United States Government Accountability Office

Report to Congressional Requesters

March 2014

OFFICE OF PERSONNEL MANAGEMENT

Agency Needs to Improve Outcome Measures to Demonstrate the Value of Its Innovation Lab

GAO-14-306

GAO Highlights

Highlights of GAO-14-306, a report to congressional requesters

March 2014

OFFICE OF PERSONNEL MANAGEMENT

Agency Needs to Improve Outcome Measures to Demonstrate the Value of Its Innovation Lab

Why GAO Did This Study

Organizations from around the globe are emphasizing that strategies promoting innovation are vital to solving complex problems. To try to instill a culture of innovation in its agency, OPM followed the lead of a number of private sector companies, nonprofit organizations, and government bodies by creating an innovation lab. GAO was asked to examine the lab.

Specifically, GAO 1) described the lab's start-up costs, staffing and organization, activities, and policies governing the lab's use, and 2) assessed how OPM's innovation lab compares to other organizations' innovation labs, including how it uses benchmarks and metrics and how it addresses challenges to innovation. GAO reviewed cost, staffing, and performance information. GAO also reviewed relevant literature on innovation and interviewed officials from public, private, and nonprofit organizations with innovation facilities similar to OPM's lab.

What GAO Recommends

Among other things, GAO recommends that the Director of OPM should direct lab staff to 1) develop a mix of performance targets and measures to help them monitor and report on progress toward lab goals, and 2) build on existing efforts to share information with other agencies that have innovation labs. OPM generally concurred with GAO's recommendations; in addition, they described the steps being taken and planned to refine their ongoing evaluation efforts and to further leverage other federal innovation labs.

View GAO-14-306. For more information, contact Seto J. Bagdoyan at (202) 512-4749 or bagdoyans@gao.gov.

What GAO Found

In March 2012, the Office of Personnel Management (OPM) opened its innovation lab, a distinct physical space with a set of policies for engaging people and using technology in problem solving. The goals of OPM's innovation lab are to provide federal workers with 21st century skills in design-led innovation, such as intelligent risk-taking to develop new services, products, and processes. OPM's lab was built at a reported cost of $1.1 million, including facility upgrades and construction, equipment and training, and other personnel costs. The lab employs approximately 6 full-time equivalents, including a director, and in fiscal year 2013, the lab's operating costs were approximately $476,000, including salaries.

View of OPM's Innovation Lab

Source: OPM.

OPM's innovation lab is similar in mission and design to other innovation labs GAO reviewed, and OPM has incorporated some of the prevalent practices that other labs use to sustain their operations. Specifically, OPM is using its lab for a variety of projects, including as a classroom for building the capacity to innovate in the federal government. Lab staff indicated that they plan to begin long-term immersion projects—complex projects with diverse users—within a few months. OPM plans to develop and implement evaluation plans specific to each immersion project that will help them track cost benefits or performance improvement benefits associated with the projects.

Starting in March 2013, OPM lab staff began work on a program evaluation framework to more systematically measure the lab's progress toward meeting its overarching goals. In addition, lab staff members are tracking lab activities, such as classes and workshops, and are surveying lab users about the quality of their experience in the lab. However, they have not developed performance targets or measures related to project outcomes, and without a rigorous evaluation framework that can help OPM track the lab's performance, it will be hard to demonstrate that the lab is operating as originally envisioned.

While labs provide a physical space where innovators can convene, federal agencies are not fully aware of their growing community. However, OPM is taking steps to ensure work done in the lab is shared across OPM and with other federal innovators—for example, by hosting weekly training sessions in the lab on best practices. Studies show that information sharing and interorganizational networks can be a powerful driver supporting innovation.

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Abbreviations

CAT	Center for Applied Technology
Census	U.S. Census Bureau
CFPB	Consumer Financial Protection Bureau
FCAT	Fidelity Center for Applied Technology
FDA	Food and Drug Administration
FTE	Full-time equivalent
GSA	General Services Administration
HUD	Housing and Urban Development
KSC	Kennedy Space Center
NASA	National Aeronautics and Space Administration
NERD	New England Research and Development
OPM	Office of Personnel Management
STEM	Science, technology, engineering, and mathematics
TACSI	Australian Center for Social Innovation

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March 31, 2014

The Honorable Darrell Issa
Chairman
Committee on Oversight and Government Reform
House of Representatives

