

**May 2016**

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# Executive Summary

To transform how the government builds and buys digital services, OFPP and USDS issued a challenge to industry to create and pilot a training and development program that transforms how Federal Contracting Professionals procure digital services. The challenge sought to achieve three primary outcomes:

* Become digital service procurement experts;
* Are equipped with the knowledge necessary to be imbedded within agency Digital Service teams to serve as a business advisor to the team, its customers, and its stakeholders; and
* Have the knowledge to lead agency training, workshops, and consultations in order to expand digital service procurement expertise within their agency and the government.

To achieve these outcomes, ICF and ASI Government teamed up to create the Digital Acquisition Pilot (DAP). The solution we created addressed three primary challenges in order to achieve the outcomes:

* **How do we design a program on topics that are *constantly evolving*?** The digital product and services marketplace is rapidly evolving. The program must be relevant today and over time.
* **How do we address participants’ *unique learning needs*?** Federal contracting professionals have varying on-the-job needs and levels of experience and performance with digital services acquisition. The program must take into account varying needs at the individual and cohort level.
* **How do shift *individual and cultural mindsets*?** This workforce has been trained to follow a certain set of rules and processes that support acquisition; their organizations expect them to act this way. As digital technology evolves, acquisition practices must evolve to support their design and delivery. The program must transform employees’ mindset to embrace change, innovation, creative compliance, and productive partnership with program offices and stakeholders.

Given the challenge outcomes and the three challenges described above, we designed a program using an agile learning design, in which we 1) **build** instruction in segments (two two-week iterations which comprise one-month releases), **measure** it using regular assessments, and **learn** in an iterative fashion, and 2) fix some performance objectives/instruction (60%) while allowing the remainder of the instruction (40%) to flex to address individual and cohort learning needs. We used the data gathered from participants and the program faculty (i.e., our team and USDS) over the six-month program to document our findings and recommendations for the next program iteration—what we call the “minimum viable product” or MVP.

## Summary Recommendations and Supporting Findings

The data suggests three broad categories to be addressed (listed below). This report is structured to present our findings first (Section 3: Our Findings) followed by our recommendations (Section 4: Our Recommendations). This executive summary presents some of our key recommendations included in the report, many of which address multiple findings.

**Category 1: Program Design and Instructional Strategies.** Recommendations in this category include:

* **Evolving the program over time.** We recommend continuing to use an agile approach for to support program revisions.
* **Refining our assessment approach and process.** Specific recommendations in this area include refining the pre-assessment and IDP to target an ongoing individual and cohort development focus throughout the program and embedding the release assessments within the content of releases.
* **Adjusting the program outcomes.** We recommend revising the program outcomes to focus on knowledge, learning, and application over the six months of structured sessions and activities as true expertise develops over a longer timeframe. In addition, we recommend restructuring the guided learning Office Hours and Iteration Retrospectives to align with program needs.
* **Ensuring messaging around outcomes is clear and consistent.** We recommend setting clear program expectations during Orientation and Iteration Planning Meetings and providing a clear purpose and rationale for how each session and activity fits into the structure of the program.
* **Building in more application-focused activities, such as case study responses, shadowing, live digital assignments, and other activities.** Specific recommendations in this area include providing threaded examples/scenarios that allow participants to analyze and apply their learning in each phase of the acquisition lifecycle, recrafting the live digital assignment to focus on solving digital service challenges, employing “acqu-a-thons” to provide participants with consultative experience, and requiring participants to identify and participate in digital services shadowing.
* **Embedding leading change content and change ambassador themes related to building participants’ personal brand and network throughout program.** Specific recommendations in this area include systematic selection of guest speakers and providing more structure and emphasis on building participants’ personal brand, network, and knowledge of available resources.

**Category 2: Learner Support Mechanisms.** Recommendations in this category include:

* Continuing to use two-pronged Capstone approach, but ensure participants are made aware of it during Orientation.
* Keeping participants’ managers aware of the program, but not involving them extensively.
* Structuring the mentor experience such that mentors provide advice on participants’ learning and development and offer a network of relationships to call for just-in-time development and advice regarding real-world situations.
* Continuing to use badging to incentivize participation by adding features that create a more competitive experience for cohort participants.
* Structuring discussion boards to have fewer topics/threads and encouraging participants to respond to each other.

**Category 3: Program Administration.** Recommendations in this category include having two primary facilitators during the program and developing integrated and automated portal analytics to track results.

Our findings in each category support the above recommendations. In addition, we describe the actual cost breakdown and how we ensure quality and value was delivered over the course of the program (Section 5: Cost/Value). We also provide appendices that outline specific adjustments within the context of each program release (Appendix A), a summary of the pilot assessment approach and results (Appendix B), and an assessment protocol for the post-program impact assessment (Appendix C).

## Conclusion

Our findings support that the OMB Challenge resulted in the strong foundation of a learning and development program that tackles some of the biggest challenges to digital services procurement – the rapid pace of technological change in the industry and the need for digital acquisition professionals who participate meaningfully in the procurement process. The recommendations in this report offer opportunities to further target the program and its learning support mechanisms into an even more impactful experience.

# Overview of the Digital Acquisition Pilot

**Background:** The digital service industry is rapidly evolving with innovative products and solutions entering the market that disrupt how the industry is structured and does business, who the key players are, and what the methods and approaches look like that support delivery. The rapid evolution of supply can in part be attributed to a shift in citizen demand. Today’s citizens expect speed in product delivery and closer interaction with companies and the government in a way never seen before. When a digital service breakdown occurs, such as with healthcare.gov, taxpayers are left wondering how and why their expectations have not been met given the maturity, advancement, and problem solving capabilities of the digital service industry and the talent of its practitioners.

In August 2014, the US Digital Service (USDS) was launched to bring in the country’s brightest digital talent to transform how government works for American citizens and businesses by improving the way government builds and buys digital services. As part of an initiative to build digital services acquisition expertise, the Office of Federal Procurement Policy (OFPP) and USDS collaborated to improve the process of digital service acquisition, including refinement and simplification of the digital interactions that citizens and businesses have with the Government. Strengthening digital services expertise in the Government is a key component of being able to reduce the risk of failed acquisitions and systems and save taxpayer dollars.

Federal Contracting Professionals are fundamental to the success of digital service acquisitions. Yet, the transformation of the habits and practices of any workforce, in this case Federal Contracting Professionals, is challenging. In addition to understanding the products and services purchased in a rapidly evolving digital service market, the primary challenges are:

* Accountability for change. Contracting Officers are warranted and their signature is on every contract, which may make them reluctant to attempt creative and innovative practices to effectively procure digital services. They need to develop critical thinking skills and apply creativity to use FAR flexibilities to their advantage.
* Resistance to change. An acquisition workforce that is willing to innovate and think creatively may experience resistance within their organizations. They need to be equipped with the knowledge and skills to act as trusted business advisors and catalysts for change within their organization and the government.

**The Challenge:** OFPP and USDS recognized that to address Federal Contracting Professionals’ primary challenges, they would need a new solution that did not currently exist in the acquisition training marketplace. A challenge via challenge.gov allowed ICF and ASI (our team) the opportunity to innovate at low risk as our investment into the Phase I submission was small. This strategy provided the government with a diverse set of vendors’ most innovative responses. It also provided the government with access to non-traditional vendors who might normally be intimidated by seemingly complex and prescriptive government requirements.

OMB structured the challenge in three phases:

* Phase I. Phase I required submission of a white paper describing each vendor’s training solution. Structuring Phase I in this way was beneficial for the reasons described in the previous paragraph – it encouraged participation by both traditional and non-traditional vendors and limited the financial investment of vendors who were not selected, which encouraged creative risk taking.
* Phase II. Phase II required: 1) a written submission outlining further curriculum detail; 2) an oral presentation describing the vendor’s solution; and 3) a mock classroom session to provide evaluators with a sense of the participant experience in the program. Phase II was highly effective as a result of the interim activities that took place between Phase I notification and Phase II submission. In preparation for Phase II submission, OFPP and USDS provided our team with targeted feedback on our Phase I submission including what evaluators wanted to see more of or have explained in more detail. In addition, OFPP and USDS offered us the opportunity to meet with and ask questions of government points of contact.
* Phase III. Implementation of a pilot with 30 participants. Our pilot experience is described in the “Program Design” section of this document.

Without this innovative, three phased approach, our team would not have been able to design or present the solution that ultimately became the Digital Acquisition Pilot. The reason for this is two-fold. First, because the Challenge focused on programmatic outcomes versus prescribing a set of tasks to be completed to reach the programmatic outcomes, our team was able to design a program that we felt was most likely to achieve the intent of the challenge, instead of offering a technical approach that included all required tasks. In addition, the way in which OMB defined the evaluation criteria allowed us to stay focused on achieving the final outcomes of the program and less on traditional evaluation items such as resumes, past performance, and price.

Second, the level of interaction between OMB and our team after Phase I notification but before Phase II submission was critical in being able to refine our Phase I concept to a targeted Phase II solution. The ability to ask direct questions about the need, program goals, final products, and the intent of the program allowed us to design to a level of detail that is not possible in a traditional proposal. In addition, the decision to have us provide both an oral presentation and a classroom demonstration pushed us to design a more complete program than we normally would at this stage of the design process. This benefitted the government as they were able to evaluate between fully developed program concepts and allowed us to deliver working product – the pre-assessment, IDP, Orientation session, and technology platform within approximately one month of award.

On a separate note, the mock classroom session helped the government to understand the solution as well as experience it from the participant perspective. We thought the mock classroom was an effective strategy, but given our recommendation of a blended learning program, it might be helpful to have this session be a combination of demonstration and classroom session.

**ICF/ASI Agile Learning Design:** Our program was built on the lean model of build, measure, learn where we create content in one-month releases (build), assess participant knowledge at the end of each release (measure), and adjust the content/focus areas for the next release (learn). This approach recognizes the evolving nature of participant on-job needs and varying levels of participant experience and performance with the concepts taught. We fixed approximately 60% of the program’s performance objectives, while allowing 40% of the performance objectives and content to be responsive to an individual learner’s needs, the cohort’s needs, or external adjustments, such as an acquisition policy update or a new digital service solution. This allows the program to be flexible and sustainable over the course of the program as the nature of the challenges learners are facing and the concepts they find difficult evolve. For example, in knowledge assessment results, we noticed that the overall percentage of correct answers had dropped. We followed up on this finding with participants in the Release 4 classroom session and learned that they still found concepts related to the acquisition strategy and evaluation criteria challenging. As a result, we built a webinar on writing effective evaluation criteria, a scenario-based activity, and an individual case response that was submitted for feedback from subject matter experts during Release 5. In a traditional waterfall approach to learning program creation, in-program changes would not be possible as all design is fixed during curriculum design. However, an agile learning design enabled us to dedicate more time to where participants needed the most support.

In retrospect, we believe a key element of this program’s success was the close partnership between the USDS team and our team. By blending our teams together and working side by side in all aspects of the program design and execution, we were able to design a far superior program than if we had taken a more traditional submission of deliverable and client review approach (waterfall).

**Rationale for Continued Delivery Using an Agile Learning Approach:** Continuous improvement of content in an agile learning program requires that we examine which content should make up the 60% of fixed performance objectives and 40% of responsive performance objectives at the end of each delivery of an agile learning program. The team should assess the 40% of responsive performance objectives and content in order to:

* Determine whether it was a need of a specific individual or group of individuals within the cohort or a more universal need that is likely to arise in subsequent deliveries of the program (in which case it should become a part of the fixed content).
* Ensure its proper placement in the sequence of learning throughout the program. For example, the majority of evaluation criteria content we created in the pilot is currently placed in Release 5: Administering Digital Services Contracts, even though it would be more appropriately placed in Release 3: How Do You Buy where we focus on creation of the acquisition strategy.

Content that we determine makes up the 40% of responsive content can be added to a library of options that may reduce variability in content needed for subsequent deliveries of the program – provided that it does not become obsolete due to the rapid pace of change in the digital service industry.

In addition, one of the hallmarks of an agile learning program is its ability to address subject matter characterized by rapid evolution of policies, processes, practices, or technology. This is likely to impact Release 1: Digital Services in the 21st Century, a deep dive into digital services terms and concepts like agile, DevOps, cloud, open source, and x-as-a-service the most. In addition, as policy, regulations, and practices in the digital service acquisition field update to align with the products and services that need to be procured and as new tools are released by USDS, the General Service Administration (GSA), Acquisition Innovation Labs, and other teams, other components of the program may require updating, like what constitutes an innovative contracting method.

Finally, throughout the course of the pilot delivery, participants provided qualitative feedback on the usefulness of the content and 70-90% indicated that they feel confident “describing” topics across releases in the program. However, while participant confidence in the “act” area was still strong, it was lower across the topics (an average of 64% felt they could apply/take action across the various topic areas), likely because participants needed more practice applying the knowledge they acquired. In addition, 10 out of 34 comments (29%) about program content across releases involved a request for more “hands on” activities and case studies. Moving forward, there is an opportunity for us to develop more hands-on activities. These practice and application activities will also need to be refreshed in subsequent deliveries of the program.

# Program Design

**Background:** Our team proposed a six-month Digital Acquisition Pilot program design in our Phase II submission composed of six releases that mirror the acquisition lifecycle.



Exhibit 1. An overview of the Digital Acquisition Pilot

The program included:

* Self-directed learning opportunities accessed via the open source edX platform.
* Interactive webinars for learners to ask questions of the facilitation team and share key learnings.
* A three-day orientation and three collaborative classroom sessions throughout the program focused on hearing from guest speakers and practicing key concepts.
* A team-based live digital assignment group project on an actual government procurement.
* Opportunities to meet with an assigned USDS mentor.
* Opportunities and events external to the program identified on an ad hoc basis (e.g., UK Digital Service visit to Washington, DC; ACT-IAC panel).

During the program, we created 48 self-directed learning activities, including release scenario staging, online learning modules, readings and discussion board activities, blog assignments, and other application-oriented activities (e.g., live digital assignment activities, stakeholder analyses, written products that participants submitted for feedback). To do so, we leveraged a combination of resources already developed by ICF, ASI, FAI, USDS, and others and design and development of new content based on our expertise. In addition, we created a scenario-based pre-assessment with 46 test items, five release assessments that each had 28 to 54 Level 1 and 2 test items, and a capstone skills assessment comprised of 28 scenario-based test items. Finally, we developed and delivered 10.5 days of classroom training and 30+ webinars, representing 25+ hours of webinar time.

While the learning program’s overall design was established upfront, we evolved the curriculum over the six-month execution period as part of our agile learning program. As a result, findings refer to both the upfront design as well as the evolution of our curriculum.

The following two sections are organized around our **findings** (Section 3) and our **recommendations** (Section 4). Within each section, we include findings/recommendations in the following three categories: 1) program design and instructional strategies, 2) learner support mechanisms (including mentors, portal, etc.), and 3) program administration.

# Our Findings

## Category 1 Findings: Program Design and Instructional Strategies

### Finding 1.1: Agile learning design was successful

Our team’s agile learning approach is grounded in a build, measure, learn rhythm across the six releases. Our team built content in one-month releases (build), assessed participant knowledge at the end of each release (measure), and then adjusted the content/focus areas of the next release (learn).

The agile learning approach enabled our team to respond to the evolving nature of participant on-the-job needs and varying levels of participant experience with and performance of the concepts taught. Unlike a traditional waterfall approach to learning program creation where design is fixed at the beginning of the program, an agile approach enabled us to make in-program changes based on release assessment results and participant feedback. At the end of each release, our team examined assessment data and developed targeted questions to gather additional feedback from the cohort in live sessions – either webinars or classroom sessions. The following examples show two ways assessment data supported ongoing decision-making:

* **Content Modifications:** In the Release 2 and 3 assessment’s qualitative feedback, participants indicated that they wanted more “hands on sample demonstrations” and “more samples of different SOOs/RFPs/contracts/pricing set ups.” In addition, participants responded that the information in Releases 2 and 3 is applicable to their work to a moderate extent. Release 2 also had the lowest average Level 2 score (63%) compared to other releases. As a result of these findings, we asked participants where they would like to target their “hands on” learning, and they shared that they wanted more content and practice opportunities on how to establish digital evaluation strategies composed of meaningful evaluation criteria, as they did not feel comfortable with how to put this into practice on the job. Based on this feedback/learning, our team developed a webinar focused on key evaluation concepts, provided additional readings and resources, and created a Release 5 application activity based on a sample case and provided participants with individualized feedback about it. As a result of the session and assignment, two participants stated that they used the feedback they received to support them in FY 17 solicitations they are currently drafting.
* **Structural Modifications:** By tracking session and activity participation across releases, we noted a downward trend in participation in Release 4. Across the 11 core activities for this release, an average of 56% of participants performed core activities, and 65% of participants reported they did not have enough time to complete coursework and assignments (lower than the 64% of participants who performed core activities across all releases and 54% of participants who performed elective activities). An informal check-in with participants validated that they were feeling overwhelmed and falling behind. They also wanted more content on two topics: x-as-a-service and open source. As a result, we added a review week between Releases 4 and 5 where we provided participants with their lowest scoring performance objectives on Releases 1-3, so they could target their time appropriately and offered learning-focused webinars on topics where learners wanted more content (e.g., open source). In Release 5, participants scored the highest of any assessment, with an average score of 75%. This may be attributed to either participants’ receipt of the performance objectives they performed most poorly on so that they could then target development or the review week that provided them with time to catch up on activities that they wanted to address so they were fresh to begin Release 5 sessions and activities.

### Finding 1.2: Overall structure of the program established a predictable rhythm for participants with clear expectations and pace for learning

One of the greatest challenges in running a cohort-based, learning path program is in communication during it, including participants knowing what they need to achieve, when they need to do it, and where to find/access information about the sessions and activities. Our solution to this challenge was to establish a consistent rhythm and cadence within each release, with releases being segmented into two, two-week iterations. Each iteration included the following elements:

* Core and elective **self-directed learning activities** that participants could access in the edX portal.
* **Three guided learning webinars** including a short stand-up meeting and follow-up email on the first Monday of the iteration to orient participants to their assignments over the next two weeks, an optional Office Hours session on the first Thursday to provide participants the opportunity to ask questions and explore the content’s relevance to their work, and a Retrospective on the second Thursday to discuss what participants learned in the iteration and their intent to apply it on the job.
* **Progress on the live digital assignment.** Participants received specific details on what to prepare for the live digital assignment during each iteration and presented out to the full group on their progress in what we termed “Demo Days.” The facilitator would then provide feedback to each group to assist with their assignment’s progress and offer them consulting strategies for working with the agency.

