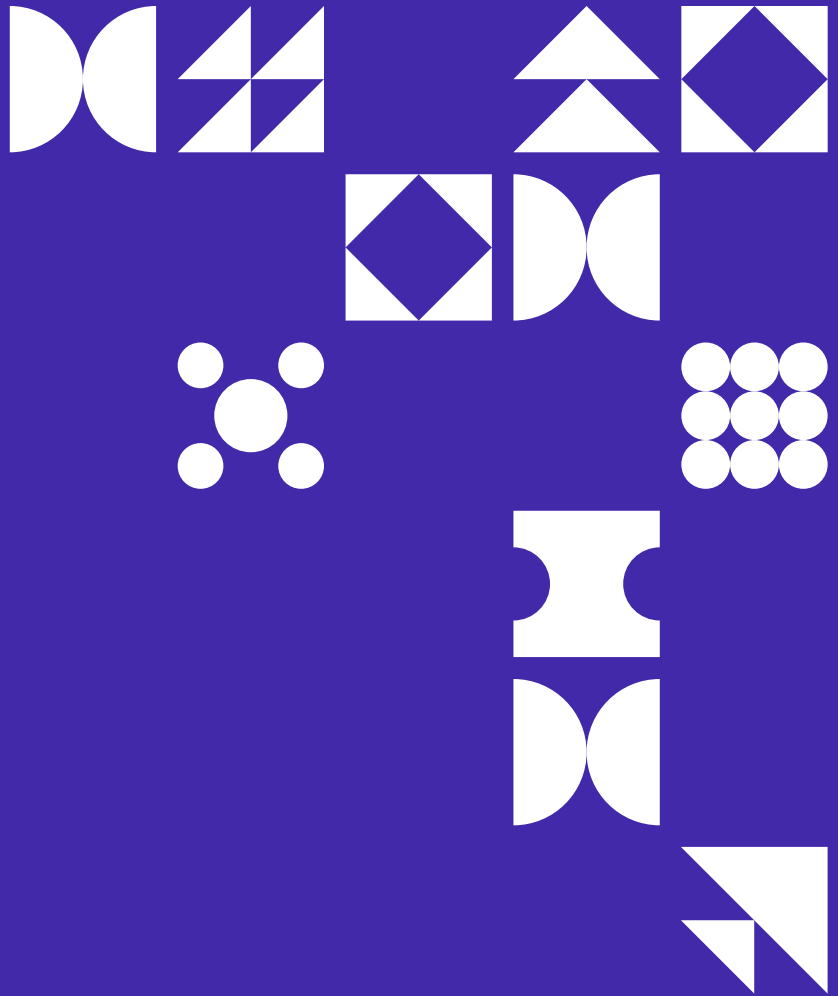
20 Beginners have not been exposed to the “right way” of doing work.

21 Novices have been told what to do but they can only do it well with guidance.

22 Competent people know enough to work without guidance.

23 Proficient people can coach others.

24 Experts see the relationships between the pieces and can easily extend what they know.



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