The Honorable Blake Farenthold
Chairman
Subcommittee on Federal Workforce, U.S. Postal Service and the Census
Committee on Oversight and Government Reform
House of Representatives

Organizations from around the globe are emphasizing that strategies promoting innovation are vital to solving complex problems and that future growth will increasingly depend on productivity-raising innovation.[1] To try to instill a culture of innovation in its agency, in March 2012, the Office of Personnel Management (OPM) followed the lead of a number of private sector companies, nonprofit organizations, and U.S. and foreign government bodies and created an innovation lab. An innovation lab is generally defined as a distinct physical space with a set of policies for engaging people and using technology in problem solving. OPM's lab, located in the sub-basement of its Washington, D.C. headquarters, uses a problem-solving approach called "human-centered design," which is described as the discipline of generating concrete solutions and ideas driven by the needs, behaviors, and context of the people for whom they are designed. This approach also uses iterative testing of new services, products, and processes and is intended to encourage faster learning at the front end of the design process rather than large, expensive failures upon implementation.[2] The premise behind OPM's lab was that the new space and a new approach to problem solving would support efforts to

[1]The top 1,000 global innovation companies, including Intel, Microsoft, Samsung, and Volkswagen, spent an estimated $638 billion in 2013 on their research and development activities, a key input driving innovation. See Barry Jaruzelski, John Loehr, and Richard Holman, "The 2013 Global Innovation 1000 Study: Navigating the Digital Future," *Booz & Company*, Issue 73 (New York, New York: Booz and Company Inc., Winter 2013).

[2]An iterative process arrives at a decision or a desired result by repeating rounds of analysis or a cycle of operations. The objective is to bring the decision or result closer to the desired outcome with each repetition.

address some complex issues and eventually lead to a more innovative agency culture.

You requested that we review OPM's innovation lab. This report (1) describes the OPM innovation lab's start-up and operating costs, staffing and organization, activities, and policies governing the lab's use, and (2) assesses how OPM's innovation lab compares to other organizations' innovation labs, including how it uses benchmarks and associated metrics and how it addresses potential challenges to innovation.

To address our first objective, we reviewed documentation on OPM's start-up and operating costs, staffing, and policies regarding the lab and interviewed OPM staff overseeing the lab and its activities. To address the second objective, we conducted a comprehensive literature search—including research conducted by global consulting firms and academic institutions—and interviewed representatives familiar with innovation facilities. We reviewed documentation and interviewed officials from the U.S. Census Bureau (Census), the Department of Housing and Urban Development (HUD), and the National Aeronautics and Space Administration (NASA) innovation labs. In addition, we met with an official from the Consumer Financial Protection Bureau (CFPB). While CFPB lacks a dedicated innovation lab, the agency has a reputation among federal agencies as a leader in innovative website development. We also interviewed representatives from other government, private sector, and nonprofit organization innovation facilities, such as Denmark's MindLab, the Fidelity Center for Applied Technology, and UNICEF's innovation labs.[3] To select organizations for comparison, we identified those with innovation facilities similar to OPM's lab, including those with a dedicated physical space and using similar problem-solving methods. We examined documentation and interviewed OPM lab staff regarding identifying any outcomes—such as cost reductions, performance improvements, or other results from projects—undertaken by the lab since its inception. We also conducted a detailed literature search to identify benchmarks and associated metrics applicable to the development and use of innovation facilities in the public and private sectors. Based on our literature search, we identified common challenges that can hamper organizations' efforts to use labs as innovation vehicles and prevalent practices that can support labs' success and sustainability. In addition, we reviewed our

[3]See figure 2 for a complete list of the innovation labs we surveyed.

interview records to identify commonly recurring challenges and prevalent practices that can support labs' success and sustainability. We verified that the challenges and prevalent practices we identified during our literature search were also those more often cited during the interviews.

We conducted this performance audit from July 2013 to March 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. More detailed information on our scope and methodology appears in appendix I.

Background

Innovation is a dynamic process through which problems and challenges are defined, new and creative ideas are developed, and new solutions are selected and implemented.[4] It is also a complex process that involves taking iterative steps to solve problems. Innovation requires an environment that encourages participants to challenge traditional practices without fear of repercussions. Ideally, innovation participants are empowered to be creative and make mistakes, and appropriate risk-taking is not only tolerated but encouraged.