This recurring rhythm set clear expectations with participants so they knew their assignments and what they needed to do next within each two-week iteration as well as the level of effort needed (the pace) for each iteration. We tested this hypothesis in two ways:

* **Expectation setting:** We used feedback on the technology portal’s organization as a proxy for expectation setting clarity as participants completed sessions and activities based on what was included in the left navigation of the Courseware section. Our results showed that as participants progressed through the releases, they had fewer comments on the portal’s organization and which sessions and activities they should be completing. Participants offered a total of 21 comments in response to an open-ended question on potential improvements to the technology experience on Releases 1 and 2. Of that total, eight comments (38.1%) were on the technology portal’s organization with comments like, “The portal is getting easier to use but it took two months to get to this point. Having the old releases next to the new ones can be confusing.” By Release 5, participants only had six comments in response to the open-ended question on potential improvements to the technology experience, none of which were related to the technology portal’s organization. Given the nature of the feedback, this suggests that participants became more comfortable with the portal’s organization, and therefore, the corresponding sessions and activities they needed to complete as they progressed through the program.
* **Program pace:** Throughout the program, participants indicated that they did not feel they had time to complete all of the assigned sessions and activities (see Finding 1.12 - Actual participant time commitment did not align with program expectations; additional effort must be made to “right size” this commitment and ensure organizational support). However, release assessment data also indicates that more participants felt they had enough time to complete the assigned sessions and activities in Releases 4 and 5 (35% and 55% respectively) than earlier releases – see Exhibit 2. In addition, fewer participants indicated that they felt overloaded by the time commitment in Releases 4 and 5, as shown in Exhibit 3 by the reduction in “Agree” responses to the question “Overall, I feel overloaded by the time commitment this release required.” We can infer that one possibility is that participants grew more comfortable with the assignments/activities and were able to pace their participation alongside work responsibilities as the program progressed. Please note that our team also adapted the program to provide fewer core assignments in Releases 4 and 5 and increased the estimated time for completion of each session and activity based on participant feedback we received.

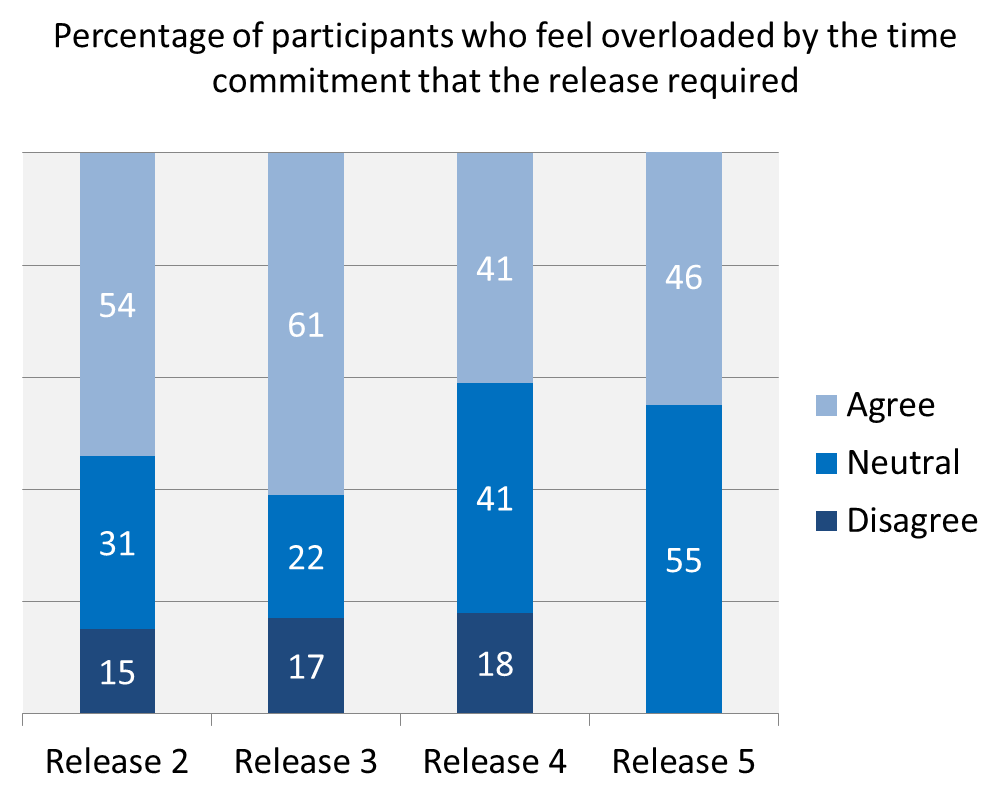
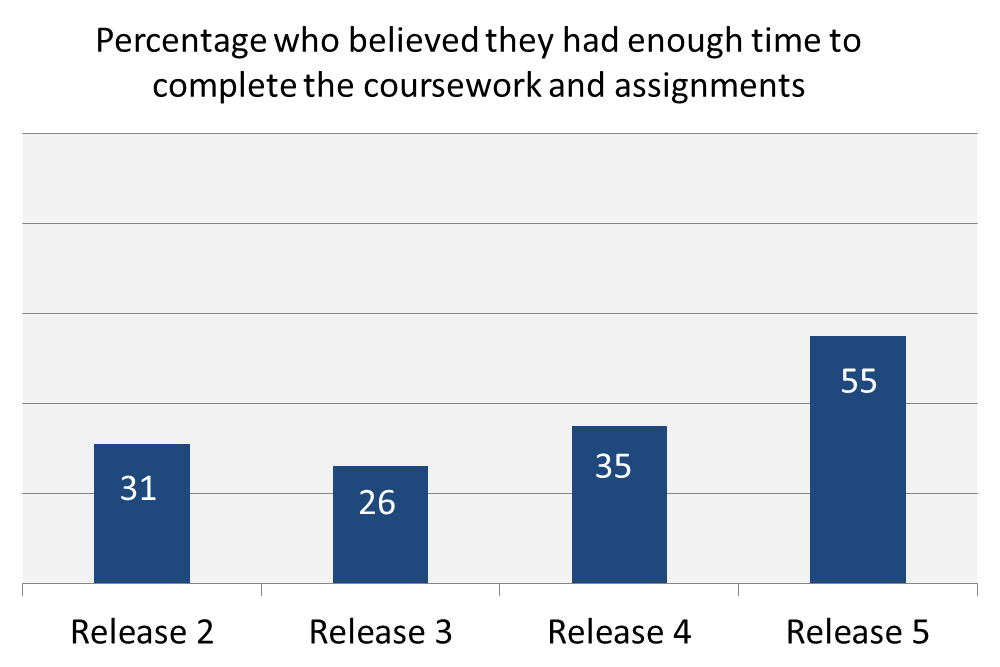


Exhibit 3. This chart depicts the percentage of participants who feel overloaded by the time commitment that the release required. *Note that this question was not asked on Release 1.*

Exhibit 2. This chart depicts the percentage of participants who believed they had enough time to complete the coursework and assignments. *Note that this question was not asked on Release 1.*



### Finding 1.3: Partially achieved the primary outcomes of the program, as per the Challenge

As set forth in the Challenge, the program was designed to achieve the following outcomes:

* Become certified digital services acquisition experts.
* Are equipped with the knowledge necessary to be imbedded within agency Digital Service teams to serve as a business advisor to the team, its customers, and its stakeholders.
* Have the knowledge to lead agency training, workshops, and consultations in order to expand digital service procurement expertise within their agency and the government.

Based on the results of the topical self-assessment survey that was administered at the end of the program to determine participants’ awareness, confidence to describe, confidence to act, and confidence to teach the topics addressed in the program, we found that, on average, 88% of participants indicated they could *describe* the four main topic areas covered in the program: agile, digital acquisition, digital services, and leading/influencing change. However, participant confidence in their ability to apply (i.e., *act*) and *teach* these topics showed a decline, with an average of 64% who felt they could apply/take action across the various topic areas and 30%, on average across the topic areas, who felt they could teach the topic areas. (See Appendix B for a discussion of the assessment approach including the self-assessment survey.) It is also worth noting that participants may have had concerns about the term “teach” and what was meant by it (i.e., did we mean “teach” in the way our facilitators do in a traditional training program versus teaching/assisting others in smaller, more informal settings?). As discussed in the Recommendation 1.4, clarity of messaging, particularly when communicating across so many technical disciplines, is extremely important and should be emphasized to a greater degree in the MVP.

The scenario-based capstone skills assessment that participants completed at the conclusion of the program showed that participants had largely mastered the performance objectives (the average score on the capstone skills assessment was 80%). The capstone skills assessment measured the knowledge and skills gained through the program and aligned with the performance objectives for each release. While this is a positive result, some of the performance objectives may have been written at a lower level of learning than the actual desired outcome. As a result, the capstone likely tapped into participant knowledge more so than higher order skills.

Based on the above, the program achieved outcomes #2 and #3 and partially achieved outcome #1. As discussed in the recommendation section of this report, the intent to create “experts” in six months may have been too ambitious, and we recommend adjusting accordingly relative to what can realistically be accomplished in six months.

**Challenges Encountered and In-Program Mitigation Measures:**

To achieve the desired program outcomes, we identified release terminal performance objectives. Then, within each release, we identified enabling performance objectives that would allow for achievement of the release objectives and, subsequently, the program outcomes. The enabling performance objectives, as identified in our Phase II submission, focused on a lower level of learning than was required to achieve the release terminal performance objectives. In other words, they focused on enabling participants to acquire knowledge and comprehend topics. Given the breadth of the digital services field and the level of knowledge the majority of participants entered the program with (the mean score on the pre-assessment was a 70%), these enabling performance objectives were appropriate; time needed to be spent building foundational knowledge.

* Challenge: However, as a result of the above, the higher level skills required to achieve becoming an “expert” were not built to the extent needed. There was still a need to continue building base knowledge, while balancing the overall participant time commitment to the program (see Finding 1.12 for a discussion of time commitment).
  + Mitigation measures: For Releases 1-3, we developed content and delivered the program in line with the performance objectives and plan set forth in the Challenge Phase II submission, with some minor adjustments to align with participant learning needs. However, in Releases 4 and 5, we retained the release terminal performance objectives, but we adjusted the enabling performance objectives to ensure they aligned with learning needs and drove content/activity development. Although we did not see an improvement in performance on our Release 4 assessment, we did see an improvement for Release 5. Release 5 had the highest participant satisfaction and positive reports of learning experiences (Level 1) ratings as well.
* Challenge: We identified 42 performance objectives in total, meaning we had an average of 7 per release and 3-4 per two-week iteration. As described elsewhere in this report, participants expressed challenges with the workload required. We can infer that one contributing factor to not meeting program outcome #1 may have been the number of performance objectives we expected participants to achieve in each iteration. We shared the release performance objectives and the enabling performance objectives at the outset of each two-week iteration. While participants expressed that this communication was helpful, seeing a list of performance objectives followed by an average of five self-directed activities (in addition to guided learning webinars) may have been overwhelming. In addition, some performance objectives were more overarching in nature, while others were written to align with more discrete knowledge and skills.
  + Mitigation Measure: In Releases 4-5, we refined the enabling performance objectives to ensure they were aligned with the created content/activities and at an appropriate level of learning. To do so, we used release assessment results and gathered data during design workshops with USDS and the ICF/ASI development team.

### Finding 1.4: Participants found value in opportunities to learn how others approach digital services and digital acquisition challenges and desire additional opportunities to observe and apply

The self-directed learning and guided learning included a heavy emphasis on the broad knowledge base that is required to operate successfully in this domain. While we included examples wherever possible, both in the self-directed materials and in the classroom, participants expressed a desire for more “show” (i.e., example solicitation artifacts and cases) and less “tell” (i.e., discussion of how to do something without concrete examples of it in action) in the feedback we received. Specifically, participants expressed a desire to engage with cases/examples across the entire acquisition lifecycle, from pre-award to post-award, along with building or seeing the corresponding acquisition artifacts. As evidenced in the topical self-assessment survey administered at the end of the program, participant confidence in the “act” area was lower across the topics (an average of 64% felt they could apply/take action across the various topic areas), likely because participants needed more practice applying the knowledge they acquired. In addition, 10 out of 34 comments (29%) about program content across releases involved a request for more “hands on” activities and case studies. Example comments include:

* “I'm interested in reviewing actual contract documents that have been used in successful innovative approaches we have discussed and read about.”
* “It [application activities] will help to make the content more real-life example based”
* “My biggest issue so far with this experience is that there has been a lot of 'telling' us how to do modular contracting and other creative ways of doing procurement, but there has been no 'showing' us how this works in daily use. We need templates/user case study on an actual real life procurement/RFP/RFQ.”
* “Have more hands on sample demonstrations for the participants to work on to get "feel" of what needs to be completed for the coursework and in the future after the course.”

The development team originally planned to use the live digital assignments as the opportunity for participants to apply what they were learning (and to keep the program time commitment reasonable on a by-week basis). However, given challenges encountered with the live digital assignment (see Finding 2.5 for additional discussion) and the risks inherent in relying on a project outside the program as the sole opportunity for participants to apply their learning, participants did not receive this opportunity to the extent desired. In addition, we assumed that participants would be in positions where they were able to apply their learning on the job. However, 60% of participants reported, on average across releases, being in a job where they could immediately apply what they had learned, meaning the other 40% were not able to do so. As shown in Exhibit 4, the ability to apply learning content immediately on the job varied by release, with 82% of participants being able to apply Release 4 content immediately and only 36% of participants being able to immediately apply Release 5 content.

Exhibit 4. Percentage of participants who are in a job where they can apply what they learned immediately, as reported in each release assessment

As we saw these trends manifest, the team built other activities to provide supplemental application opportunities, including assignments that participants submitted and received feedback on around writing an SOO and crafting an evaluation strategy and evaluation criteria. (Note that we included other application assignments in the program, such as the stakeholder analysis and organizational change readiness survey, but not all assignments were formally submitted for feedback but were instead discussed during guided learning sessions.) Participants reported they found value in these assignments, and anecdotal feedback indicates participants are using the feedback to support the crafting of current solicitations. Specifically, participants shared the following feedback:

* “…this is very helpful, and your feedback will be put to good use for some major FY16 procurements I’m getting ready to send out.”
* “…[the evaluation assignment] and the SOO assignments were really good, especially with the feedback. [A classmate] and I are working on an RFQ now on the SalesForce BPA, and I used the SME feedback on the SOO assignment as we are trying to put that together. I will do the same with this when we get to the evaluation factors, so in my opinion, I would keep these as part of the program and maybe even implement similar assignments (though I know it’s time consuming on both sides).”

With respect to participants’ desire to apply their skills and see how the concepts learned applied to contracting, Release 4, which focused on interpersonal and behavioral skills that help participants to lead change and exert influence productively when they return to their agencies, had the lowest overall Level 1 satisfaction scores. To try and understand why, we examined the data from Release 3 to Release 4 to look at possible trends. As discussed elsewhere in this report, participants expressed a desire for more examples, artifacts, and practice with technical acquisition-specific skills in the Release 3 assessment; after expressing this in the assessment, they then began Release 4 where the focus was intentionally on the “softer” skills and not on the technical topics for which they were asking. Qualitative comments in the Release 4 assessment suggest that this progression was misaligned with participant expectations. This data suggests that the treatment and/or sequencing of the Release 4 content may need to be handled differently, particularly for this more technically-minded target audience, and the linkage and relevance to participants’ jobs or future digital acquisition roles needs to be made more explicit. In addition, by silo-ing leading change content into one release, we may be sending a tacit message that participants only need to employ these skills in that one component of the program. In reality, leading change knowledge and skills are foundational to the success of the entire effort and culture change that the program supports.

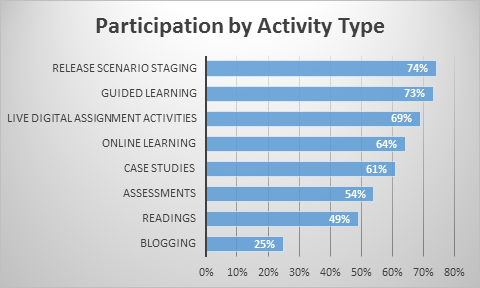
With respect to guest speakers, participants generally found value in hearing from them, including those from the Small Business Administration (including government and vendors working on their systems modernization effort), USDS, and vendors. Interactions with vendors (which we included in the Releases 2 and 6 classroom sessions) were cited as being valuable in understanding the vendor perspective in both the pre- and post-award phases. For Release 2, we invited the SBA team to attend and discuss their experience with their system modernization contract, and participants found this experience valuable. Open-ended comments from the assessment included the following about the SBA team: “Being able to hear the SBA team talk about their experience was amazing.” Near the end of the program, when participants expressed a desire to better understand the contracting officer’s role in agile contract administration, we worked with USDS to identify a vendor team to attend and share lessons learned during the Release 6 classroom session. Again, participants found value in this experience, both in the ability to learn how to administer agile contracts as well as to engage with vendors in an open and transparent manner.

With respect to engaging with vendors and suppliers, participants were encouraged to attend the Salesforce BPA kickoff and to attend post-meeting social events with the vendors during the program, in addition to other opportunities shared by USDS. Specifically, during the Release 6 classroom large group debrief, one participant had the following to say about this experience: “Happy hours with vendors were super helpful – we’re taught out of fear and protest to stiff arm the vendors, but I’m so much more comfortable talking to vendors now; now I see the value of reaching out and touching them and learning from them, rather than giving them the stiff arm.”

### Finding 1.5: Participants favored structured, group activities over self-directed activities

The program used different learning media to balance participant flexibility to learn anytime and anywhere via self-directed learning activities with the need for participants to experience, practice, and try out new behaviors in the classroom and guided learning sessions. Learning media was selected based on the level of learning required by the performance objective, with the higher levels of learning that required practice being the focus of assignments and classroom sessions. This blended approach, while sometimes challenging for participants to motivate themselves to complete individual activities makes it so that participants do not have to attend a three- or four-week classroom course, which will remove them from their daily jobs, require a significant cost investment by the organization, and frequently requires participants to juggle both the classroom with working on their assignments after class late into the evening.

Exhibit 5. Average participation across all releases by activity type based on release assessment data (rather than badging tracking in the portal).



Across releases, participants were most likely to complete the Release Scenario Staging followed by guided learning (73% participation) and live digital assignment activities (69% participation). Guided learning and the live digital assignment are both live experiences that participants engaged in with others in the program. Self-directed activities like online learning, case studies, readings, and blogging showed lower participation percentages (see Exhibit 5)[[1]](#footnote-1). In addition, we had low participation on individual assignments that were submitted to the facilitation team during Releases 3 and 5. For example, one core activity during Release 3 was for participants to write a Statement of Objectives (SOO) based on a case. In this example, 14 of 28 participants submitted their assignment even after three email reminders and individual emails to participants who had not submitted the assignment. Other types of activities requiring more self-initiative also had lower participation percentages. When we examine this finding in conjunction with the finding on participants struggling with the overall program time commitment and assuming that participants prioritize their time according to the sessions and activities they derive the most value from, we can infer that participants favor participation in structured, group activities over individual activities.

