Adapting Agile for Government IT Development

Sapient Delivers a Scalable and Repeatable Process

By Raj Shah, Vice President, Sapient Government Services

At a time when federal funds are extremely limited, the expectations for fast and responsive program execution have never been greater. Delivering more value to taxpayers is the prime requisite for all federal programs. The call to action is “Do More with Less.”

A New Directive

In the current economic and political environment, the overarching goal is to maximize the return on taxpayers’ dollars and help agencies fulfill their mission.

Until recently, multi-year development projects for major government IT investments were the norm. These multi-year projects relied heavily on traditional development lifecycle models and were unable to adapt to changing customer and mission needs. As a result, the required functionality was often outdated or poorly aligned and millions of dollars were wasted.1

Since the 25 Point Implementation Plan to Reform Federal IT Management was released several initiatives (such as TechStat and PortfolioStat) have been launched to increase accountability and transparency for IT spending; specifically, to improve efficiency, cut waste, and maximize return on investment.

Under the 25 Point Plan, only federal IT programs that use a modular development approach will receive funding in the future. For large-scale IT programs, this means adopting a new modular development methodology (such as Agile) and delivering working software within six-twelve months—on-time and on budget.2

This is a major shift from the traditional program management approach used in government agencies.

To deliver expected program functionality sooner and more efficiently requires a development approach that is more responsive than traditional methodologies; one that is adaptable to federal governance requirements and minimizes program risk.

That’s a tall order.

Due in part to its success in the private sector, and its focus on short, iterative, and highly flexible development cycles, federal IT managers have become more interested in Agile as an alternative to traditional development methodologies.

Despite the groundswell of interest in Agile, however, significant challenges have surfaced with early government adoption. Agile appears to offer a compelling solution for federal IT program managers, but in view of the challenges encountered to date, there is widespread uncertainty about whether Agile is, in fact, well-suited for government programs.

What is Agile?
Agile development methodologies were created in the private sector 20 years ago to provide faster delivery of working software.

When implemented well, Agile development offers many benefits over traditional software methodologies: improved predictability, reduced cost, reduced risk, flexibility to respond to changing business needs, better communication with stakeholders, and faster delivery of working software.

Agile is:
- A modular, iterative approach to software development that emphasizes rapid delivery of core system functionality
- An approach that requires engaged stakeholders and frequent communication to improve responsiveness and mitigate program risk
- An umbrella term referring to several distinct agile methods, including: Crystal, Scrum, Extreme Programming (XP), RUP, Dynamic Systems Development Method (DSDM), Lean, and others (each with unique benefits and limitations)

How Can Agile Work in Government?
Agile is focused on business outcomes. For government this means ensuring mission success—providing the services and information citizens need when they need it, and maximizing return on federal investments.

Agile represents a different approach to software development—and a series of challenges for government IT programs. In government, the Agile process is a new way of working collaboratively—developers, user advocates, and technology and business customers together.

For most government organizations, this is an entirely new way to manage programs and represents a huge shift in agency culture.

In addition, the long-standing governance process required for federal programs is based on traditional methodologies such as Waterfall—not on Agile. Commonly used compliance processes, including EPLC, ITLM, SDLC, SELC, and SLM are linear, documentation-heavy, and not adaptable to fast-paced changes in technology or changing customer needs. These legacy processes are:

- Based on sequential—and thorough—completion of distinct “phases” of project work
- When one phase of a traditional development project (e.g., Waterfall) is validated as complete, the next phase may begin

In contrast, Agile development delivers key elements of system functionality in overlapping, iterative cycles.

In light of the cultural shift Agile represents—the need to provide developers frequent access to customers and navigate away from the linear governance process—how can large, complex government development projects be successful using Agile?
Sapient Offers A Hybrid Approach that Blends the Best Aspects of Several Agile Methodologies into One and Addresses Government Compliance Challenges

Based on extensive experience, Sapient has developed a consistent, repeatable process that combines elements of “pure” Agile, such as XP, Lean Development, and Scrum with longstanding engineering and development methodologies and best practices identified in:

- Capability Maturity Model Integration (CMMI)
- Dynamic Systems Development Method (DSDM)
- Project Management Body of Knowledge (PMBOK®) and
- Information Technology Infrastructure Library (ITIL®)

Our hybrid approach maintains the core principles of Agile, but adds discipline. The result is a process that minimizes risk and increases program control and transparency. Sapient’s approach is disciplined, repeatable and scalable.