Some federal leaders are trying various innovation tools, including on-line idea submission programs, competitions, and prizes, as ways of unleashing employee creativity. For example, in a memorandum issued in March 2010, the administration urged federal agencies to use challenges and prizes to crowdsource[5] innovative approaches to government initiatives and programs.[6] At relatively low costs, crowdsourcing initiatives can garner valuable and creative solutions that may not have come through traditional means. As another example, the Presidential

[4]OPM defines innovation as the process of improving, adapting, or developing a product, system, or service to deliver better results.

[5]Crowdsourcing is the practice of obtaining needed services, ideas, or content by soliciting contributions from a large group of people—especially from the online community—rather than from traditional employees or suppliers.

[6]Office of Management and Budget, *Guidance on the Use of Challenges and Prizes to Promote Open Government,* OMB Memorandum M-10-11 (Washington, D.C.: 2010).

Innovation Fellows program pairs top innovators from the private sector, nonprofit organizations, and academia with top innovators in government to collaborate during focused six- to thirteen-month periods. The program aims to develop solutions that can save lives, save taxpayer money, and fuel job creation. For example, the goal of one of the program's projects is to identify information critical to saving lives and mitigating damage in a disaster.

Even with the efforts of some federal leaders to encourage innovation, federal government-wide scores tracking how agencies foster and reward employee innovation dropped in 2013 for the second year in a row. OPM's 2013 Federal Employee Viewpoint Survey, released in November 2013, found that only 35 percent of federal workers believe that creativity and innovation are rewarded, with positive responses in this area showing a steady decline of six percentage points over the past three years. Research suggests that half of all innovations are not initiated by organizational leaders. Instead, research shows that it is important to have processes for gathering stakeholders' and front-line workers' views to identify areas for possible improvement.[7]

As an innovation tool, labs are based on the idea that the competencies needed for systematic innovation—such as intelligent risk-taking to develop new services, products and processes—are not the same as those required for daily operations. Innovation labs seek to provide approaches, skills, models, and tools beyond those that most employees are trained in and use to do their work. In addition, public sector innovation labs can be viewed as attempts to create an organizational response to a range of challenges to innovation, as innovation efforts face unique obstacles in the public sector. For example, funding for new public ventures is limited, and the risks of innovation are high in government. A defining characteristic of the public sector is that it is subject to broad scrutiny, so that when an innovation fails or is less than a complete success, there is the prospect of political consequences.

With constrained budgets expected to continue into the foreseeable future, innovation in our public services is a necessity. In the last decade, many public sector organizations around the globe have set up facilities

[7]Geoff Mulgan and David Albury, *Innovation in the Public Sector*, Ver.1.9 (London, England: Strategy Unit, October 2003) p. 13.

with the explicit purpose of supporting innovation efforts. For example, Denmark's MindLab, started in 2002, is a cross-governmental innovation unit that is part of the country's Ministry of Business and Growth, the Ministry of Education, the Ministry of Employment, and Odense Municipality, and which collaborates with the Ministry for Economic Affairs and the Interior. The group covers broad policy areas including areas such as entrepreneurship, digital self-service, education, and employment. OPM's lab was modeled, in part, on Denmark's MindLab.

OPM officials, consistent with other innovation lab representatives we interviewed, maintained that, unlike a typical conference room, innovation labs can be easily reconfigured for large groups and smaller breakout sessions. They allow users to write on walls and preserve visual artifacts more easily than typical cubicles and traditional office space. This can be done with very low-tech tools such as markers and a whiteboard. Figure 1 shows a view of OPM's lab.

Figure 1: OPM's Lab

Source: OPM.