Throughout the program, our team also received qualitative feedback on the value of live sessions, particularly the classroom experiences. Qualitative feedback indicated the value and helpfulness of live sessions in that they minimize office distractions, cover material more quickly and thoroughly, and provide subject matter experts for instant feedback. As participants stated, “Classroom sessions with team discussions are the most beneficial” and “It might be worthwhile to do more training sessions like a one day session every month.”

### Finding 1.6: Extensive and clear communication is required on the purpose and rationale of each session, activity, and conversation

On the first Monday of each iteration, our team conducted a virtual iteration planning meeting to discuss the schedule and goals of the iteration and provide an opportunity for participants to ask questions and discuss challenges they are having. These sessions were also recorded and posted to the portal for participants who could not attend and an email was also sent to participants including activities to complete, whether they are core/elective, and the estimated time commitment.

However, even with these mechanisms in place, participants, particularly in the beginning, found it challenging to: 1) find the material on the portal quickly; and 2) understand the purpose, rationale, and how the activity fit into their overall learning in the program. For example, qualitative feedback from participants included comments like, “The portal is getting there, but it is still a little confusing at times. Maybe provide more identifiers on the left hand side” or “site is a bit difficult to navigate.” Qualitative feedback also indicated that some participants did not fully understand the context of the different sessions and activities with comments like, “a synthesized learning experience where the content is self-contained would be easier to absorb” and “provide more course materials on structure on agile. All of the references for 18F and other links are great, but if there is one course book, that would be helpful.”

The reality of the digital service marketplace is that there are many theories, perspectives, and approaches and that participants will need to synthesize what they are learning, reading, and discussing and come to their own conclusions and perspective. However, moving forward, our team can make that clearer for participants so they understand where there is one authoritative resource versus where there is nuance and ensure that participants understand where they should go, what they should be learning, and why it is important on each of the sessions and activities. In cases where there is nuance, we need to be explicit in explaining to participants that by virtue of this being a new and evolving field, there may be no authoritative source on how to approach it and that we expect participants to draw their own conclusions and start to develop their own perspective. Making this messaging more explicit is particularly critical given that this may feel uncomfortable or difficult for many participants who are used to approaching their jobs using a “by the book” mentality (and being trained in that manner as well). For participants to fully internalize the program goals and objectives, they need to understand its rationale, purpose, and contribution within the context of each component piece within the overall program. While we did include this in our sessions, there is an ongoing opportunity for improvement of meaningful, targeted, and consistent feedback in both what we deliver in writing to the cohort and what the facilitation team shares verbally.

Finally, sometimes confusion in messaging from facilitators caused participant confusion. For example, Iteration Retrospectives were an opportunity for participants to reflect on what they had learned over the previous two weeks and discuss their greatest “lightbulb” moment as well as opportunities for application. However, we structured the first Iteration Retrospective as a learning session that summarized the content of the release. This confused participants as it was not a true retrospective. For participants, this likely confused the intended purpose and outcome of the webinar sessions.

### Finding 1.7: Guided learning sessions were well attended and received favorable feedback, but participation decreased towards the end of the program and facilitators found stimulating discussion challenging

According to release assessment data, participation in the guided learning sessions was 73% across 12 sessions – note that this includes Iteration Planning Meetings and Demo Days, which were more widely attended than Office Hours and Iteration Retrospectives, which were the primary forums in where participants asked questions, shared key learnings, and discussed potential opportunities for application. (Only the Release Scenario Staging activity, which was a type of self-directed activity, had more participation.) Qualitative feedback also indicated that participants valued the guided learning sessions. For example, one participant shared, “I really enjoyed the guided learning where we immediately apply what we have learned. I learn best by ‘doing,’ so that type of approach allows me to really absorb the information.” Another participant shared, “I like the virtual meetings using Adobe Connect and the ability to chat and view the slides of the presentation. [It] keeps me engaged versus being on a conference call.”

However, the virtual Office Hours and Iteration Retrospectives, the primary learning synthesis mechanisms, were sometimes challenging from a facilitator perspective for a number of reasons:

* A smaller sub-set of participants were the individuals who spoke up consistently on these sessions. Qualitative feedback supports this as some participants responded that they found it challenging to ask a question, share a challenge, or provide a story when there is a group of 20 or so participants on the line.
* We noticed a decrease in participation in guided learning sessions as we progressed through the program. For example, the Release 5 Office Hours session had two participants and the Iteration Retrospective had about 10 participants. This means that while participants were deriving value from the guided learning sessions, only a sub-set of them were actually using them towards the end of the program as a way to discuss and synthesize their learnings.
* Lastly, our facilitation team found it challenging to stimulate dialogue sometimes. Participants may have been distracted by other in-office commitments, hesitant to speak up, or unsure of how to respond to the questions. This is not abnormal when conducting webinars as the barrier to communication is much higher, but is something for our team to examine in more detail if we continue to conduct webinars.

While the webinars were an overall positive experience for participants, there are opportunities for us to structure them differently in order to maximize participation and engagement.

### Finding 1.8: Remediation was needed for participants to secure mastery of content and create full readiness for application

Release assessment findings indicated participants were having difficulties with select performance objectives across the first several releases, and were requiring additional support on digital service concepts and topics. As a result, we employed remediation to help improve performance. Several examples illustrate how these remediation activities were integral to the program design. For instance, at various junctures during program delivery, we elected to adjust content from elective to core status (driven by participant needs), and we continuously adjusted content to reinforce difficult concepts in an engaging manner to drive participant enthusiasm and focus. In addition, as part of our agile learning approach, we learned that participants were feeling overwhelmed by the amount of work required by the program; therefore, the program staff provided a “break week” before Release 5 to enable participants extra elapsed time to review course content, get caught up on any learning activities they had not yet completed, and to reflect on and integrate what they were learning. Because this approach was implemented as part of our agile learning approach and was learner-driven, it did not disrupt the program or learning but rather enhanced it and demonstrated our responsiveness to participants.

### Finding 1.9: Participants are eager to serve as change ambassadors but additional emphasis should be placed on the brand- and network-building components needed in this role

Participants demonstrated their eagerness to engage with the community and take on their change ambassador roles in the following ways during the program:

* Several participants spoke at the ACT-IAC Acquisition Excellence conference held in March 2016.
* Several participants attended various meetings with other entities across government throughout the program, including participating in USDS team meetings, attending a meeting with the UK digital services team, and attending the Salesforce BPA kickoff meeting.
* During the program debrief in the Release 6 classroom session and via individual email exchanges, participants expressed a desire to be involved with the next program offering and wanted to ensure they would have access to the portal resources moving forward.
* One participant was appointed as his agency’s Acquisition Innovation Advocate as part of OFPP’s March 9, 2016 memo and associated initiatives.

The above provides evidence of the fact that we have started to build a community of digital acquisition change ambassadors with an interest in lifelong learning. Given that digital services will continue to evolve, building digital acquisition professionals who can continue to learn and evolve how they acquire these services is paramount. In addition, while we shared opportunities for participants to build their network and “personal brand,” participation in these events (as reported to us throughout the program) was relatively limited; five participants earned badges for “extracurricular” activities like those documented in the bulleted list above (extracurricular badges were earned for activities that required participants to build their network or otherwise engage in the community). (While other participants may have completed extracurricular activities, they did not report them to us; our system for collecting badging information may have contributed to this. See Recommendation 2.4 for a discussion how the badging approach is being revised as well as how badging is being woven into the assessment more seamlessly.) Possible explanations for what occurred include the following:

* **Limited time.** As discussed elsewhere, participants struggled to make time for all elements of the program, potentially including “extracurricular” activities.
* **Lack of explicit focus on the value proposition of these activities.** While we indirectly discussed why engaging with the larger community was important, we did not explicitly link these activities to the value proposition for participants: building their own personal brand and network, and linking into the resources that will support them once the program concludes and on their journey as lifelong learners.
* **Information sharing around brand-building opportunities.** Our USDS team used the discussion boards in edX to notify the cohort about events that they should consider attending. However, unless participants checked the thread in which these events were announced regularly, they may have missed these announcements. As discussed in the recommendations section, we recommend making these event announcements more easily accessible on the portal, having the program alumni help identify opportunities and “get the word out,” and using social media to share the opportunities.
* **Labeling of these activities as “extracurricular.”** By labeling these activities as “extracurricular,” we may have indirectly sent the message that while important, it was not critical to achieving the program goals. However, participating in some such activities *is* critical to achieving the program goals. The program requirements should reflect this to a greater extent, while balancing the overall participant time commitment.

### Finding 1.10: Identification of learning activities as core vs. elective is useful in theory to help individualize learning but implementation approach requires adjustment

Originally, we identified certain learning activities as core, meaning all participants were required to complete them, and elective, meaning only certain participants were required to complete them as identified in their IDP/pre-assessment results. However, because the pre-assessment was focused on overarching, scenario-based skills versus the component knowledge that was the focus of many of the learning activities, some participants were not directed to take certain, knowledge-focused elective learning activities when, in fact, they were needed. As described elsewhere in this report, by recrafting the performance objectives against which the pre-assessment is written and then directly aligning learning content to them, we will have a better understanding of where the true knowledge and skill gaps are and can provide more targeted instruction to close them. In addition, we underestimated the base level of knowledge that participants would enter the program with and assumed that this knowledge did not need to be tested in the pre-assessment. Based on release assessment results and lower performance on some knowledge-focused items, this assumption was not accurate.

For the purposes of the pilot, when we realized that activities that were deemed elective had content that some participants had not mastered (even though the pre-assessment said they had), we decided to remove the core/elective designation and encouraged participants to complete all learning activities.

See Finding 2.1 for additional discussion of IDPs and how we recommend embedding knowledge-focused items in the pre-assessment to align with the level of learning designated in the performance objectives.

### Finding 1.11: Actual participant time commitment did not align with program expectations; additional effort must be made to “right size” this commitment and ensure organizational support

Participant feedback consistently indicated that the time commitment needed to work through the materials was: 1) not consistent with participant expectations; nor 2) sustainable over the course of six months with participants’ other job requirements. Results from the release assessments indicated that on average participants spent 10-14 hours on each release but that the majority of participants spent less than 10 hours per release on sessions and activities, as shown in Exhibit 6. Our original expectation set during orientation was 5-7 hours of individual work per week for a total of 20-28 hours per release. As a result, participants did not complete all of the sessions and assignments for each release, and there was a negative trend in the number of awarded badges for participation. For example, 19 participants received a participation badge in the first release, 16 in the third release, and 5 in the fifth release.

When asked specifically about the extent to which they were comfortable with the necessary time commitment, the majority of participants said they were not comfortable and they reported feeling overloaded by the requirements. When we introduced the “break week” later in the program, participants remarked not only about how helpful it was for them but that they could have used breaks in an established rhythm, such as a repeating retrospective period either between each release or perhaps between every other release. This data indicates that in order to achieve the performance objectives and program outcomes, then one or a combination of the following should be implemented:

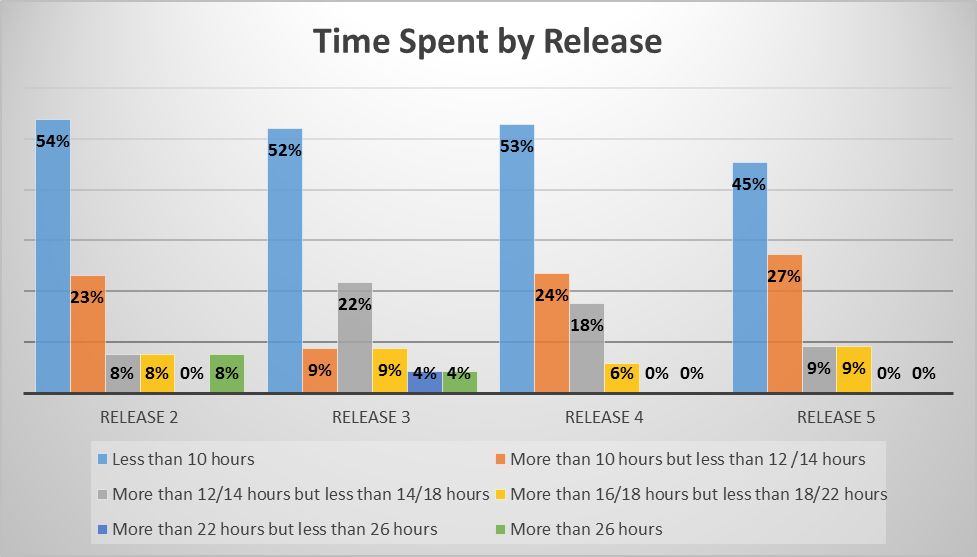


Exhibit 6. Participant time spent on sessions and activities included in each release. *Please note that this question was not asked in Release 1.*

* Lengthen the program in terms of calendar time period.
* Refine the expected commitment by revisiting the current instruction and activities to determine criticality to achieving the performance objectives.
* Adjust the sequencing of the program so that the content that participants found less valuable (e.g., Release 4 Leading Change content) is embedded throughout the program and refined, rather than included as a separate release, which would then allow us to build in “break weeks” without lengthening the overall program.
* Adjust the program outcomes to focus on more realistic and achievable goals for a six-month program.

See Recommendation 1.2 for a discussion of how we will use the IDP to refine the expected commitment, Recommendation 1.6 for how we will reframe the Release 4 content, and Recommendation 1.4 for how we recommend tweaking the program outcomes.

## Category 2 Findings: Learner Support Mechanisms

### Finding 2.1: Lower than expected entry knowledge of the cohort resulted in participants receiving IDPs that recommended completing almost all activities

At the beginning of the Digital Acquisition Pilot, participants engaged in a pre-assessment (situational judgement test) comprised of multiple-choice questions on each of the five content-focused releases of the program. Participants’ responses to the questions were used as inputs to a customized IDP that indicated the core and elective sessions, activities, and conversations that participants should prioritize for development throughout the program. Based on participant pre-assessment results, our team recognized that participants would need to dedicate their time to most of the sessions and activities throughout the program. For approximately two-thirds of the pilot cohort, pre-assessment results recommended that participants engage in between 50 and 60 core activities and approximately 23-25 elective activities. This quantity of activities was higher than expected and intended in our design. In addition, in qualitative comments provided during guided learning sessions, several participants felt that they did not have enough baseline understanding about the content to conceptually “stitch together” the various content elements via readings, self-directed learning, and applied activities. In addition, after the first release, participants indicated that sessions and activities marked “elective” (and thus were not included in their IDP) were helpful reviews and provided important context setting. One example of such an activity was the online learning activity called “The How” that presented the basics of the agile methodology. Participants indicated that there was so much content in many online learning activities (including readings and other activities) that, even if they felt comfortable with the topics, they still found valuable concepts and examples they believed would be useful to help improve their ability to communicate about such concepts. Therefore, during the program, our team flexed to encourage more sessions and activities as core, particularly the customized online learnings that provided government-specific acquisition examples.

### Finding 2.2: Assessments after each release were useful gauges of participants’ knowledge and skill acquisition, but cohort participation was lower than expected and should have been a required element

As the “measure” of the build, measure, learn cycle, our team conducted an assessment at the end of each release. The purpose of these assessments was for our team to gauge participation in sessions and activities, assess participant knowledge and skill acquisition, and refine program content based on themes of learner needs. While we believe this to be an important component of the program as we move forward, participant completion was not adequately incentivized for assessment activities for each release separate from learning content. For example, 36 days after Release 4 and three reminders sent, only 16 participants out of 28 participants had completed this assessment – note that we ended up receiving one more completed assessment after the third reminder was sent. Our statistical inspection of the data showed that this level of response rate for this sample results in approximately a 16% margin of error, a quite substantial margin important to consider when interpreting results. For example, one of the findings from the Release 4 assessment was that 82% of the participants were in a job where they could immediately apply what they had learned. With a 16% margin of error, that means for the full population of 28 participants, the true answer to this question falls somewhere between 66% and 98% of participants who can immediately apply what they have learned. Given the small number of participants that are expected in each cohort for this training (approximately 30), nearly all participants must participate in the assessments to have confidence in the accuracy of the results and adequately inform training needs for each cohort.

### Finding 2.3: Badging has the potential to serve as an extrinsic motivator for program participation but requires implementation modifications

|  |  |
| --- | --- |
|  | **Number of Participants** |
| **Release 1 Assessment** | 18\* |
| **Release 2 Assessment** | 13 |
| **Release 3 Assessment** | 23 |
| **Release 4 Assessment** | 17 |
| **Release 5 Assessment** | 11 |

Participants entered the program with less knowledge about digital services than anticipated, as many participants do not currently operate in a digital services acquisition role. Our Phase II proposal presented a total of approximately 45 core activities and 25 elective activities designed to help build participant knowledge and skills; the elective activities were intended to help close knowledge or performance gaps for a minority of participants who entered the program with a low level of knowledge—or to serve as “extras” for motivated participants who wanted to “do it all.” However, given the overall low entry knowledge of the cohort, many participants’ IDPs recommended that they complete all core and elective activities. Perhaps as a result of this and the sheer number of activities to be completed, we saw lower results in the completion of core activities – approximately 64% of participants completed the core activities, less than the 90-95% of participants that we normally see complete mandatory activities in a training program. The release assessment results are also telling. While this was a core activity that we reminded participants to complete, our completion percentages ranged from 39% – 82%. However, it is relevant to note that there were significantly more activities required (as they are sub-divided into smaller units/time commitment) than other programs and that participants frequently expressed concerns with the time commitment they needed to dedicate to the program.

**Exhibit 7. Number of participants who completed each release assessment**

As a result, we implemented badging to help incentivize participation in program activities and extracurricular activities and gamify the learning beginning in Release 2. There were two types of badges offered during the program:

|  |  |
| --- | --- |
| **Participation Badges** | **Extracurricular Badges** |
| Awarded for completion of core and elective sessions and activities in the pilot. Participants received “levels” of badges – gold, silver, or bronze based on the number of core and elective sessions and activities they completed throughout the pilot. | Awarded for opportunities that participants independently completed outside of the pilot. Examples included speaking engagements, external training events, attendance at conferences, blogging, and other activities. Participants submitted those extracurricular opportunities they engaged with and could “level up” as more extracurricular activities of a particular type were completed. |

We also created a leaderboard to track badge achievement on the portal, working under the assumption that people “play harder when you’re keeping score.” However, due to flexible due dates for activities and a system that required manual award of badges after checking the number of activities completed by participant, we did not award badges incrementally after each release as originally intended. Instead, we awarded badges en masse at the end. This also meant that we did not post the leaderboard until the end of the program. We hypothesize that the impact of the incentive to win was reduced as participants could not track their completion of activities vis-a-vis other participants. We also observed a decrease in participant completion of activities in Release 2 when we began awarding badges (69% of participants completed all core activities in Release 1 compared with 41% in Release 2), which could mean that badging did not incentivize completion of core or elective activities.