In addition, our approach:

- Adapts to changing business requirements
- Can be easily tailored to fit a variety of government projects

Our method adapts the underlying concepts of Agile to successfully address the unique challenges of government IT development projects. Under our approach:

- Customers and developers work together to identify and validate the right requirements
- Project scope is decomposed
- Parallel activities occur: testing of one iteration occurs as development of the next iteration begins
- Risk is addressed up-front

Sapient’s methodology is not only flexible and responsive (Agile), but consistent, efficient, and repeatable — a concept that has been validated by our achievement of CMMI Maturity Level Two.

Built on years of industry best practice, our approach emphasizes high levels of transparency and stakeholder involvement.

Sapient offers government agencies:

- Validation of the right requirements by customers, users, and developers
- Reduced waste
- Accelerated client value
- Proven delivery and client satisfaction

“*We bring discipline and repeatability to a process that is focused on one goal alone, which is to deliver product as fast as possible to the customer.*

*In an environment in which you have to be compliant, we believe a combination of Agile methodologies works best and is one of our top lessons learned.*”

– Teresa Bozelli, President, Sapient Government Services
Our Hybrid Approach Addresses the Unique Challenges of Government IT Development Projects
Sapient’s methodology successfully addresses the perceived obstacles to using Agile in the government space.

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<th>PERCEIVED ROADBLOCKS TO USING AGILE IN GOVERNMENT</th>
<th>SAPIENT’S HYBRID APPROACH SOLUTION</th>
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<tbody>
<tr>
<td>• REQUIREMENTS and design are only “done” at the end of the project</td>
<td>• High-level project scope and success metrics are captured at the beginning of the project, and used as a framework for future iterations</td>
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<td>• CONSTANT FEEDBACK is not available at the depth and frequency needed</td>
<td>• Longer iterations are used to address decision capture/documentation needs, and to ensure communication across all development tracks</td>
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<td>• DOCUMENTATION from pure agile projects do not meet the government’s definition of completeness</td>
<td>• Establish regular status checkpoints including daily/weekly reviews - that incorporate Agile-derived status reporting [granular burn rates, risks/issues, etc.], mapped against the overall program delivery plan</td>
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<td>• Inability to tie agile development to EVM or other project measurement techniques</td>
<td>• Required documentation is built using the Agile “story-based” approach. To produce documentation— or to develop other nondevelopment deliverables (such as a wireframe) make it the output of a “story”</td>
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<td>• PROJECT TEAMS CANNOT SCALE past an upper size of about 10 people</td>
<td>• Gate reviews are focused on effective mitigation of program risk rather than “completeness checkpoints”</td>
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<td>• CONTRACTING a “pure” Agile project is difficult</td>
<td>• “Story points” are used to measure progress in an iteration. Schedule and budget performance metrics are derived from Agile story/iteration metrics.</td>
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If you are interested in knowing how Sapient can help you incorporate Agile in your government development projects, please contact us at: agile@sapient.com.

**Raj Shah**  As a Vice President at Sapient Government Services, Raj brings to Sapient 16+ years of experience providing holistic insight and deep technological expertise. Working with both commercial and government clients, he has a background in technology planning, strategy, and software architecture design and development. Raj has been instrumental in Sapient’s growing account with the Department of Homeland Security, including work with US Customs and Border Protection and the US Immigration and the Customs Enforcement agencies. His focus includes expanding our presence with the Department of Homeland Security, the Department of Transportation, the Department of Energy and the intelligence community. He holds a BS in Mechanical Engineering from the Massachusetts Institute of Technology.

**ABOUT SAPIENT GOVERNMENT SERVICES & CAPABILITIES**
Sapient Government Services, a division of Sapient, is a leading provider of consulting, technology, and marketing services to a wide array of U.S. governmental agencies. Focused on driving long-term change and transforming the citizen experience, we use technology to help agencies become more accessible and transparent. With a track record of delivering mission-critical solutions and the ability to leverage commercial best practices, we serve as trusted advisors to government agencies such as the Federal Bureau of Investigation, Library of Congress, National Institutes of Health, United States Department of Health and Human Services, and United States Department of Homeland Security.