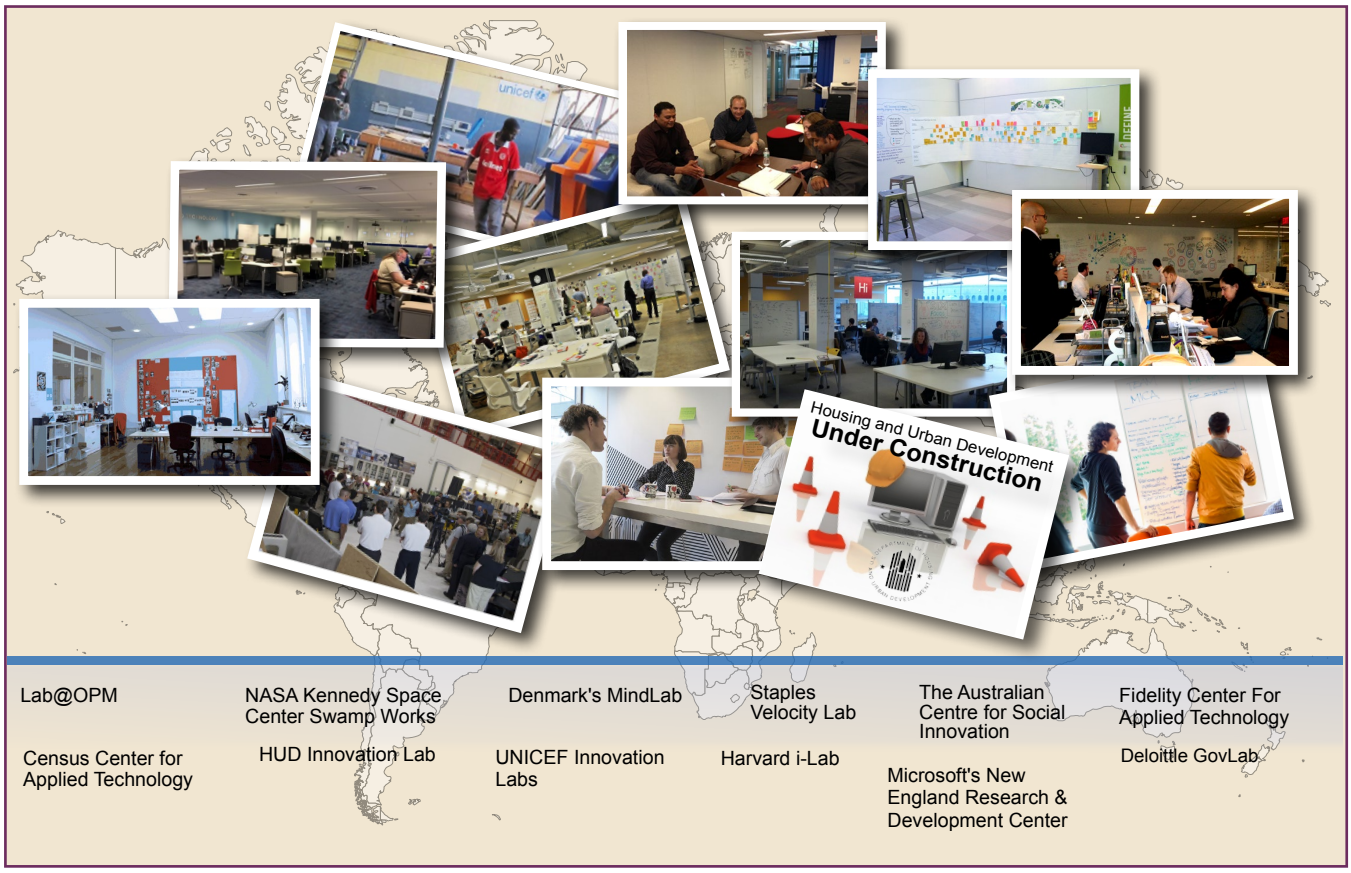
Organizations with different missions are pursuing a lab-based strategy to foster innovation. For example, organizations—including OPM—use their labs as a space where participants can conceptualize and prototype new products or processes outside their normal environment. Many also use their labs as a teaching space where participants can exchange ideas and information through classes, workshops, presentations, or other events. Figure 2 shows how innovation labs we surveyed from the public, private, and nonprofit sectors share common design elements, and how these different organizations generally use their labs for multiple and similar purposes.

Interactive graphic

Figure 2: Innovation Labs Share Similar Design Elements and Problem-Solving Methods

Directions:

CLICK each lab organization's PHOTO to see more information regarding how labs are used then CLICK the highlighted NAME to close.



Sources: GAO analysis of lab documents and interviews with lab representatives. Photos provided by lab representatives; photo of Harvard i-lab taken by Neal Doyle, photo of MindLab taken by MindLab staff, photo of Microsoft New England Research & Development (NERD) Center taken by Dana J. Quigley Photography, photo of the Australian Center for Social Innovation Lab taken by Margaret Frazer, and photo of UNICEF Innovation Lab in Uganda taken by UNICEF CC/A/SA.

Print instructions | To print text version of this graphic, go to appendix II.