It is worth noting that when inspecting the relationships among participant performance on the Capstone (i.e., total score combining skills test and live digital assignment) and participation badging, we found a moderately positive (non-significant) correlation between participation badging and Capstone performance. This result indicates that, on average, top performers on the Capstone received higher participation points than moderate performers on the Capstone, and moderate performers on the Capstone received higher participation points than bottom performers. Collection of more data with subsequent program administrations will inform how robust and sustained such a relationship is. If more data indicate this relationship to be strong and consistent, such knowledge can inform targeted interventions using badging levels as a potential indicator of subsequent performance on the Capstone.

Finally, during the Release 6 classroom session, participants expressed that extracurricular opportunities (e.g., public speaking, networking, and professional development), which we rewarded through the extracurricular badging system, were valuable. Participants indicated that it helped them to build their personal brand and credibility in the field so that they are positioned to have more change and influence in their home agencies.

### Finding 2.4: The program identified the right support network members, but these individuals need clearer structure for their role and responsibilities

Long-term, high intensity learning programs frequently include a mentoring element, where an individual with more expertise and experience is paired with a participant who has less expertise and experience. The goal of mentoring in the DAP was to empower participants to take risks, experiment, and try something new, which leads to behavior and culture change. Mentors generally play the role of a teacher, guide, or advisor; mentees (program participants) play the role of a learner and experimenter. In the DAP, our mentors were team members at the U.S. Digital Service. We were clear with current pilot participants that we expect them to become mentors in subsequent iterations of the program as they will blend both digital and acquisition expertise (vs. primarily digital expertise). Our release assessment results indicate that as of Release 4, 53% of participants had not met with their mentors. Upon learning this, we followed up in-person with participants on why they had not met with their mentors and received a range of responses on the utility of mentors from, “I would call up my mentor to explain technical concepts to me regularly” to minimal to no contact with mentors. This is to be expected given the highly relationship-dependent nature of mentoring.

Unstructured mentoring and coaching was also incorporated into the pilot via U.S. Digital Service acquisition experts. These individuals provided advice on a variety of topics from experience sharing to digital acquisition document review to career opportunities counseling. While this relationship was not formally assessed, we believe it to be a key contributor to the program’s success.

### Finding 2.5: The live digital assignment presented opportunities for application, but there were challenges for teams in achieving forward momentum

The live digital assignment is a way for participants to address an actual agency, customer, or program owner need that would be crafted throughout the program in alignment with the acquisition lifecycle. However, live digital assignments were at various phases in the acquisition lifecycle, some shifted away from digital service acquisition and towards maintenance and operations, and others became mired in political challenges that created delays. These challenges are demonstrated in participants’ perception of the value of the live digital assignment. In Release 2, 77% of participants found the live digital assignment valuable compared with 50% in Release 3.

Participants indicated in qualitative feedback that the live digital assignment prepared them to handle challenges and resistance they might face when procuring digital services. However, those live digital assignments that were the most successful, which was validated by high participant aggregate scores in the live digital assignment capstone, included the following criteria:

* Creating a value add for the agencies working with them to reach out. At first, some participants indicated that it was challenging to “get the agencies to listen to them,” particularly when they felt they did not have the expertise to offer yet. As participants moved through the program, many began to view themselves as providing expertise on digital service and methods strategies for digital procurement. As they gained expertise, they felt better positioned to provide advice and be heard by the teams.
* In general, those teams with one or more participants from the agency found it easier as they understood the agency’s culture, ways of doing business, and key stakeholders and could push to drive results. These individuals scored in the top 25% of the class on the live digital assignment capstone presentation.
* In general, teams that defined clear outcomes for themselves at the beginning of the live digital assignment were most successful. For example, one team developed an RFI tool that compiles all results into one spreadsheet. Another team created an RFI template using an agile approach, even though their acquisition was not going in that direction, and used it as a learning document for themselves. Out of all participants who presented during the Release 6 classroom session, these two teams had the highest average scores.

One of the primary challenges associated with the live digital assignment was that, in some cases, the projects selected were in a stage that was too early to achieve significant momentum through the acquisition lifecycle. According to the USDS program management mentors, some projects did not have their stakeholders onboard yet and were still working to achieve this in the first few months of the projects. These teams lost valuable time, and their resulting solutions may have only been from a few months of work. The teams that were most successful pivoted earlier in the process, such as the team that developed the RFI tool.

The other challenge of the live digital assignment was those projects that evolved to require more of an operational and maintenance or commodity focus, and did not require procurement of digital service. This meant that teams were using strategies and processes that they were already comfortable with as acquisition professionals. Moving forward, the focus of these projects should be on more customized solutions that require market research, development of a tailored acquisition strategy, and other strategies that require participant critical and creative thinking.

### Finding 2.6: Discussion boards were successful, but large number of threads caused some posts to get lost

Over the six month pilot, participants posted to the discussion boards more than 250 times with posts that included questions on digital acquisition content, requests for networking and external learning opportunities, sharing tools and resources to support digital acquisition, and success stories and challenges with digital acquisition. While the majority of discussion threads within the board received responses/conversation, some did not receive any responses and others might only receive a response a few days to a week later. This is because participants were starting many new threads rather than responding to each other. As a result, we believe this to be a discussion board organization challenge that we can offer remedies for during the MVP.

### Finding 2.7: The combination of an animated situational judgement test (Capstone Skills Assessment) and a rated group assignment presentation (Live Digital Assignment) provided a strong methodology to capture participant mastery

The Capstone assessment was composed of two activities that targeted: (1) knowledge acquisition (Level 2) – the Capstone Skills Test and (2) application of key learning (Level 3) – the Live Digital Assignment Final Presentations.

* The Capstone Skills Test was an animated situational judgement test structured similarly to the pre-assessment. It was worth 40% of participants’ final program grade. Data gathered during the Capstone Skills Test will serve as a baseline for a “passing score” on the final knowledge assessment to be established for future cohorts and as input into certification.
* In the Live Digital Assignment final presentation, each group prepared and delivered a final 15-minute presentation. A panel of faculty members and subject matter experts used a structured rating form to guide observations and ratings on two dimensions – technical communication and analytical ability. Participants also used a similar structured rating form to rate themselves and other group members on two dimensions – engaged contribution and collaboration. This presentation activity was worth 60% of participants’ final program grade.

Using a combination of these two assessment components provides a mechanism to measure participant knowledge acquisition and learning outcomes for participants who may either not be strong test takers or by contrast not be strong presenters. By having two assessment methods, we account for diversity in what our participants may excel in.

It is worth noting that when inspecting the relationships among time spent across Releases and participant performance on the Capstone (i.e., total score combining skills test and live digital assignment), we found a small, negative, non-significant correlation between time spent and Capstone performance. This result indicates that, on average, the middle third of performers spent the most time on program activities, while top performers spent the least amount of time. Collection of more data with subsequent program administrations will inform how robust and sustained such a relationship is. The current data implies that individuals with higher levels of mastery upon the conclusion of the program on average needed to spend less time on activities due to their growing competence. The time spent by the middle third of participants could indicate this group was engaged in their learning progression and invested more time to achieve mastery. Since the bottom third of performers, in contrast, spent less time, we might infer that those individuals did not see spending more time on activities as being a viable path to improve their comprehension and mastery levels. Such data interpretations are to be made only with caution, given the small sample sizes obtained during the pilot program. If more data indicate this relationship to be strong and consistent, we can draw various conclusions about how to support the middle third performers and lowest third performers and formulate data-driven targeted interventions to support learners.

Additionally, we found a small, non-significant correlation between attendance in Guided Learning Sessions across Releases and performance on the Capstone (i.e., total combined score). This result indicates that, on average, top performers on the Capstone attended more sessions than bottom performers. The current data implies that top performers received value from guided learning sessions and their participation served as one mechanism to maintain their command of the content and achievement levels, which were exemplified by their performance on the Capstone. If more data indicate this relationship to be significant, then perhaps communication about the critical role of these sessions is warranted to increase participation of lower performers.

## Category 3 Findings: Program Administration

### Finding 3.1: The facilitator role and time commitment for the program was greater than anticipated

Approximately 60% of the program’s time commitment is facilitator supported, which includes the guided learning webinars and classroom sessions. This translates into approximately 114 hours of instruction over the six month timeframe. However, this commitment does not include the hours spent providing a valuable participant experience and answering the questions they have that range from resetting their password to groups wanting to meet to discuss the focus of their live digital assignment presentation for the next Demo Day. For our team, this was a learning experience, and we spent more time than anticipated answering participants’ questions and working with them in an individual or small group coaching capacity. This translated into an extra approximately 6-8 additional hours of work per week for the facilitator.

As a result of participants’ varied needs that were primarily asked via email or during the webinar sessions, we found it beneficial to deploy a combination of a digital acquisition subject matter expert and a facilitator who provided directions, instructions, and created a consistent learning experience. This ensured that the subject matter expert was able to spend time preparing for and delivering content to the group and answering their technical questions, while not also trying to think through the logistics of the program and stimulating dialogue among the group. Structuring the facilitation in this way enabled our team to deploy the expertise of each facilitator where it was most relevant and helpful for participants. It also minimized the burden of the larger than anticipated time commitment to creating a positive customer experience.

In addition to these two facilitators, the program will continue to use guest speakers for various release topics.

### Finding 3.2: Manual tracking of participation and use of an external assessment tool took significant program team members’ time

The “out-of-the-box” edX functionality does not offer advanced analytics for tracking individual participant completion of activities or scores on release assessments. Therefore, our team members manually tracked participant completion of sessions and activities to award badges after each release. We also conducted assessments in an external system in order to track individual responses to the questions in a more automated, systematic way. This approach resulted in two challenges:

* Manual session and activity completion within the edX system required program development team member time. In addition, whenever a participant completed another session or activity after the release had wrapped up, our team had to go back through and make manual updates in the system. This represented a significant time commitment for our program team members.
* Release assessment completion outside of the portal required an extra step for participants and meant that program data was kept in two separate locations. While this was a workable solution for the pilot, as the program scales it will pose a challenge as it is another system to work with and maintain throughout the program.

See Recommendation 3.2 for a discussion of how we suggest remediating this moving forward.

# Our Recommendations

## Category 1 Recommendations: Program Design and Instructional Strategies

Based on the above findings in this category, we recommend the following adjustments in the MVP.

### Recommendation 1.1: Continue to use an agile approach for program revisions

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| **Relevant Finding** | * Finding 1.1: Agile learning design was successful |

Continuous improvement of content in an agile learning program requires that we revisit which content should make up the 60% and the 40% in subsequent deliveries as we observe trends in participant needs and the digital service landscape changes. Specific updates recommended are included in our Introduction, but are also summarized below.

* At the end of each delivery of an agile learning program, the team should review all content created to validate whether it is a need of a specific individual or group of individuals within the cohort or a more universal need that is likely to arise across cohort deliveries in which case it should become a part of the fixed content and ensure its proper placement in the sequence of learning throughout the program. Content that we determine should continue to make up the 40% of responsive content can be added to a library of options that may reduce variability in content needed for subsequent deliveries of the program.
* Revise content that is impacted by the rapid evolution of policies, processes, practices, or technology. This includes digital services terms and concepts (e.g., open source, cloud) as well as policy, regulations, and practices in the digital service acquisition field that are updated to align with the digital services that are procured.
* Based on assessment data and participant feedback, participant confidence in the “act” area was lower across the topics (an average of 64% felt they could apply/take action across the various topic areas), likely because participants needed more practice applying the knowledge they acquired. Moving forward, there is an opportunity for us to develop more hands-on activities during the MVP. These practice and application activities will also need to be refreshed in subsequent deliveries of the program.

Post-MVP, we recommend that agencies continue to apply an agile learning approach. However, we hypothesize that needed revisions in each subsequent delivery will decrease as a result of: 1) trends in participant needs; and 2) the creation of a library of the more individual participant needs that can be drawn upon for subsequent deliveries. Even though this content may need to be updated to reflect the evolving nature of digital services, the core content will be in place.

### Recommendation 1.2: Refine the pre-assessment & IDP

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| **Relevant Findings** | * Finding 1.12: Actual participant time commitment did not align with program expectations; additional effort must be made to “right size” this commitment and ensure organizational support * Finding 1.9: Remediation was needed for participants to secure mastery of content and create full readiness for application * Finding 2.1: Lower than expected entry knowledge of the cohort resulted in participants receiving IDPs that recommended completing almost all activities |

Our team maintains that the pre-assessment and IDP are valuable tools to target and evolve individual learning throughout the program. We recommend pivoting the outcomes of each to reflect participants who may not be coming into the program with as much knowledge of digital services, but who may demonstrate a greater learning curve as the program progresses and they become more familiar with the terms and concepts. While we still recommend administering a pre-assessment to create a baseline score for participants across our key learning objectives, we maintain that a key secondary use will be by the facilitation team to gauge participant knowledge of digital terms and digital acquisition concepts.

Pre-assessment results, as interpreted by the content and facilitation team, will provide the team with data to inform an initial assessment of potential targeted guided learning sessions (see Recommendation 1.12: Restructure the guided learning Office Hours and Iteration Retrospectives to align with program needs) and curated articles, videos, and other self-directed learning materials as supplementary resources for the cohort. Furthermore, including “don’t know” or “not applicable” response options with accompanying open-ended response opportunities to the test structure will yield participant input regarding those topics perceived as not relevant, where participants may not have a baseline understanding sufficient to answer the pre-assessment question, or where there may be an opportunity for discussion of how different situations can impact how a participant might respond in the situation. These kinds of additional data points will be useful to the facilitation team and inform course customization to specific cohort needs.

Rather than the IDP functioning as a pre-release activity to prioritize the time they spend in a release, our team recommends using it as a directional tool to help participants target additional development and prioritize their efforts. At the end of each release, participants will take the post-release assessment on core sessions and activities. Based on their knowledge acquisition, we recommend that participants each receive a list of the top three and bottom three performance objectives. For each of their bottom three performance objectives, we recommend that they are presented with supplementary or elective activities to further develop their knowledge and prepare them for the Capstone Skills Assessment. This recommendation serves three purposes: 1) it minimizes participant time commitment on each release as much as possible; 2) it targets participant remediation activities; and 3) it communicates the value of creating lifelong learners who make learning progress, assess and reflect on their progress, and then refine what they will learn next. This recommendation also incentivizes participants to revisit their IDP throughout the program, as new performance objectives to target will be added upon completion of each release assessment. Finally, the release assessment and updated IDP help the facilitation team to target content in the Iteration Retrospectives, which will be based on performance objectives that participants had the biggest challenges with (see Recommendation 1.12: Restructure the guided learning Office Hours and Iteration Retrospectives to align with program needs).

### Recommendation 1.3: Set clear program expectations during Orientation and Iteration Planning Meetings

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| **Relevant Findings** | * Finding 1.2: Overall structure of the program established a predictable rhythm for participants with clear expectations and pace for learning * Finding 1.12: Actual participant time commitment did not align with program expectations; additional effort must be made to “right size” this commitment and ensure organizational support * Finding 1.7: Extensive and clear communication required on the purpose and rationale of each session, activity, and conversation * Finding 2.7: The combination of an animated situational judgment test (Capstone Skills Assessment) and a rated group assignment presentation (Live Digital Assignment) provided a strong methodology to capture participant mastery |

During the pilot, we had approximately one month from award until the program started. An agile learning approach enabled us to deploy our solution very quickly. However, it also meant that our team was building both the fixed and responsive content as the program progressed and that our facilitators were preparing and delivering as content became available. Moving forward, our team will communicate clear program expectations during the first-day of Orientation so participants can plan their experience from the get go. This includes:

* Describing what participants will be evaluated on throughout the program. This includes both what they will be assessed on during the release assessments (largely knowledge of digital concepts) as well as the Capstone. Our approach to the Capstone is described in Recommendation 2.1: Continue to use two-pronged Capstone approach, but ensure participants are made aware of it during Orientation. The purpose of this communication is for participants to structure their learning according to what they will be assessed on, which is aligned with the larger program goals.
* Emphasizing the anticipated time commitment to the program per week. We will reinforce the message that the program is a lot of work, and that participants should set aside time to complete the 10-14 hours of work required per release. We will also share this same message with other stakeholders including managers and mentors who can emphasize this throughout the program.
* Sharing the value of a rhythm for releases and iterations. We will walk participants through what they should anticipate in each two-week iteration, including self-directed learning included in the portal; an iteration planning webinar meeting that will outline the sessions and activities to be completed in the two-week iteration; guided learning webinars that will be established at fixed times within each two-week iteration; and classroom sessions.
* Discussing how cross-cutting activities that participants work on throughout the program (e.g., live digital assignment and shadowing/detail opportunities) provide opportunities for experience and application. Throughout the pilot, participants wanted more opportunities to practice and try out what they had learned with digital concepts. We need to be intentional about communicating how these activities provide these opportunities for participants.

During Iteration Planning Meetings, our team will also communicate more intentionally about the rationale or “why” participants are completing certain sessions and activities and will communicate when we are offering varying perspectives for participant interpretation. Because the digital services marketplace is complex and ever evolving, there is frequently no one source for information. However, we recognize that for participants new to this field, it can be challenging and sometimes confusing. Our recommendations are as follows:

* Integrate more information on the rationale, purpose, and contribution of each activity to the overall program during the Iteration Planning Meeting. We will include a specific field in our template that is dedicated to describing the purpose and rationale of each session and activity. We will also streamline the way in which we discuss the purpose and rationale using a sub-set of words aligned with Bloom’s Taxonomy of Learning Domains (e.g., observe, discuss, learn, practice, apply, analyze, create). By streamlining the use of wording, we will make it easier for participants to organize their key takeaways.
* Clarify where we are offering varying perspectives both during the Iteration Planning Meeting and in the way we organize the portal. For example, an online learning on agile and two readings that share what it looks like when it is implemented could be included under one left navigation item with a description on how each article offers a different perspective and what it contributes as participants develop their own perspectives. In these situations, participants will also be asked to discuss the differences they notice among the perspectives and how it has helped them to generate their own.