OPM Lab Activities Are Intended to Build Capacity for Innovation and Support Project-Based Problem Solving

Based on OPM documents, the innovation lab's start-up costs totaled approximately $1.1 million including facility upgrades and construction, equipment, and training and other personnel costs. (See table 1 for a breakdown of costs.) In building the lab, OPM worked with the General Services Administration (GSA) and contracted with both design and architectural firms to renovate a former storage room in the sub-basement of its headquarters building.[8] The 3,000 square foot renovated space presents an open layout with a meeting area for up to two dozen people and is surrounded by breakout areas and team rooms. The physical renovation of the facility was completed in March 2012, after the installation of final technology equipment, asbestos abatement, and enhancements to ventilation and life-safety systems. According to OPM, to make the space useful for any purpose, much of the funding for the improvements and construction of the space would have been required.

Table 1: Breakdown of OPM's Lab Start-Up Costs (Fiscal Year 2012)

Item	Cost
Facility upgrade/space construction (includes asbestos abatement, etc.)	$428,226[a]
Concept design/construction/furniture	299,712[a]
Project fee paid to GSA	25,315
Equipment/information technology	247,867
Travel	14,533
Training	75,000
Salaries and benefits	30,000
Supplies	14,410
Total	**$1,135,063**

Source: OPM.

[a]GSA funded $457,820 of the total of these start-up costs.

[8]OPM leases its entire headquarters building and pays GSA at a rate based on square footage.

OPM officials said that in fiscal year 2013, the lab's total operating budget, including all contracting costs, was $476,000, which supported a build up to 5.5 full-time equivalent (FTE) employees over the last seven months of fiscal year 2013.[9] Officials expect this amount will remain stable in the coming fiscal years, proportional to a full fiscal year.

OPM's Lab Is Managed and Operated By a Core Group of Staff

Operational responsibility for the innovation lab has been assigned to OPM's Employee Services Division and is managed by the agency's Deputy Associate Director of Strategic Workforce Planning.[10] According to OPM officials, since February 2013, the lab has grown from 1 FTE to roughly 6 FTEs. Specifically, as of the end of summer 2013, day-to-day operations in the lab are carried out by 4 FTE staff members, 1 FTE intern, 1 part-time intern, and 1 part-time staff member whose time is divided between the innovation lab and OPM's Resource Management Office. A core group of staff from OPM's Employee Services Division have been trained in human-centered design and also contribute up to 15 percent of their time in the lab. According to OPM officials, the lab reached its maximum fiscal year 2013 funding level of 5.5 FTEs in July 2013. A brief description of each position is provided in table 2.

[9]An FTE is the number of total hours worked divided by the maximum number of compensable hours in a work year. For example, if the work year is defined as 2,080 hours, then one worker occupying a paid full-time job all year would consume one FTE. Two persons working for 1,040 hours each would consume one FTE between the two of them.

[10]OPM's Employee Services Division provides policy direction and leadership in designing, developing, and implementing government-wide human resources systems and programs for recruitment, pay, leave, performance management and recognition, employee development, work/life/wellness programs, and labor and employee relations. They also provide technical support to agencies for human resources management policies and practices, including veterans' employment and evaluation of agencies' human resources programs; the division is also responsible for managing the operation of OPM's internal human resources program.

Table 2: Description of OPM's Lab Staff for Fiscal Year 2013

Lab position	Job description
Lab director	Delivers on and ensures the integrity of the innovation lab's activities, outputs, and outcomes. Directs the program's strategies, in consultation with the lab team and with the executive director of the lab (the Deputy Associate Director of Strategic Workforce Planning).
Lead program analyst	Leads lab program evaluation efforts; provides course instruction, design support on projects, and facilitation as needed; prepares reports; and assists on managing lab use and other activities.
Graphic designer	Produces designs for lab projects and for groups that engage with the lab, including executive staff leadership.
Program analyst	Manages lab calendar, supports delivery of courses, conducts some facilitation, and supports the lab director and program analyst in ongoing review of lab activities.
Student intern	Provides ongoing support for lab operations and services, with a focus on program evaluation support and outreach to the OPM community. Conducts research, provides administrative support, and transcribes outputs.
Student intern	Provides ongoing support for lab operations and services, with a focus on supporting lab technology and graphic designing. Conducts research, provides administrative support, and transcribes outputs.
Business analyst	Supports project scoping as well as delivery of courses, operations, individual projects, and lead facilitators; manages budget and other financial-related reporting.
Other staffing	A core group of staff from OPM's Employee Services Division have been trained in human-centered design and also contribute up to 15 percent of their time in the lab.

Source: OPM.

OPM Employed a Phased Approach to Lab Development Initially Focusing on Capacity Building

OPM has taken a phased approach to developing the lab programming (activities taking place in the lab) and the policies governing lab use (such as priority-setting policies for lab projects). According to OPM documents, each phase has incorporated an element of experimentation, review, and a shift in strategy based on lessons learned.

Phase I lasted from March through June 2012. During these first 4 months after the lab was built, OPM made the space available to the OPM workforce for meetings and events. OPM leadership also used this time to investigate an appropriate problem-solving approach to pair with the lab that would be consistent with approaches used by other labs; they determined that a human-centered design approach and curriculum would complement OPM employees' technical expertise and analytic competencies. OPM also began to recruit interested staff from the Employee Services Division to be trained in human-centered design fundamentals: this staff would then support project sessions in the lab as part of their collateral duties.

Phase II lasted from July 2012 through March 2013 and consisted mostly of facilitated sessions with OPM project teams. During these sessions,

Employee Services staff worked with project teams to generate ideas to long-standing problems through exercises such as project or strategic planning, brainstorming sessions, or stakeholder mapping aimed at discussing and testing potential solutions. Topics discussed during these sessions involved a variety of initiatives directed at improving OPM processes and addressing government-wide human resources challenges. OPM officials noted that innovation lab projects have included, among others, designing an implementation plan with other federal agencies to collect valid, accurate, and timely data on the federal cyber security workforce; updating the government-wide strategy for veterans recruitment; attracting and retaining individuals with talent in science, technology, engineering, and mathematics disciplines; and specific challenges unique to individual agencies.

Phase III lasted from April through November 2013. In Phase III, OPM continued to provide facilitated design sessions and in some cases, follow-on coaching to program offices from within OPM and OPM-led projects. For example, a facilitated design session included lab staff working with the Food and Drug Administration's (FDA) Battery Working Group to more effectively engage with the group's external stakeholders. According to an OPM case study about the lab, eight FDA employees attended the *Fundamentals of Human-Centered Design* course. Following the course, lab staff provided planning support for a public workshop with over 200 participants from stakeholder groups including medical device and battery manufacturers, other regulatory groups, and hospital staff; lab staff also attended the Battery-Powered Medical Device workshop to support the FDA team in their use of design methods. According to an FDA participant, their collaboration with the lab helped them engage in stakeholder dialogue that would not have been otherwise possible. OPM lab staff also began to offer classes in the lab designed to develop mission-critical skills federal workers need to become better problem solvers. The OPM lab offers courses such as *Human-Centered Design Fundamentals*, *Prototyping in the Public Sector*, and *Communicating Visually*, among other topics. These classes are available to OPM staff and other federal workers. Staff also made the lab available for federal communities of practice to convene. According to lab staff, the lab is becoming a hub for a number of standing meetings of a growing community of federal innovators and innovation communities of practice.

Table 3 presents a summary of OPM's human-centered design lab activities since its inception.[11]

Table 3: OPM's Innovation Lab Sessions with Human-Centered Design Programming, Calendar Years 2012 and 2013

Quarter (calendar year)	Approximate number of sessions	Approximate number of participating organizations[a]	Number of participants per meeting (ranges)	Examples of topics included
Q1 2012	NA[b]	NA[b]	NA[b]	
Q2	13	25	8-40	Attracting and retaining science, technology, engineering, and mathematics (STEM) talent; Presidential Management Fellows re-design; cyber security
Q3	33	27	8-35	Domestic violence policy; veterans' hiring and retention; human capital reports consolidation
Q4	12	29	6-40	FDA's Entrepreneurs in Residence program; retirement benefits; closing critical skills gaps government-wide
Q1 2013	43	16	4-95	USAJOBS; Chief Financial Officers' action planning; international affairs communications
Q2	66	24	8-40	Interagency community of practice on innovation; usability training; new employee on-boarding
Q3	57	7	8-40	Diversity and inclusion; human-centered design workshops; knowledge sharing

Source: GAO analysis of OPM data.

Note: Data as of September 30, 2013. OPM made the lab available to other agencies for a variety of purposes, such as targeted design support, classes, and follow-on coaching. Some organizations used the lab more than once over the six quarters reported in the table.