These tactics will clarify the experience for participants and encourage them to develop their own perspectives on the different topics.

### Recommendation 1.4: Revise program goals to reflect more of a knowledge, learning, and application focus; true expertise develops over a longer timeframe

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| **Relevant Finding** | * Finding 1.3: Partially achieved the primary outcomes of the program, as per the Challenge |

As stated in our findings, the DAP had three program goals. For the MVP, we have revised the first program goal to move away from the term “expert” and towards a program that is more focused on building participant knowledge, learning, and application of digital acquisition. While participants will have opportunities to experiment and apply concepts they have learned throughout the program, these will not be at the frequency needed to create true experts. In addition, given that participants entered the program with an overall low level of knowledge about many basic digital acquisition concepts and modern design and development approaches and do not have the time available to commit to become digital experts in six months, we recommend revision of the program goals to focus on the core knowledge, skills, and application needed to act as digital service acquisition change ambassadors and business advisors to their teams, customers, and stakeholders. The revised program goals are as follows:

* Become certified digital service acquisition business advisors who understand and procure digital services and supplies utilizing concepts such as those described in the Digital Services Playbook and the TechFAR, appropriately measure the success of these contracts based on industry standards, accurately describe and define the value received, encourage the use of commercial practices and innovative approaches to ensure flexible procurements, build their personal brand as an ambassador for digital services, and understand how to effectively make contributions to digital services procurement processes.
* Are equipped with the knowledge necessary to be imbedded within agency Digital Service teams to serve as a business advisor to the team, its customers, and its stakeholders; and
* Have the knowledge to lead agency training, workshops, and consultations in order to expand digital service procurement expertise within their agency and the government.

The program will also create a foundation for the development of lifelong learners. By equipping participants with awareness of the entities, resources, methods, and tools used in the digital acquisition field (e.g., the TechFAR and Digital Services Playbook, 18F, Github), participants can not only read a suggested article for the program, but also revisit this resource in the program. Participants also begin to develop their “voice” in the digital acquisition field using the blog. This is a method used frequently in the digital service industry, and one that participants will be able to use as they move forward to learn new approaches, ask questions of other experts, and express their own perspectives.

We will also examine the performance objectives within each release as a result of the revised focus of the program goals and Recommendation 1.1: Continue to use an agile approach for program revisions. To do this, we will apply a methodology that revises performance objectives to indicate whether each is knowledge/learning focused (e.g., describe, identify) or application-focused (e.g., practice). This gets participants into the rhythm of and familiar with the progression of learning, from knowledge/comprehension to application/synthesis. This approach also helps participants stay focused on the outcomes they are driving towards, similar to how agile software development projects do this with a product vision and user stories. Thus, instead of partially achieving 50+ objectives, we can focus on the ~20+ core objectives needed to achieve the overall program goals. This will also help sharpen the focus of the release assessments, since up to three items are developed per performance objective.

### Recommendation 1.5: Provide threaded examples/scenarios that allow participants to analyze and apply their learning in each phase of the acquisition lifecycle

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| **Relevant Finding** | * Finding 1.4: Participants found value in opportunities to learn how others approach digital services and digital acquisition challenges and desire additional opportunities to observe and apply |

We recommend including the following types of threaded scenarios, which will allow participants to learn and then apply their learning at each phase of the acquisition lifecycle:

* **Recently awarded contract that showcases current best practices in acquiring digital services.** Participants expressed a desire for more actual examples of solicitation artifacts throughout the acquisition lifecycle and opportunities to analyze them. For the MVP, we recommend using the SBA ONE Contracting Systems Modernization solicitation and asking participants to analyze solicitation artifacts from it. For instance, in Release 3’s classroom session, we recommend asking participants to review the SBA acquisition strategy and then having SBA team members who participated in its creation attend a Q&A session in the classroom. This will also allow participants to ask more informed and specific questions of the SBA team during the classroom session to help them move from knowledge acquisition to considering how they will apply what they are learning on the job. NOTE: While threaded scenarios are useful for showcasing the full lifecycle of an acquisition, we still recommend retaining existing examples and “one off” case studies we currently included in the program to showcase aspects of digital services acquisition that may not be addressed in the threaded scenario. In addition, as examples of successful digital acquisition become more prevalent, we can also leverage those examples and solicitation artifacts for use in the program.
* **Fictional, but realistic scenario that requires participants to apply their learning in a team setting within the classroom.** Since participants expressed a desire for more opportunities to apply their learning, yet we had only approximately 60% of the pilot cohort submit SOOs (a self-directed application activity that was submitted for feedback), the classroom presents an opportunity to provide participants with “protected time” in which to experiment. In addition, given the varying levels of expertise within each cohort, completing an application activity in the classroom will also provide participants with real-time coaching from other colleagues and the facilitators. We recommend leveraging the fictional, but realistic scenario created for the pilot Release 2 classroom session and Release 3 SOO activity and revising it to allow participants to complete team-based application activities associated with it in each classroom session.
* **Fictional, but realistic scenario that requires participants to apply their learning individually.** Once participants analyze an existing contract and then complete team-based activities in the classroom, we recommend having them complete application activities either on their own using another fictional, but realistic scenario that is threaded throughout the program. To build this fictional, but realistic scenario, we recommend highlighting different aspects of the digital services market segments and/or slightly different solicitation approaches than in the other scenarios so as to build participants’ critical thinking skills and ability to apply knowledge and skills to new situations. Since we do not want to create extra work for participants who may already be in positions where they are applying their learning on the job, we recommend providing participants with the option to submit on-the-job material they have created that meet the necessary requirements. In this way, participants who do have the opportunity to apply their learning on the job do not have to complete both on-the-job tasks as well as program-related tasks to achieve the performance objectives; for participants who do not have the opportunity to apply their learning on the job, the program application activities will give them this opportunity.

(As discussed in Recommendation 1.4: Revise program goals to reflect more of a knowledge, learning, and application focus; true expertise develops over a longer timeframe, we will also adjust the iteration performance objectives so that they are more focused on the application level of Bloom’s Taxonomy. These scenario application activities will help participants achieve that higher level of learning, which is required to fully achieve the overall program goals.)

While adding additional individual application activities is desirable in order to meet the program goals, it does increase the load on the program facilitators to provide individualized feedback on each assignment. To enable the program to scale, we recommend identifying opportunities where participants can assess one another’s work using a scoring rubric provided by the facilitation team. For instance, this approach would be most appropriate in later releases in which participants will have built knowledge and skills to support them in providing meaningful feedback on others’ assignments. This approach reduces the load on the facilitation team while building stronger connections among the cohort, providing them with another opportunity to analyze the work of others and help to improve it, and allowing them to gain experience delivering constructive feedback to their colleagues.

### Recommendation 1.6: Embed leading change content throughout program, rather than in just one release

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| **Relevant Finding** | * Finding 1.4: Participants found value in opportunities to learn how others approach digital services and digital acquisition challenges and desire additional opportunities to observe and apply * Finding 1.7: Extensive and clear communication is required on the purpose and rationale of each session, activity, and conversation * Finding 1.12: Actual participant time commitment did not align with program expectations; additional effort must be made to “right size” this commitment and ensure organizational support |

We recommend embedding the Release 4: Leading Change in Federal Contracting content throughout the program as a foundational component, rather than focusing on it exclusively in one release. As expressed in Finding 1.4, the behavioral concepts taught within Release 4 need to be used by participants at every phase of the acquisition lifecycle in order to implement and achieve the program outcomes. As such, we recommend including content on topics like strategies for influencing others, leading changes in how acquisitions are approached, and working through resistance to each iteration, in addition to a focus on resources to support participants as lifelong learners and ways to build their personal brand/establish themselves as leaders in the profession. We hypothesize that this will allow participants to build their knowledge and skills in this topic area throughout the program, and participants will be able to apply them in the context of technical acquisition topics that are relevant to their current or future digital acquisition jobs. Thus, participants will learn by doing, the knowledge and skills will be reinforced over time, and they will better understand (or be more open to) how these skills should be applied on the job. In addition, we recommend ensuring that we clearly set expectations so participants fully understand and buy into the “why” behind how this content will support them in their role as digital services change agents.

Finally, by virtue of embedding the leading change instruction throughout the program and tightening the focus of other learning activities (to ensure we do not overload participants by adding additional activities to already-packed iterations), we then have the four weeks that were originally dedicated to Release 4 that we can now use elsewhere. We suggest including them after each release as “retrospective weeks.” During these weeks, participants will be able to complete work associated with the preceding release, reflect, and prepare for the start of the new release. This approach also allows us to build in this time without lengthening the overall program.

See Appendix A: Recommended Program Goals, Performance Objectives, Content, and Instructional Strategy Adjustments for more tactical details about how we propose accomplishing this recommendation.

### Recommendation 1.7: Release assessments as integrated feedback of mastery and opportunities to practice application

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| **Relevant Findings** | * Finding 1.12: Actual participant time commitment did not align with program expectations; additional effort must be made to “right size” this commitment and ensure organizational support * Finding 2.3: Badging has the potential to serve as an extrinsic motivator for program participation but requires implementation modifications * Finding 2.2: Assessments after each release were useful gauges of participants’ knowledge and skill acquisition, but cohort participation was lower than expected and should have been a required element |

We recommend requiring completion of the release assessments during subsequent deliveries of the program, as well as more seamlessly integrating the knowledge-based release assessment items (i.e., Level 2) into the structured learning sessions. In other words, we recommend that participants be presented with knowledge assessment questions and/or evaluated activities during various learning events, and that feedback be generated and shared back with participants within a designated time (e.g., 24-48 hours) of completion of enough activities to earn the bronze badge, and therefore generate meaningful data. Embedding knowledge assessments within core program activities to the greatest extent possible will minimize total participant time commitment and align with different participant test taking styles. Additionally, faculty will facilitate Iteration Retrospectives following completion of the learning activity and assessment. Faculty will follow an application-focused facilitated discussion methodology (e.g., using questions such as “what does this [topic] mean for you in your expected role(s)?”) (see Recommendation 1.12: Restructure the guided learning Office Hours and Iteration Retrospectives to align with program needs).

This strategy removes assessment from being experienced as an “afterthought” or an additional activity to accomplish for time-conscious participants, and transitions assessment into a natural part of the content and learning experiences with which our participants are engaging. *Please note that this type of strategy would still require a short 10-15 minute participant learning experience evaluation (i.e., Level 1) at the end of each release so that participant feedback regarding program delivery can inform continuous program improvements.*

Our team also recommends the following strategies to incentivize participants to complete the release assessments:

* Do not provide participants with access to the materials in the next release until they have completed the core activities and the release assessment (or collection of mini-assessments) for the previous release. See Recommendation 2.4: Continue to use badging to incentivize participation by adding features that create a more competitive experience for cohort participants for more detail.
* Ensure delivery of release assessment feedback promptly (i.e., within a designated timeframe, such as 24-48 hours) with targeted individual and cohort-level feedback so participants can prioritize their learning. To maintain test integrity, individual answers to questions will not be shared. Instead, our team will provide participants with a list of the top and bottom learning objectives they scored on each release and recommended learning opportunities they can access to reinforce their learning (either previously released content or new articles that make up the responsive curriculum). In addition, our team will review challenging areas of the assessments for participants at the cohort level and explicitly share how we are refining the content based on the cohort’s assessment results during the Iteration Retrospectives.
* Use scenario-based knowledge assessments within each core session or activity as a part of the program. Scenario-based test questions will help not only assess knowledge mastery but also begin to provide participants with practice applying concepts to real-world situations. For example, at the end of an online learning module participants could be presented with a scenario and/or a few questions relating directly to what participants learned. After classroom instruction, participants could respond to a scenario followed by multiple choice questions. After an interview activity, the participant would reflect on their greatest learning or observation aligned with the release content. After application activities (e.g., participants critique an SOO), participants could be presented with knowledge assessment questions relating to the aspects for inclusion in an SOO, the appropriate stakeholders with whom to discuss SOO creation, and the development of strong evaluation criteria.

### Recommendation 1.8: Recraft the live digital assignment to focus on solving digital service challenges

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| **Relevant Finding** | * Finding 2.5: The live digital assignment presented opportunities for application, but there were challenges for teams in achieving forward momentum |

Although we encountered challenges with the pilot live digital assignments, they did serve to forge bonds among smaller groups of participants and allow participants to tackle challenges. Since we plan on incorporating other acquisition-focused application opportunities throughout the program, we recommend the live digital assignment shift in focus to provide opportunities for participants to: 1) hone their teamwork skills by working in groups; 2) practice consultative, critical thinking, and problem solving skills in alignment with the overall program goals; and 3) identify a relevant digital services challenge that their agency is facing and that could benefit from a digital services product, service, or tool. By focusing on these two areas, we have more freedom to select assignments that give participants more opportunity to craft the best solution (without feeling the pressure to apply what they were learning to an acquisition that is outside their control and may or may not be digital services focused). Thus, we recommend focusing this assignment on having participants solve a digital services challenge of their choosing and delaying the official start of the assignment until Release 2, leaving Release 1 for participants to work on identifying a challenge and building their knowledge of the digital services marketplace. By digital services challenge, we mean any issue in their agencies, acquisition or otherwise, that could be supported by a digital services solution. This approach will directly align with the criteria discussed in Finding 2.5 about what made the pilot live digital assignments most successful and where there were opportunities for improvement:

* **Creating a value-add for the agencies working with them.** Because we recommend delaying the start of the assignment until Release 2, participants will have time to build their knowledge of digital services prior to its start. In addition, we recommend continuing to pair a USDS advisor with each team who can connect participants to the appropriate resources, both at USDS and across government. The USDS advisor will also continue to play the role of keeping the assignment on track when challenges arise.
* **Having participants from the agency where the digital service challenge originates on the team.** We recommend that participants select challenges that are within their own agencies so that each team will have at least one person on their team who serves as the direct point of contact and entry point into the organization.
* **Defining clear, realistic outcomes.** Because participants will have control over the problems they choose to address, they will also be able to more easily define and achieve the desired outcome.

In addition, this type of live digital assignment—and pairing with a USDS mentor—also builds participant knowledge and skills around digital services and how they are designed, developed, and delivered. In other words, it supports all overarching program outcomes.

### Recommendation 1.9: Employ “acqu-a-thons” to provide participants with consultative experience

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| **Relevant Findings** | * Finding 1.4: Participants found value in opportunities to learn how others approach digital services and digital acquisition challenges and desire additional opportunities to observe and apply * Finding 2.5: The live digital assignment presented opportunities for application, but there were challenges for teams in achieving forward momentum |

To provide acquisition-specific consultative practice, we recommend holding “acqu-a-thons” (similar to how digital services teams employ “hackathons), either as part of program classroom sessions or separately. In acqu-a-thons, agencies would participate and present live digital assignment teams with actual digital service acquisition challenges that they are facing, and participants (along with an assigned program mentor) would work with them to discuss the need they are addressing and various approaches they can employ to solve it more effectively. The goal of these sessions would be to emerge with some type of product (e.g., whiteboarded process that the team can follow or an outline of a solicitation artifact) that the agency can take away and use.

### Recommendation 1.10: Require participants to identify and participate in a digital services shadowing experience

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| **Relevant Finding** | * Finding 1.4: Participants found value in opportunities to learn how others approach digital services and digital acquisition challenges and desire additional opportunities to observe and apply |

Although we recommended a shadowing component in our original program design (we planned to include it in Release 1), given the logistics to coordinate a shadowing opportunity and the limited timeframe in which to do so between award and Release 1 kickoff, we opted to eliminate it. However, we recognize its criticality and recommend that participants identify the most challenging responsibilities (as identified by their pre-assessment and ongoing assessment results) where shadowing would help drive the needed behavior change. Generally, we recommend that participants participate in the following shadowing opportunities:

* **Digital services delivery team in government.** Participants should work with their mentor to identify an appropriate opportunity.
* **Digital services delivery team in the private sector.** To further the goal of providing participants with exposure to how private sector entities perform this work and to the business considerations inherent within it, we also recommend participants shadow a digital services team in the private sector that is working on a private sector digital service initiative. We recognize the logistical, organizational, and conflict of interest challenges that may be associated with identifying a private sector digital services team to shadow; if these challenges are deemed insurmountable, we can still achieve the overarching goal of building trust with vendors and allowing participants to “live” in their world and understand the business by continuing to invite vendors to participate in classroom sessions.

Participants should be given basic parameters around shadowing (i.e., recommended length, type of project) and should complete two by the conclusion of the program along with blogging about the experience. Examples of potential shadowing opportunities include: 1) participation in end user interviews in order to get a true “taste” for what user-centered design is and to provide a connection back to the ultimate customers that acquisition professionals serve; 2) participation in an agile sprint where participants sit with a digital services team and observe them at work and/or participate in various planning meetings to understand how agile works “in real life;” and 3) shadowing a CO on agile contract administration tasks (e.g., sitting in on contract administration meetings). In addition, we recommend providing structure around how participants bring their learning back and share it with the cohort, such as through mini presentations to the rest of the cohort.

### Recommendation 1.11: Systematically include specific types of guest speakers during each release and encourage participant reflection

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| **Relevant Finding** | * Finding 1.4: Participants found value in opportunities to learn how others approach digital services and digital acquisition challenges and desire additional opportunities to observe and apply |

We recommend using the performance objectives and the cohort-level assessment results to drive selection of guest speakers who participate in webinars and classroom sessions. As described in Recommendation 1.5: Provide threaded examples/scenarios that allow participants to analyze and apply their learning in each phase of the acquisition lifecycle, we recommend involving guest speakers from the SBA team, on both the vendor and government side, throughout the program. In addition, participants found value in hearing from USDS technology experts, and we recommend identifying areas where participants are not performing as well during each release and then selecting guest speakers who can attend classroom sessions or lead webinars and provide additional support or explanation on a topic, similar to how we approached the “review week” that was held following Release 4 in the pilot. Given that guest speakers do require coordination on the part of the facilitation team and government and scheduling can be challenging, we recommend using interim assessment data (e.g., polls we provide to participants during webinars) to inform early identification of possible areas where the cohort may need additional support and then blocking out time on potential guest speakers’ calendars as early as possible.

In addition, to ensure participants are reflecting on the information shared by guest speakers and how it can apply to them, we recommend a structured debrief or writing exercise where participants discuss topics they heard about and how those topics could apply to them.