[a]Participating agencies for both human-centered design and non-design activities included the following: Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, Interior, Justice, Labor, State, Transportation, Treasury, and Veterans Affairs; Chief Human Capital Officers Council; Director of National Intelligence; Environmental Protection Agency; Executive Office of the President; Federal Aviation Administration; Food and Drug Administration; Forest Service; General Services Administration; Institute of Museum and Library Services; Internal Revenue Service; National Aeronautics and Space Administration; National Institute of Health; National Institute of Standards and Technology; National Oceanic and Atmospheric Administration; National Science Foundation; Nuclear Regulatory Commission; Office of Management and Budget; Office of Science and Technology Policy; Small Business Administration; Social Security Administration; Transportation Security Administration; U.S. Agency for International Development; United States Postal Service; and the White House Office for Science and Technology. Not all participating organizations were at all the meetings.

[b]The lab was opened in March 2012, but no programmed human-centered design activity was reported during this period.

[11]See appendix III for a summary of OPM's non-design lab activities, which include more traditional meetings such as Presidential Innovation Fellows coaching sessions, since the innovation lab's inception.

Lab staff report that in the future they intend to expand from their session-based work and targeted design support projects, such as those consultative sessions that took place in the lab during Phase III. While some of these more episodic projects may continue to occur, the lab's focus will be on creating and establishing large-scale projects typically involving stakeholders from either wholly within OPM or across different agencies that are working on crosscutting issues. As discussed later in the report, projects appropriate for this design method would have diverse users, be more complex, and be called immersion projects. These would be the most structured activities undertaken in the lab, characteristically being longer-term activities that could take up to six months of intense collaboration with project owners and a diverse group of stakeholders.

OPM's Lab Is Similar in Mission and Design to Other Innovation Labs, but OPM Needs to Systematically Evaluate the Lab's Performance

We identified a common set of challenges that can undermine organizations' efforts to use innovation labs and a set of prevalent practices that the organizations employ to address these challenges and support their labs' success and sustainability. OPM has incorporated some of these practices, such as pairing a distinct space with a structured approach to problem-solving, but has not implemented others, such as developing meaningful performance measures. Although OPM has begun reaching out to other federal innovators, the agency has not fully leveraged the experience of other agencies employing similar approaches.

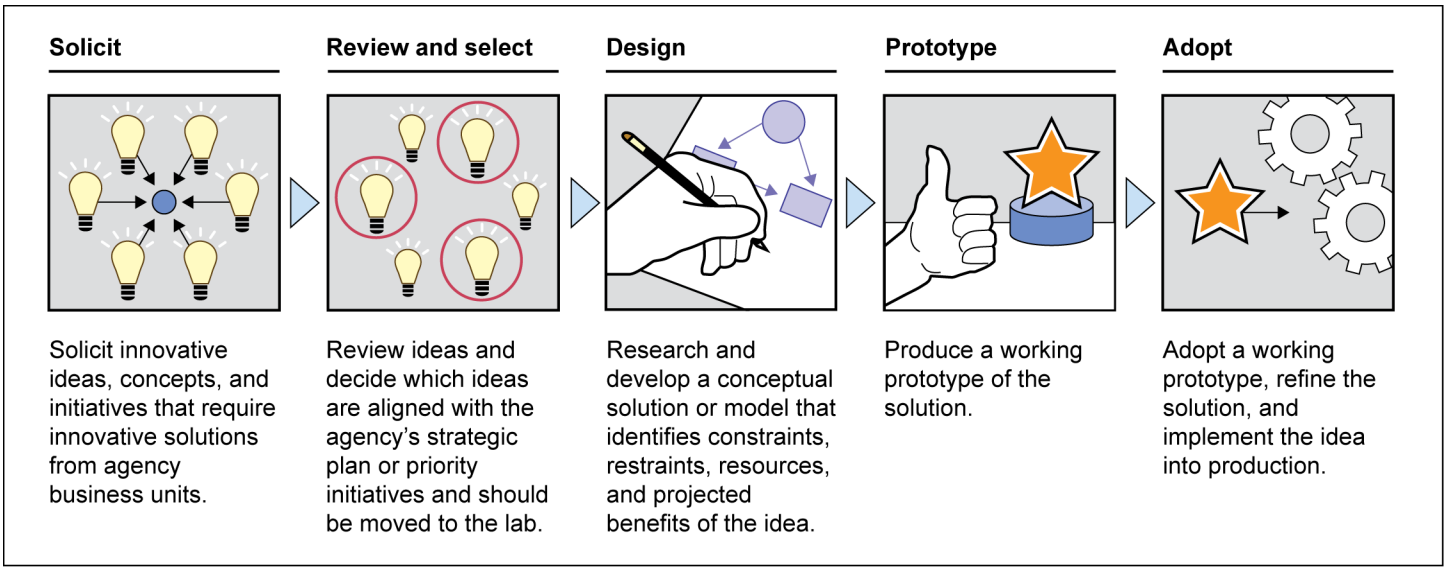
OPM Has Dedicated Physical Space, a Problem-Solving Approach, and Plans to Undertake Long-Term Immersion Projects