### Recommendation 1.12: Restructure the guided learning Office Hours and Iteration Retrospectives to align with program needs

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| **Relevant Findings** | * Finding 1.8: Guided learning sessions were well attended and received favorable feedback, but participation decreased towards the end of the program and facilitators found stimulating discussion challenging |

While we do not want to lose the consistent rhythm of the guided learning (see Recommendation 1.3: Set clear program expectations during Orientation and Iteration Planning Meetings), the structure of the webinars should be aligned with program goals and participant needs. We suggest the following for guided learning webinars:

* Learning-focused webinars. In the beginning of the program, the majority of Office Hours webinars will become more structured learning opportunities that address key concepts or topics. For example, during the pilot we conducted a webinar on open source with a guest speaker and a webinar on developing strong evaluation criteria. The rationale for more learning-focused webinars upfront in the program is two-fold: Release 1 – Digital Services in the 21st century includes a lot of introductory topics, some of which participants wanted to learn more about sooner in the program, particularly open source and x-as-a-service that we could address; and 2) participants will become more comfortable interacting with Adobe Connect as a tool, including chatting and asking questions that we can leverage as they move into more discussion-focused webinars. Because it can be hard to maintain engagement during webinars, we will make these shorter with no more than 30 minutes of lecture and 15 minutes of Q&A.
* Iteration Retrospectives which will become Release Retrospectives. During review weeks after each release, we will conduct retrospectives, but will add more structure to them based on learner needs. At the end of each release (and one week before the Release Retrospective), we will review assessment results to identify those topics where participants had the weakest performance. We will also add other topics that our subject matter experts recommend should be covered during the program. Participants will be asked to rank the top two or three topics to be addressed during the Release Retrospective. Because participants have contributed to generating the topics, they will have more interest in exploring the content, asking questions, and having a discussion with the facilitator. In addition, by making participants aware of the topics addressed in advance, they will be able to prepare to discuss key learnings or ask questions about it.
* We recommend piloting smaller group Office Hours sessions organized by live digital assignment teams later in the program (e.g., from Release 3 on). Teams could meet with a facilitator once per month to discuss: 1) topics that have come up on their live digital assignments; 2) questions they have on digital service acquisition concepts they are learning; and 3) opportunities for application back on the job. Structuring the sessions in this way provides participants who find it challenging to speak up and ask questions in a larger group a safer space. These sessions also provide facilitators with insight on the challenges that individual participants are facing, rather than just those that our most engaged participants are sharing during the larger group webinars.
* Finally, Adobe Connect offers a breakout group feature that we can use for participants to collaborate in smaller groups on application activities (described in Recommendation 1.5). For example, participants could work together on analyzing a case or identifying evaluation criteria in small groups, and then come back together as a larger group to debrief and discuss.

These four recommendations will provide a clearer focus for the webinars and more direction upon which the facilitators can develop content and discussion questions. Using the webinars in this way also encourages participants to learn, explore, and discuss concepts in different ways throughout the program.

### Recommendation 1.13: Provide more structure and emphasis on building participants’ personal brand, network, and knowledge of available resources to continue their lifelong learning journey

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| **Relevant Finding** | * Finding 1.10: Participants are eager to serve as change ambassadors but additional emphasis should be placed on the brand- and network-building components needed in this role |

To continue building the digital acquisition professional community, enhance participants’ visibility within their own agencies and beyond, and build participants’ network and knowledge of how to stay current over time, we recommend the following:

* **Explore what it means to build participants’ personal brand and network and reinforce its importance throughout the program.** Beginning in the orientation, we recommend exploring these concepts and why involvement in brand-building activities is so critical to success in the program and success in their careers.
* **Increase the focus on building awareness of the digital services marketplace as well as digital acquisition.** We recommend sharing “who’s who” in the digital services marketplace and in acquisition (i.e., thought leaders, industry leaders, social media hashtags, market research agencies, professional organizations, government leaders) and ways to stay up to date with them (e.g., following them on social media, reading relevant blogs, signing up for newsletters). In addition, we recommend sharing open source learning opportunities with participants (e.g., edX, Coursera) in general and as part of our remediation strategy for participants who may need additional support (e.g., if additional resources are needed about a particular topic for an on-the-job need, if participants are struggling with a particular topic area, or if participants are advanced in a particular area and want more advanced learning). In this way, participants will have the tools and resources to continue building their knowledge of the digital services marketplace over time.
* **Share brand-building/networking opportunities via multiple mediums.** We recommend making event announcements more easily accessible on the portal, having the program alumni help identify opportunities and “get the word out,” and using social media to share the opportunities. We recommend creating a program hashtag that program facilitators can use when posting about or re-sharing an event; this allows participants to access all items tagged with this hashtag across all social media channels.
* **Coordinate bi-monthly structured events with program alumni.** We recommend making this coordination part of the program mentor role.
* **Require participation in at least two brand-building opportunities during the program.** These opportunities may include speaking on a panel, sharing knowledge in an agency newsletter, delivering an informal “brownbag” training about the program, or otherwise participating in activities that get participants’ names on the map or develop their network. This will provide an opportunity for participants to practice their change ambassador role and will help them establish themselves as the “go to” person for digital service acquisition.
* **Include a C-level interview as part of the program to promote leadership awareness of the program and help participants begin to get their name on the map.** While we encouraged participants to conduct interviews with stakeholders during the pilot, we did not require that they do so nor did we emphasize the importance of a C-level interview. In the MVP, we recommend making this a requirement to ensure it occurs.

## Category 2 Recommendations: Learner Support Mechanisms

Based on the findings in this category, we recommend the following for the MVP.

### Recommendation 2.1: Continue to use two-pronged Capstone approach, but ensure participants are made aware of it during Orientation

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| **Relevant Finding** | * Finding 2.7: The combination of an animated situational judgement test (Capstone skills assessment) and a rated group assignment presentation (Live Digital Assignment) provided a strong methodology to capture participant mastery |

Our team found the two-pronged methodology (i.e., skills test coupled with live presentation) to be an effective strategy for Capstone participant assessment. We recommend continuing to use this approach for subsequent program deliveries. While our team recognizes that the design of the Live Digital Assignment will evolve (i.e., focus on a digital challenge that a participant has at his/her home agency and development of specific solutions and tools to mitigate it), we maintain that requiring participants to work in teams and present the outcome of their projects is a valuable format and complements the situational judgment skills test.

Our pilot data provides baseline Capstone Skills Test and Live Digital Assignment thresholds to inform the establishment of a “passing score” for subsequent cohorts. We also have established rating dimensions for the Live Digital Assignment for both participants and faculty/observers. We recommend communicating the final assessment strategy (the test and final presentation) and rating dimensions (for the final presentation) at the Orientation (see Recommendation 1.3: Set clear program expectations during Orientation and Iteration Planning Meetings), so that participants can prepare for each activity with the outcome in mind. In particular, guaranteeing participants understand that each person will be rated on their technical communication and analytical ability will help ensure each member of the team designs their individual portion of the presentation to showcase these competencies. Structuring the individual presentations in this manner will enable faculty and program team members to better assess participants. Finally, moving forward, we will use current data to further strengthen the validity and reliability of the “passing score” thereby serving as a threshold for certification.

### Recommendation 2.2: Keep participants’ managers aware of the program, but do not involve them extensively

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| **Relevant Findings** | * Finding 1.10: Participants are eager to serve as change ambassadors but additional emphasis should be placed on the brand- and network-building components needed in this role * Finding 1.12: Actual participant time commitment did not align with program expectations; additional effort must be made to “right size” this commitment and ensure organizational support |

Given the time commitment of the program (about 10-14 hours per release), we suggest that managers be kept aware of the program’s expectations via periodic touch bases, but additional manager involvement will be the responsibility of each participant (e.g., to review the participant’s IDP, facilitate opportunities for practice of skills). Keeping managers aware of the program and its goals will not only ensure they are aware of the time commitment involved, but it will also build buy-in with the managers as part of the desired organizational culture change and will help establish participants as the “go to” digital acquisition professionals in their agencies.

Approximately every two releases, we suggest a 30-minute touch base with managers via web conference or conference call to share: 1) an overview of the upcoming release/s; 2) the anticipated time commitment for the release; and 3) upcoming sessions where participants may be out of the office (e.g., an acqu-a-thon, guest speaker). We will provide coaching and guidance to managers who are looking to support identification of application opportunities for their participants, as needed and requested. Finally, we will follow up with an email/short attachment of the agenda.

Other contact with managers will be the responsibility of each individual participant. Our team will provide preparation guides for participants including suggested discussion questions/topics, such as progress made against the IDP, potential opportunities for integration of digital service concepts and approaches into business practices, and concepts and approaches that the participant suggests sharing with their office (e.g., brownbag training sessions).

### Recommendation 2.3: Mentors should offer advice on participants’ learning and development and a network of relationships to call for just-in-time development and advice regarding real-world situations

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| **Relevant Finding** | * Finding 2.4: The program identified the right support network members, but these individuals need clearer structure for their roles and responsibilities |

Traditional mentoring pairs individuals with more experience and expertise in a particular area with those who have less experience and expertise. Recent mentor research also posits that there is no one mentor who can offer all development advice. As a result, we suggest two types of mentors for the MVP – program alumni who function as core mentors; and USDS experts who function as live digital assignment points of contact as well as technical mentors in “as needed” situations.

* Program alumni will serve as mentors to subsequent cohorts, as they bring both digital and acquisition expertise, can help the participant to target his/her development throughout the program as a result of their experiences in the program (e.g., what was valuable and what could have been more impactful), experience experimenting with learned concepts back on-the-job via real procurements, and an understanding of the challenges that participants may face when they seek to implement a new approach. Leading and influencing change can be challenging – both mentally as well as emotionally; it will be beneficial to have mentors who have been in the same role as participants who can share their own challenges and success stories. In addition, using program alumni as mentors contributes to the creation of a broader digital acquisition network.
* USDS experts could evolve into the role of “technology consultants or advisors.” They would function as a resource pool that participants can draw on for specific technical topics that emerge in their live digital assignment. These technical mentors will be recommended by the USDS live digital assignment points of contact as the need arises for each group’s live digital assignment – see Recommendation 1.8 for more information. One of the goals of the program is to prepare participants to be change agents post-program. By reinforcing the identification and leveraging of technical resources throughout the program, the likelihood that participants continue to use this approach post-program will increase.

Mentoring is highly relationship dependent. To facilitate core mentoring relationships, we will conduct a mentor selection process where program alumni (the mentors) complete a short profile including a description of their digital acquisition experience on-the-job, the 5-7 topics that they feel most ready to “act” and “teach” on related to digital acquisition, and some interesting personal facts about themselves (e.g., what excites them most about their job, what they have no tolerance for, hobbies outside of work). Participants will review the mentor profiles and meet the mentors during Orientation. Based on a combination of the mentor profile and their meetings during Orientation, participants will select their top three mentors and then our team will facilitate the matching process. This process accounts for the interpersonal dimension of mentoring.

The core mentor will play an important role in the participant’s development throughout the program. We will implement the following structure:

* The mentor and participant will review the IDP together and identify gaps that the participant can address throughout the program. These gaps may be either knowledge-focused (e.g., “I don’t know too much about open source”) or experience-oriented (e.g., “I have not seen an agile sprint in real-life”). The mentor will sign off on the participant’s IDP.
* Throughout the program, the mentor will work with the participant to assess where he/she is bridging gaps on the IDP. When a participant closes a gap, then the participant will receive a silver or gold badge (described in the badging system recommendation). The mentor will determine whether the participant receives the silver or gold badge.
* Similarly with extracurricular requirements, the mentor will help the participant to identify and facilitate these types of opportunities. After completion of the opportunity, the mentor will report its successful completion to the program for award of an extracurricular badge.

Finally, for mentors, we will add an incentive that ensures a meaningful commitment to their mentoring role in the program. All mentors who volunteer will receive CLPs. Mentors who “get” their participants to engage in extracurricular activities or earn silver or gold badges by meaningfully closing IDP gaps will receive additional CLPs on a case-by-case basis. This incentivizes mentors to continue to engage with participants throughout the program and adds an element of competition among the mentoring pool to have the participants with the most badges. We provide additional recommendations on the badging structure and incentives in Recommendation 2.4: Continue to use badging to incentivize participation by adding features that create a more competitive experience for cohort participants.

### Recommendation 2.4: Continue to use badging to incentivize participation by adding features that create a more competitive experience for cohort participants

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| **Relevant Findings** | * Finding 2.3 – Badging has the potential to serve as an extrinsic motivator for program participation but requires implementation modifications * Finding 2.4 – The program identified the right support network members, but these individuals need clearer structure for their roles and responsibilities |

We recommend retention of the existing two-tier badging structure that consists of participation badges awarded by release at the gold, silver, and bronze levels and extracurricular badges that are tied to completion of a certain number of activities (e.g., speaking engagements on a panel, attendance at training events offered outside of the program) as well as the concept of a leader board. As a part of the MVP, we recommend that badges be awarded to participants at the end of each release and that the leaderboard be updated at the end of each release. We also recommend a number of refinements to incentivize individual motivation and add a competitive dynamic among cohort participants. We recommend the following badging structure:

* All participants will be required to achieve a bronze badge before they progress to the next release. A bronze badge is awarded for completion of 75% of core activities in the release. Participants will be individually incentivized to complete these core activities as they will not be able to “unlock” (proceed to) the next release without having completed them.
* As mentioned in the mentoring recommendation, participants will work with their mentors to identify gaps in their IDP that they can focus on throughout the program. As participants fill these skill gaps, they will meet with their mentor and determine whether they receive a silver or gold badge for the release. This incentivizes participants to fill skill gaps in their IDP as they will be asked about them and held accountable by their mentor, and their results will appear on the leaderboard where other participants will see their achievements.
* Mentors will also work with participants to identify extracurricular activities that participants can engage with outside of the program. Participants will be held accountable for these activities as there is a separate leaderboard dedicated to participation in extracurricular activities.

This recommended revised badging system taps into both intrinsic motivation as participants will see a direct relationship between areas of development they should target throughout the program and award for taking on these development opportunities and extrinsic motivation from the competition stimulated among participants. Badges are also a source of pride for participants as they can become authorities and resources in particular areas. For example, a participant who has spoken at multiple panels can share that experience with others, such as what types of questions are asked or how he/she recommends that panelists prepare.

In addition, we also recommend that participants’ mentors be incentivized to engage with participants on an ongoing basis throughout the program. Mentors will be extrinsically motivated by receipt of a baseline amount of CLPs for participating as a mentor. Mentors will receive additional CLPs based on their success with identifying and filling skill gaps with participants based on their IDP results throughout the program. Mentors will be intrinsically motivated by helping participants to fill clearly outlined skill gaps where they can offer specific, targeted suggestions on development activities that participants should engage in throughout the program. This will provide a clear outcome rather than the open-ended request to engage in a mentoring relationship and “share knowledge” that is frequently included in these types of programs.

### Recommendation 2.5: Structure discussion boards to have fewer topics/threads and encourage participants to respond to each other

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| **Relevant Finding** | * Finding 2.6: Discussion boards were very successful, but large number of threads caused some posts to get lost |

As mentioned in our findings, discussion boards had too many threads, resulting in participants not receiving any responses to some of their posts and others only receiving a response a few days to a week later. We recommend organizing discussion boards according to participant outcome – questions on digital acquisition content, requests for networking and external learning opportunities, sharing tools and resources to support digital acquisition, success stories and challenges with digital acquisition, and other topics/miscellaneous for general participant conversation. Because there will be a limited number of topics, participants will only need to peruse through these four on a regular basis rather than trying to remember where they posed a question to the group or offered up a tool. We also recommend periodically checking in with participants to ensure that these topics remain fixed and that we do not need to add others to the list.

## Category 3 Recommendations: Program Administration

Based on the above findings in this category, we recommend the following adjustments in the MVP.

### Recommendation 3.1: Continue having two primary facilitators over the course of the program

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| **Relevant Finding** | * Finding 3.1: The facilitator role and time commitment for the program was greater than anticipated |

Given the time commitment for both facilitation as well as providing a meaningful participant experience, we recommend the continued use of two primary facilitators. In addition, having a subject matter expert who was able to focus on content delivery and answering participant questions and a facilitator focused on stimulating discussion and answering questions about the logistics of the program was a valuable pairing and enabled our team to divide the responsibilities in a useful way.

### Recommendation 3.2: Develop integrated and automated portal analytics to track badging and release assessment results

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| **Relevant Finding** | * Finding 3.2: Manual tracking of participation and use of an external assessment tool took significant program team members’ time |

Our team recommends a more advanced analytics function in the portal to track badging and release assessment results. This recommendation enables participants to: 1) view an updated leader board and badging, as needed; 2) unlock subsequent releases when a bronze badge is received based on core activity completion; and 3) receive their highest and lowest performance objectives based on release assessment results within a designated timeframe (e.g., 24-48 hours) and suggested updates to their IDP.

## Recommendations Prioritization Matrix

To assist OMB in determining which recommendations to prioritize first, our team developed a prioritization matrix that is based on two dimensions for success – relative value and ease of implementation.

* The **Relative Value axis** measures the relative impact the recommendation would have on the program.
* The **Ease of Implementation axis** measures the ease or difficulty in time and resources required to implement the recommendation.

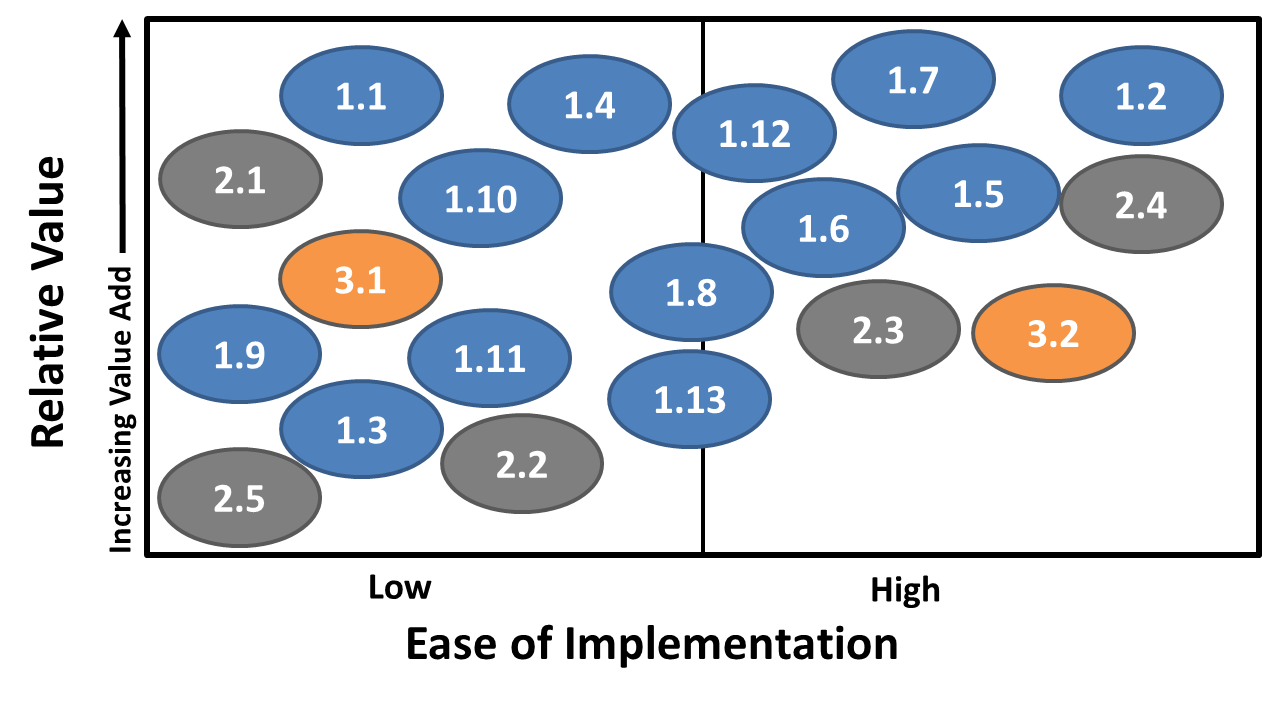
Each axis is constructed as a continuum from low to high. The recommendations are organized according to their placement on each dimension. Note the following about these continuums:

* Recommendations that are placed vertically lower represent a relatively lower value to the program than those placed towards the top. Note, however, that we did not want to imply that any recommendation has “low” value; therefore, we labeled the Relative Value axis with “increasing value add,” as all recommendations will add value.
* Recommendations towards the left of the diagram will require a lower level of effort to implement than those placed towards the right.

This prioritization matrix will assist OMB in making tradeoff decisions about which recommendations to prioritize for the MVP.

We have color coded recommendations according to their focus area: Blue – Program Design; Gray – Learning Method Support; and Orange – Other.

**Prioritization Matrix**

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# Cost/Value

## Actual Cost Breakdown

The pilot’s actual cost breakdown was as follows:

Exhibit 8. Pilot Cost Breakdown\*

| Cost Category | Actual Cost | Summary of Major Ways in Which Cost Was Incurred |
| --- | --- | --- |
| Labor Costs | $853,000 | These labor costs were incurred in the following ways:   * Agile learning design of 48 self-directed learning activities, including release scenario staging, online learning modules, readings and discussion board activities, blog assignments, and other application-oriented activities (e.g., live digital assignment activities, stakeholder analyses, written products that participants submitted for feedback). Designed activities using our agile learning approach, which included reviewing assessment data to determine learning needs and creating activities to address those needs. * Design and development of a scenario-based pre-assessment with 46 test items, five release assessments that each had 28 to 54 Level 1 and 2 test items, a topical self-assessment survey, a capstone skills assessment comprised of 28 scenario-based test items and a capstone presentation (live digital assignment) evaluation approach. In addition, the labor costs include analysis of all data, including the generation of IDPs and several report-outs to program participants on assessment results to aid in ongoing remediation activities. * Design, development, and delivery of 10.5 days of classroom training and 30+ webinars, representing 25+ hours of webinar time, as well as downloading each recorded webinar, posting to the portal, and creating transcripts for Section 508 compliance * Delivery of individualized feedback on program assignments and live digital assignments, and responses to discussion board posts and ongoing participant questions * Implementation and maintenance of an open source learning portal. Development of a custom video-based assessment system used to facilitate the Individual Development Plan and capstone exercise activities, implementation and maintenance of an open source survey system used to assess the course, and implementation and maintenance of an open-source badging system. * Program administration, including logistics, scheduling, and email communication with participants |
| Portal Maintenance/ Setup | $3,120 | These costs were incurred in the following ways:   * $400 per month for cloud services (over 7 months) * $20 for registering the domain name * $300 for purchasing the SSL certificate |
| Reproduction of Training Materials | $9,620.05 | Training materials were printed for all four classroom sessions, with the goal of keeping printed material to a minimum (i.e., we did not print large training binders). Generally, print materials for each session included a 20-page, stapled participant packet (color), up to 10 other handouts or activity aids, and a poster. Participants were given access to the electronic copies of the participant packet as well as other visual aids (i.e., PowerPoint) on the portal. |
| DiSC Assessment | $1,184 | Participants completed the DiSC assessment, which measures behavioral styles and tendencies, prior to the Release 4 classroom session. They received a custom report with their results that was then discussed in class and used as the basis for an activity. |
| Other Miscellaneous Costs | $146.06 | This amount includes costs associated with transportation, materials for day 3 of the orientation (agile training), and shipping. |

*\*Note that the Challenge requested documentation of equipment, facilities, and hardware costs. We incurred no costs in those areas, so they do not appear in the above table. In addition, we will also conduct a Level 3 evaluation; those costs are not reflected in the above table because they have not yet been incurred.*

## Pilot Execution and Value Delivered

### Pilot’s Projected Cost Compared to the Actual Cost Breakdown

Based upon our initial, Phase II program design, we estimated that the pilot would cost approximately $258,000 or $8,600 per participant, assuming a cohort of 30 participants. However, during Phase III, we adjusted several key assumptions upon which this estimate was made based on discussions with OMB and our evolving understanding of the cohort’s true learning needs and preferences:

* **Number of classroom days:** In Phase II, we estimated that orientation would be a half day, the Release 2 classroom session would be two days, the Release 4 classroom session would be two days, and the Release 6 classroom session would be one day. In other words, we estimated our costs assuming there would be a total of 5.5 classroom days. During Phase III, we worked with OMB to determine that 10.5 days of classroom training were needed in order to achieve the performance objectives and program outcomes. Specifically, we added more time to orientation to allow for additional in-depth training on agile (which we had originally proposed would be embedded in Release 1’s self-directed learning and accomplished via an agile “mini detail”) and to allow more time for guest speakers (i.e., USDS Administrator Mikey Dickerson and OMB Director Shaun Donovan) to attend. In addition, we lengthened the other classroom sessions to allow for additional in-person time, which participants reported finding valuable.
* **Low response rates on assessments:** Because we had low response rates on the assessment, we spent more time than anticipated communicating with participants on this topic and sending reminders. We also ran analyses on assessment data multiple times as we continued to receive additional responses over a time period longer than anticipated.
* **Addition of the topical self-assessment:** We created, administered, and analyzed the topical self-assessment at the end of the program that we did not originally plan to conduct.
* **Incoming level of expertise:** The incoming level of expertise of the cohort, as well as their ability to apply content on the job, was not what we expected. As a result, we developed more content than was expected. In addition, because the live digital assignment did not provide the application opportunities we expected, we had to change course and provide other application opportunities.
* **Video:** Per OMB’s request, we recorded video of several segments of the classroom training that we then shared on the portal. This required coordination with our video team, downloading of recorded files, uploading to YouTube, posting to the portal, and creating transcripts for Section 508 purposes.
* **EdX platform’s “out of the box” capabilities:** As discussed elsewhere in this report, edX is a powerful open source learning platform, but as with any open source tool, it does not have some of the built-in “bells and whistles” that a traditional learning management system might have around Individual Development Plans, analytics, badging, etc. As a result, we created custom elements that linked into edX to support this functionality.

However, given the nature of the program design, we expect that the next three to four deliveries of the program will cost approximately $359,863. In these deliveries, we anticipate developing some additional content and/or tweaking content developed as part of our agile learning design as well as tweaking any assessment items that are impacted. After three to four deliveries, we expect that the delivery cost will decrease since the previous content can be reused as instructional content or tweaked (rather than developed from scratch) for each subsequent delivery. As a result, fewer design hours for the responsive and customized parts of the program will be needed post-pilot, and there will be a reduced level of effort for the program facilitators. In addition, assessment costs were slightly higher in the pilot as our set of instruments and metrics were refined; these costs will decrease over time so long as the content remains stable and/or as a library of content and associated assessment items are developed that can be deployed depending on the learning needs of each cohort.

### How Quality Was Measured

During the program, we measured quality via our ongoing release assessments and participants’ performance on the capstone. We found that participants, on average, reported satisfaction with the quality of content and the utility of materials (both to their current and expected future acquisition roles). Approximately half of the participants reported seeing a noticeable difference in their behavior on-the-job as a function of what they learned. Participants also remarked that the content sequencing as well as our responsive design and adjustments given their learning needs contributed positively to their learning. Participants’ scores on the release assessments fell in the moderate to high range, which met program expectations; similarly, their performance on the capstone also met program expectations. Specifically, we measured quality in the following ways via the assessment tools:

* **Quality of content/usefulness of materials:** 
  + On the Releases 1-4 assessment, participants, on average, reported the following describe their experience to a **moderate extent**:
    - Information was applicable to work [[2]](#footnote-2)
    - Overall quality of materials and activities supported learning
    - Feel that work behaviors will improve
    - Was a worthwhile investment of time
    - Committed to applying what they have learned
  + On the Release 5 assessment, participants reported the same feedback about the “information was applicable to my work” statement describing their experience to a moderate extent. For the other statements, participants reported that the statements described their experiences to a **great extent**.
* **Responsiveness of design:** In total, the program included 176.25[[3]](#footnote-3) hours of instruction across all self-directed and guided learning components. Specifically, these segments were designed in the following ways:
  + Guided learning (webinars and classroom) comprised approximately 87 hours of that instruction or 49%. We developed approximately 80-90% of the instruction in these webinars and classroom sessions, on average, in response to participants’ learning needs and preferences.
  + Self-directed learning comprised approximately 89.25 hours of that instruction or 51%. Approximately 20% of the self-directed materials, on average, were designed in response to the cohort’s unique learning needs or adjusted to reflect policy changes.
  + In addition, we made the following adjustments, as highlighted elsewhere in this report:
    - Added a review week and provided participants with guidance on how to increase their understanding for their bottom 3 performance objectives in Releases 1-3.
    - Responded to participants’ feedback on the assessments to include additional open-ended questions in Release 5 where participants could comment on their answers to the Level 2 questions or provide feedback on the assessment items.
    - Revised the posting of activities on the platform to clearly mark whether the activity was core or elective in response to participant feedback about that not being clear, following by adjusting the core vs. elective distinction altogether.
    - Revised performance objectives for Releases 4 and 5 to better align with the learning needs of the participants and the program.
    - Flexibly adjusted the live digital assignment requirements when it became apparent that some groups did not have projects that fit neatly into the desired type and format.

Thus, as promised in the Phase II submission, approximately 60% of our instruction (i.e., the total instructional seat time) was fixed and 40% was responsive as part of our agile learning approach[[4]](#footnote-4).

* **Timeliness of materials:** We delivered self-directed instruction on the first Monday of every two-week iteration for the six months of the program. In addition, we developed and delivered 1-2 recorded webinars per week, on average; these webinars occurred on the first Monday of the iteration and Thursday of most weeks (excluding those weeks in which we had a classroom session). Of the 176.25 hours of instruction we developed, two online learnings (totaling one hour of instruction or 0.005% of the total instruction) had a delay in their release to participants. All other materials were delivered on time.

# Appendix A: Recommended Program Goals, Performance Objectives, Content, and Instructional Strategy Adjustments

**Program Goals**

We recommend the following adjustments to the program goals:

| Goal as Presented in the Challenge | Recommend Revision/Addition | Rationale |
| --- | --- | --- |
| Become certified digital services expert. | Become certified digital services acquisition business advisors who understand and procure digital services and supplies utilizing concepts such as those described in the Digital Services Playbook and the TechFAR, appropriately measure the success of these contracts based on industry standards, accurately describe and define value received, encourage the use of commercial practices and innovative approaches to ensure flexible procurements, build their personal brand as an ambassador for digital services, and understand how to effectively make contributions into digital services procurement processes. | See Recommendation 1.4: Revise program goals to reflect more of a knowledge, learning, and application focus; true expertise develops over a longer timeframe for a discussion of this revision and the time required to develop expertise. |
| Are equipped with the knowledge necessary to be imbedded within agency Digital Service teams to serve as a business advisor to the team, its customers, and its stakeholders. | No change recommended | N/A |
| Have the knowledge to lead agency training, workshops, and consultations in order to expand digital service procurement expertise within their agency and the government. | No change recommended | N/A |

## Performance Objectives, Content, and Instructional Strategy Adjustments

We recommend the following specific adjustments to the content and instructional strategies.

| **Program Segment** | **Terminal Performance Objective[[5]](#footnote-5)** | **Iteration** | **Recommended Revisions, Development Needs, and Rationale** |
| --- | --- | --- | --- |
| **Orientation** | N/A | N/A | * **Additional Content/Participant Packet:**   + Build overview guide for revised live digital assignment; provide time for participants to begin discussing challenges facing their agency that may benefit from an LDA project.   + Build selection guidance for shadowing assignment.   + Build guidance on how to effectively use the mentor throughout the program   + Introduce the concept of assessment and what participants will be evaluated on throughout the program – release assessments and Capstone. * **Length:** Orientation remains three days; however, the schedule should shift. The first day should be dedicated to program orientation (goals, IDP, expectations, requirements, scenarios), the second day to agile fundamentals, and the third to basic pre- and post-award agile contract considerations for COs. Introduce the SBA case that will be threaded throughout the program. * **Embedded Leading Change Content:** Explore the basics of what participants’ new role as digital service acquisition professionals looks like and how others’ roles also must shift. * **Assessment:** Include work styles assessment (such as color assessment) to encourage initial cohort bonding and to help participants understand how to collaborate effectively with their team members. |
| **Release 1: Digital Services in the 21st Century Government** | Describe digital services in the 21st century, including what they are, who provides them, how they are delivered, and why they are important. | 1.A: The Digital Services Professional | * Refine iteration enabling objectives to ensure support of the terminal performance objective. Build release scenario staging questions into the release assessment that is embedded throughout sessions and activities, where possible. * Build in content around "who's who" in the digital services arena, including public and private sector organizations, professional organizations, and thought leaders. |
| 1.B: The Digital Services Professional (continued) | * Refine iteration enabling objectives to ensure support of the terminal performance objective. Build release scenario staging questions into the release assessment that is embedded throughout sessions and activities, where possible. * Shift the focus of this iteration from the digital services market to continuing to familiarize participants with digital services terms and concepts. The name of this iteration shifts from “The Digital Services Market” to a continued study of 1.A: The Digital Services Professional. Refine iteration enabling objectives accordingly to ensure support of the terminal performance objective. * Assess and prioritize readings to ensure participants are introduced to timely, relevant resources focused on the full scope of digital services. In addition, emphasize that these resources are being provided not only because they are relevant articles but because they are published by organizations, entities, and thought leaders who participants can continue to follow on social media or reference in the future to stay up to date on the field. * Build in additional examples of XaaS and open source in government and why it is useful/helpful. Have participants watch USDS’ Alex Ose’s Q&A from the pilot on open source (Alex participated during the pilot’s review week that occurred after Release 4). * Make the connection between digital services and acquisition by creating short fact sheets that summarize the digital service, major players in the market, how the digital service is frequently procured, and questions that you should ask when considering a procurement. * Move the Digital Services Delivery Overview content/video from Release 5 to this release for initial exploration, as understanding how delivery works plays a large role in how an acquisition professional structures the solicitation that supports it. |
| ***Retrospective Week*** | N/A | N/A | * Use this week for participants to “catch up” on any assignments and/or review areas of weakness as identified by their assessment results. Program development team uses this week to review assessment results/feedback in preparation for the next release. * Conduct Release Retrospective based on release assessment data. |
| **Release 2: Understand What You Are Buying** | Determine the problem to be solved while effectively supporting and communicating with the customer. | 2.A: The Digital Services Market | * Instruction focused on the digital services marketplace (originally 1.B) moves here and blends with the pilot 2.A instruction. Refine iteration enabling objectives accordingly to ensure support of the terminal performance objective. Build release scenario staging questions into the release assessment that is embedded throughout sessions and activities, where possible. * Refine the online learning focused on responsible pre-solicitation communication to better illustrate the “why” behind this approach in the digital services arena and examples of how it can be done. * Develop an online learning on how to conduct effective market research in the rapidly evolving technological landscape including strategies and resources that can be accessed/leveraged. * Discuss definition of the need in terms of acquisition and how to develop a clear product vision. |
| 2.B: Understanding Your Need and the Agency Landscape | * Shift the focus of this iteration to zero in on understanding the need and agency landscape, rather than beginning to focus on the acquisition strategy (that instruction moves to Release 3). Refine iteration enabling objectives accordingly to ensure support of the terminal performance objective. Build release scenario staging questions into the release assessment that is embedded throughout sessions and activities, where possible. * Combine the pilot Release 2 and Release 4 stakeholder analysis activity; have participants focus in on their own agencies (rather than agency involved with live digital assignment as we partially did in the pilot). Include a required interview with agency CIO and SPE as part of this analysis. As part of the activity, suggest that participants can leverage a modern design and development technique by creating stakeholder “personas” based on their interviews. * Expand focus on what is meant by needs, requirements, and outcomes, as it relates to creating a product vision. * **Embedded Leading Change Content:**    + Move the agency change and readiness assessment to this release (instead of Release 4) so that it can be completed as an output from the stakeholder analysis.   + Move the Using Your Influence to Affect Positive Change online learning here to be explored as part of the stakeholder analysis.   + Move the Preparing for and Having an Influence Conversation online learning here to be explored as part of the influence conversations participants will need to have when crafting the acquisition strategy. * **Classroom-specific revisions:**    + Continue to bring in the SBA guest speakers and explore the SBA case.   + Include a team-based scenario activity on market research using the threaded case. Participants complete this activity in the classroom.   + Introduce the market research component of the threaded scenario that participants will practice exploring individually during the Retrospective Week and review during the first week of Release 3.   + Acqu-a-thon #1 will ideally occur during this release. |
| ***Retrospective Week*** | N/A | N/A | * Use this week for participants to “catch up” on any assignments and/or review areas of weakness as identified by their assessment results. Program development team uses this week to review assessment results/feedback in preparation for the next release. * Conduct Release Retrospective based on release assessment data. |
| **Release 3: How Do You Buy?** | Effectively use techniques for acquiring digital service solutions in your solicitation or acquisition strategy. | Iteration 3.A: Developing the Acquisition Strategy | * Shift instruction to focus explicitly on the acquisition strategy (we partially focused on this content in 2.B in the pilot and some in 3.A but did not spend significant time on it). Refine iteration enabling objectives accordingly to ensure support of the terminal performance objective. Build release scenario staging questions into the release assessment that is embedded throughout sessions and activities, where possible. * Expand focus on what a digital services acquisition strategy could/should include by creating an online learning overview and providing examples for participants to review and analyze (building off of the example provided by USDS in the pilot). This will serve as an introduction that will then allow participants to practice creating components of an acquisition strategy in Release 3. |
| Iteration 3.B: Acquiring Digital Services | * Same as above. * Move Preparing to Buy: The Solicitation online learning from 3.A to 3.B. * Move basics from the pilot Release 5 evaluation content and basic scenarios to this release. * Classroom-specific revisions (see discussion of Release 4 adjustment below; original Release 4 classroom would now occur at the end of Release 3). *Note that this means that the first classroom session occurs approximately 2.5 months into the program and the second classroom session occurs about 3.5 months into the program.* * Remove the DiSC assessment discussion but retain the focus on how work styles impact your role in influence conversations as part of the influence role plays. * Include a team-based scenario activity around developing an acquisition strategy and writing an SOO using the threaded case. Participants complete this activity in the classroom. * Introduce the threaded acquisition strategy and SOO activity that participants will practice during the Retrospective week and the first week of Release 4. * Invite SBA team to talk specifically about how they led change and used influence tactics. In addition, ask them to delve into source selection and then have participants practice analyzing how they approached it, followed by SBA team members sharing the actual approach they took. * Invite vendors to share their perspective on responding to solicitations, either those on the SBA contract or others. * Create an activity around the Pricing for Agile concept, in addition to having a USDS presentation about the topic. * Acqu-a-thon #2 will ideally occur during this release. |
| ***Retrospective Week*** | N/A | N/A | * Use this week for participants to “catch up” on any assignments and/or review areas of weakness as identified by their assessment results. Program development team uses this week to review assessment results/feedback in preparation for the next release. * Conduct Release Retrospective based on release assessment data. |
| ***Release 4: Leading Change in Federal Contracting*** | *Apply techniques to create a culture of innovation within your sphere that enables you and others to effectively lead and influence customers to the best solutions.* | *Iteration 4.A: Change - Are You and Your Agency Ready?*  *Iteration 4.B: Exploring Your Role as an Ambassador for Change* | See suggestions labeled “Embedded Leading Change Content” in other iterations. We recommend weaving in the leading change content throughout the program given how foundational it is to the success of the technical initiatives. Currently, we segment the Release 4 change content in one release, which may send an implicit message that it only needs to be applied there and is siloed; in reality, the behavioral concepts taught within it need to be used by participants in order to implement and achieve the program outcomes. We recommend including a change ambassador/innovation component to each iteration, in addition to a focus on resources to support participants as lifelong learners and ways to build their personal brand/establish themselves as leaders in the profession. |
| **Release 4 (formerly 5): Administering Digital Services Contracts** | Evaluate vendors who deliver digital services using instantaneous, objective metrics on project health, developed via appropriately applied lean thinking and agile development methods while experimenting with flexible contract design and administration strategies. | Iteration 4.A: Digital Services Delivery (or How Solutions Get Done) | * Refine iteration enabling objectives to ensure support of the terminal performance objective. * Potentially explore source selection in the digital services environment, building off of the evaluation criteria activity from Release 3. Refine pilot activity where we asked participants to evaluate submitted prototypes from the 18F Agile BPA competition; use the threaded scenarios to explore source selection/evaluation in more detail (SBA, team scenario, and individual scenario), to include interaction with the technical team and the CO’s role in this process. * Expand pilot Administering Agile Contracts self-directed activity to include additional examples and artifacts. * Create an online learning overview on the value of metrics and how to monitor contracts using metrics. * Have an SBA vendor or another vendor from a digital services contract participate in guided learning session (similar to what occurred in the pilot when a vendor attended the Release 6 classroom session). |
| Iteration 4.B: Innovative and Flexible Digital Services Contracts | * Review release content for innovative contracting examples (e.g., White House Innovative Contracting Case Studies) that focus on “show vs. tell”; provide more information on innovative contracting solutions available to government COs when procuring digital services, like challenges, value of oral presentations, and prototypes. * Include a guest speaker on his/her experience setting up and executing an innovative contract. * Leading Change Content: Move the Blogging on Acquisition Innovation to this iteration. |
| ***Retrospective Week*** | N/A | N/A | * Use this week for participants to “catch up” on any assignments and/or review areas of weakness as identified by their assessment results. Program development team uses this week to review assessment results/feedback in preparation for the next release. * Conduct Release Retrospective based on release assessment data. |
| **Release 5 (formerly Release 6): Moving into Beta** | Determine the next steps in your digital services acquisition learning journey by integrating and reflecting on lessons learned throughout the program. | N/A | Classroom-specific revisions:   * Retain the agile metrics activity but include experts at each group who can answer questions for the participants in real-time as they work through the scenarios. * Have vendors who are currently delivering digital services to the government attend. Acqu-a-thon #3 will ideally occur during this release. |

# Appendix B: Summary of Assessment Approach and Results

## Assessment Approach

The ICF-ASI team designed the program’s assessment strategy to accomplish three objectives. First, assessments measured the extent of participant mastery of key performance objectives and the application of digital acquisition concepts to real-world situations and to the live digital assignment. Second, assessments provided feedback to influence how content development and instructional strategies manifested throughout the program. Third, assessments provide information to demonstrate program value and impacts. Assessments occurred at the beginning of the program (i.e., pre-assessment/IDP), within each Release (i.e., release- assessments), and at the conclusion of the program (i.e., Capstone Skills Test and Live Digital Assignment).

The program began with a pre-assessment, a situational judgement test that addressed key concepts for each of five releases[[6]](#footnote-6). Release-specific performance objectives guided the selection of concepts or subject matter for inclusion in the test. Participants viewed a series of animated, real-world digital service acquisition scenarios relevant to performance objectives from each of five release content modules, followed by various multiple-choice questions. Based on each participant’s responses, program staff generated a customized individual development plan (IDP) for each participant. This customized IDP identified core and elective sessions and activities recommended for each participant, to guide subsequent prioritization of activities.

At the end of each release, participants completed a knowledge-focused release assessment and reaction survey. Not only did these release assessments document participant knowledge of release-specific performance objectives, participants reported various program experiences and evaluations including time spent, relevancy of content, extent to which expectations were met, and opportunities to apply learning immediately on-the-job. The release assessments yielded real-time data to inform ongoing program refinement, while also serving as a signal for participants regarding what is important for achieving desired on-the-job outcomes.

At the close of the program, participants accomplished two activities that were combined to create their overall Capstone score. First, participants completed a Capstone Skills Test, a situational judgement test (similar in format to the pre-assessment) that presented animated real-world scenarios each followed by approximately four multiple choice questions. In contrast to the pre-assessment, where each scenario was only relevant to performance objectives from one release, each Capstone skills test scenario contained integrated content relevant to performance objectives spanning multiple releases (i.e., each scenario tapped content from multiple releases in a synthesized manner). Thus, this activity tested participants’ aggregated knowledge acquired throughout the program.

## Data Limitations

The findings addressed in this section align with the progression of assessment activities throughout the program from pre-assessment to the Capstone. Before we present our findings, it is important to highlight the number of participants in each assessment activity (see chart below). As we only had a maximum of 28 pilot participants possible for each assessment, anything substantially less than 100% participation caused us to be constrained by small sample sizes. Typically, when conducting pilot administrations of tests for training program assessments, a response rate of greater than 75% is desired to facilitate reliable and high-quality data to inform test refinement. For three of the assessments, we had lower than 60% participation. Thus, we must caution the inspection and interpretation of results solely from the pilot. Further use of these assessments in subsequent program administrations is warranted before drawing firm conclusions about results such as quality or difficulty level of test items. Furthermore, with small sample sizes, it is difficult to find significant relationships from the data, for statistical tests require a larger sample size to ensure the sample is an adequate representation of the population. Our inspection of relationships summarized in this report must be interpreted with caution, for when reviewing relationships found in the pilot data (such as between assessment scores and learning activity participation), we must consider that the addition of even one for two extra participants to the data set could modify the existing relationships.

|  |  |
| --- | --- |
|  | Number of Participants |
| Pre-Assessment | 28 |
| Release 1 Assessment | 18\* |
| Release 2 Assessment | 13 |
| Release 3 Assessment | 23 |
| Release 4 Assessment | 17 |
| Release 5 Assessment | 11 |
| Capstone Skills Test | 28 |
| Capstone Live Digital Assignment | 28 |

\*Three months after this assessment was analyzed, participation increased to 26.

## Assessment Results

**Pre-Assessment**: 27 individuals (90% response rate) participated in the Pre-Assessment, with an average score of 69% correct. Scores ranged from a low of 50% to a high of 85%. Each scenario and question in the Pre-Assessment covered specific performance objectives within a given Release content area. Thus, review of each participants’ pre-assessment helped to structure the recommended learning activities that comprised the participant’s Individual Development Plan (IDP).

**Release-Specific Assessment Results (Level 2 Knowledge Acquisition):** Each Release-Specific Assessment contained a set of questions about participants’ perceptions of their learning experiences and feedback about the program content, technology, and delivery/instructional strategies (i.e., Level 1), as well as a set of questions evaluating participants’ knowledge of topics and concepts covered during that Release (i.e., Level 2). In this section, we will review the knowledge assessment results; in other sections of this report we discuss learning experience results as they relate to other findings and recommendations for enhancement following the pilot.

Release 1 Assessment: 18 individuals (60% response rate) participated in the Release 1 Assessment, with an average score of 70% correct. Scores ranged from a low of 53% to a high of 88%. Participants performed best on Performance Objective 3 (Illustrate the available sources of supply for digital services) questions, and participants performed poorest on Performance Objectives 5 (Determine which digital services concepts are applicable to a given customer need) and 1 (Summarize the current state of digital services in 21st century government). It is worth noting that only about 3 of the 18 participants indicated that they were moderately familiar with all of the key digital service terms that were provided in Question 24.

Release 2 Assessment: 12 individuals (60% response rate) participated in the Release 2 Assessment, with an average score of 63% correct. Scores ranged from a low of 43% to a high of 83%. Participants performed best on Performance Objective 7 (Demonstrate how to structure procurements that deliver outcomes) followed by Performance Objective 2 (Understand needed time to market), while participants performed poorest on Performance Objective 5 (Develop requirements for digital services).

Release 3 Assessment: 23 individuals (67% response rate) participated in the Release 3 Assessment, with an average score of 70% correct. Scores ranged from a low of 50% to a high of 94%. Participants performed best on Performance Objective 7 (Apply guidance and best practices to address challenges), followed by Performance Objective 5 (Summarize the lessons of the Digital Services Playbook, TechFAR, and other emerging guidance). Participants performed poorest on Performance Objective 1 (Analyze a digital service need to determine the most appropriate acquisition solution).

Release 4 Assessment: 17 individuals (57% response rate) participated in the Release 4 Assessment, with an average score of 67% correct. Scores ranged from a low of 47% to a high of 88%. Participants performed best on Performance Objective 1 (Illustrate your new role as a digital service acquisition professional), followed by Performance Objective 4 (Assess your preferences, styles, and strengths to determine how you can best contribute to change within your agency). Participants performed poorest on Performance Objectives 9 (Share examples of acquisition innovation) and 10 (Living the Ambassador Role: Create a plan for how you will promote change within your agency).

Release 5 Assessment: 9 individuals (30% response rate) participated in the Release 5 Assessment, with an average score of 75% correct. Scores ranged from a low of 44% to a high of 100%. Participants performed best on Performance Objective 7 (Evaluate how decisions about solicitation elements will impact delivery under contract), followed by Performance Objective 6 (Evaluate project health given provided metrics). Participants performed poorest on Performance Objectives 1 (Identify high-level principles of agile development that make it effective) and 9 (Implement evaluation methods and criteria to evaluate vendor maturity and ability to deliver a product that solves a given need (Note this was only one question)).

**Topical Self-Assessment Survey Results:** 19 individuals (63% response rate) participated in the Topical Self-Assessment Survey, administered before Release 6. 100% of respondents indicated they are aware of all of the topics. The majority of respondents indicated they can describe most of the key topics. In terms of individuals’ self-reported ability to “act” and “teach” the topics, most participants did not indicate they were comfortable with those behaviors at this time in the program.

**Capstone Results:** The Capstone was comprised of two parts, the Skills Test (situational judgement test) and the Live Digital Assignment. The total Capstone score was 100 points, and the components were weighted 40% for the Skills Test and 60% for the Live Digital Assignment. The Skills Test score was multiplied by 1.482 to achieve a total potential score of 40 points, and the Live Digital Assignment score was multiplied by 5 to achieve a total potential score of 60 points. Weighted scores for each component were summed to calculate the total Capstone score, and total possible Capstone scores could range from 20 to 100. 28 individuals (93% response rate) participated in the Capstone Skills Test, with an average score of 80% correct. Scores ranged from a low of 41% to a high of 93%. Similarly, 28 individuals (93% response rate) participated in the Live Digital Assignment presentations, and received self-assessment, peer evaluations, and faculty/observer evaluations. The average score on the Live Digital Assignment was 85% and scores ranged from a low of 44% to a high of 100%.

# Appendix C: Assessment Protocol – Post-Program Impact Assessment

A post-program impact assessment can measure sustained behavioral change and program impacts to demonstrate the value of the program and contribute to program sustainability. As the pilot cohort gains experience applying what they learned on-the-job, measuring what’s working and what is more difficult to change will permit the program to be more adeptly tailored and therefore utilize high value training investments. Thus, the overall goal of the post-program assessment is to demonstrate overall program impact and value to the organization, its customers, and stakeholders.

A combination of interview, survey and secondary data review can provide a robust understanding of these impacts. Interview protocols, survey instruments and secondary data request artifacts are designed to collect information on key procurement success metrics. Data will also be collected on those organizational outcomes expected to arise as a result of program participation, and the indicators at the unit or organizational levels that convey an organization is using desired procurement behaviors. Questions and secondary data review protocols can also assess the extent to which an organization is strengthening its Federal digital services acquisition expertise, as well as the extent to which an organization has professionals who can balance digital services best practices with the principles of public procurement.

The assessment design includes three time periods for data collection, at the 4-month, 4.5-month, and 6-month post-program points in time. The chart below summarizes planned activities for the post-program assessment, detailing what variables are to be measured, what data collection methods are to be used, what time period to conduct that assessment activity, and who will be sampled.

| **Measuring Program-Level Impacts** | | | |
| --- | --- | --- | --- |
| **What** | **How** | **When** | **Who** |
| Post-Pilot Sustained Behavioral Change and Application (L3)  Includes:   * Traditional measures (e.g., training referrals, engagement with digital services acquisition community, confidence) * Reports of ideal contracting staff in agency with digital services focus * Reports of forecasted digital services spending given agency needs * Demographics on agency (size, types of business services) * Behavioral items to assess extent to which target actions are manifested | Survey to assess application, including the same set of behavioral items presented to participants and their supervisors | 4-month post-pilot | Participants, Supervisors |
| Post-Pilot Sustained Behavioral Change and Application (L3) | Success case interview for two purposes:   1. to discuss survey results interpretation 2. to collect examples of application and factors (either within training or in the on-the-job environment) that facilitated application | 4.5-month post-pilot | Participants |
| Procurement Success Metrics (L4)  Including:   * Existence of strategic plans that address digital services procurement * Policies changed to reflect adoption of digital services techniques * Number of people attending agile or digital service training * Number of digital service experts hired by the organization * Presence at conferences, panels, publications * Agency involvement in continuing digital services education, keeping pace with evolving technology knowledge * Adoption of agile procurement methods (applying practices to spend money more wisely) * Examples of adjusting procurement methods (e.g., cancelling waterfall method) * Existence of procedures for routinely connecting with end-user customers * Time to market (reduction of time for acquisition to be conducted) at multiple levels based on complexity * Acquisition timelines (from procurement to MVP delivered) * Cost * Value * Success with digital services programs * Estimated resources saved | Individual requests of pilot participants to collect and inspect procurement success metrics, at the unit/department/agency level | 6-month post-pilot | Program Staff  Participants  Secondary Data Sources |

Analyzing all quantitative and qualitative results will yield a comprehensive picture of how program participants are acting in their respective organizations and within their respective roles, as well as the cumulative impacts on the growing digital services acquisition community. Results can benefit program staff by informing program content and delivery evolution, can benefit stakeholders who have a vested interest in the success of digital services acquisition, and can serve as reinforcement and “course correction” guidance for program alumni and current program participants.

1. Percentages for the activity types are based on the percent of participants who completed each activity included in question 1 across the Release Assessments. Activities were grouped based on how they were listed in the portal. There were a total of 4 Release Scenario Staging assessments, 12 Guided Learnings, 7 Live Digital Assignment Activities, 13 online learnings, 2 case studies, 5 assessments, 48 readings and 2 blogging activities included in question 1 of the Release Assessments. Guided learnings (i.e., the iteration A and B planning meetings and the iteration A retrospective meetings) were not included in the Release 1 assessment. Therefore, this data represents a sampling of the total sessions and activities developed and facilitated as a part of the pilot. [↑](#footnote-ref-1)
2. Across the Releases, only 60% of the participants reported being in a job where they could immediately apply what they had learned. The percent was the lowest for Release 5 with only 36% being able to immediately apply their learning, while the percent was the highest for Release 4 at 82%. [↑](#footnote-ref-2)
3. The total instructional hours were calculated by summing the instructional seat time estimates for each activity, as documented in the portal and in iteration kickoff emails sent to participants. In cases where a seat time estimate range was provided, we defaulted to the higher end of the range in making this calculation. In addition, for the purposes of this calculation, we assumed that all Iteration Planning Meetings were 30 minutes, and all Office Hours and Iteration Retrospectives were one hour in duration, even though there was some variation across the program in actual length of these sessions. For the classroom, we assumed one classroom day was equivalent to seven instructional hours. [↑](#footnote-ref-3)
4. To calculate these percentages, we took the instructional seat time of each individual learning activity multiplied by the responsiveness percent (20% for self-directed activities and 80-90% for guided learning, with the percent responsiveness increasing as the program progressed and we had more participant feedback to use in guiding our decisions). The resulting product was the amount of seat time that was responsive for each activity. We then totaled these by-activity estimates together to determine the overall program seat time that was responsiveness. Finally, we divided this number by the total instructional seat time (176.25) to calculate the overall percentage of responsive instruction. [↑](#footnote-ref-4)
5. The release terminal performance objectives have not changed from those used in the pilot. They are included here for quick reference. [↑](#footnote-ref-5)
6. The pre-assessment did not include content from Release 6 because at the time, the pilot program was still finalizing performance objectives for Release 6. [↑](#footnote-ref-6)