As a prevalent practice for encouraging and supporting greater innovation, both the literature and representatives from the organizations we reviewed stressed the benefits of pairing a dedicated physical space with a structured framework rooted in design-thinking principles. Many of the lab representatives said building or establishing a distinct space carries an important symbolic value as it signals an organization-level commitment to a culture that supports innovation. However, simply building a lab is not sufficient to change an organization's culture; it is necessary to also introduce a new framework for problem solving. Although these organizations use different terminology to describe their selected frameworks, such as agile development and human-centered

design, the general principles are similar.[12] They include placing users at the center of the desired solution—research on successful innovation practices shows the importance of engaging customers and understanding their needs. Further, they include extensive collaboration with relevant stakeholders, experimentation, prototyping, and iterative steps to find a solution. A primary objective of this approach is to allow for failure in the beginning of the design cycle, so that organizations can manage and learn from early mistakes, rather than try to recover from an expensive, comprehensive failure upon implementation.

For example, Census and HUD have similar problem-solving frameworks for lab use. As figure 3 shows, the Census Center for Applied Technology and the HUD Innovation Lab rely on a five-step framework to guide innovation in their labs.

Figure 3: Five-Step Framework for Guiding Innovation in the Census and HUD Labs



Source: GAO analysis of HUD and Census protocols for lab use.

[12]For example, agile software development focuses on keeping software code simple, testing often, and delivering functional bits of the application as soon as they are ready. The goal of agile development is to build upon small parts as the project progresses, as opposed to delivering one large application at the end of the project. See GAO, *Software Development: Effective Practices and Federal Challenges in Applying Agile Methods,* GAO-12-681 (Washington, D.C.: Jul. 27, 2012).

As another example, although CFPB does not have a dedicated physical space, it used a similar framework to develop its on-line mortgage disclosure form. According to CFPB's Creative Director for Technology and Innovation, designers interacted with end-users including mortgage applicants, prototyped different forms, and made refinements based on continual feedback before launching the new form. On its website, CFPB describes its design process in detail, including prototyping and feedback sessions with consumers, lenders, and mortgage brokers.[13]

OPM's lab provides a menu of design services to meet the specific needs of various projects. The lab's larger-scale immersion project work will involve taking a complex problem through OPM's problem-solving framework, which encompasses steps for problem framing to learning about users to analysis to concept development, testing, and rapid iterative steps. This problem-solving framework is similar to those employed by other innovation labs.

As discussed earlier in this report, similar to other organizations with labs, OPM is using its lab for a variety of purposes including as a learning space for classes on human-centered design principles and techniques and as a meeting space for interagency task teams and communities of practice. As originally envisioned in its strategic and performance plans, the lab was designed to host a mix of activities rooted in the human-centered design approach, including longer-term design challenges. Moreover, OPM lab staff asserted that to gain an organization's confidence and to instill a culture of innovation, it is necessary for a successful innovation lab to have an array of sufficiently compelling projects that demonstrate how the lab approach can lead to performance improvements.

Based on our interviews with public and private sector organizations with similar innovation facilities, larger-scale problem-solving projects were common activities in their innovation labs' service portfolios. As an example, Denmark's MindLab has contributed to tackling several pressing social issues including simplifying the process for managing claims related to industrial accidents and shortening the time before injured workers return to the market. Opportunities to showcase a new approach to problem solving reduce the likelihood that the lab might lose its

[13]See http://www.consumerfinance.gov/knowbeforeyouowe/#2.

distinction as different from a traditional meeting space or classroom usually associated with training facilities.

Consistent with what staff from other labs told us, OPM officials said they needed the past two years to first introduce agency staff to human-centered design concepts and applications before they could initiate an immersion project. Lab staff said this phased approach was necessary for several reasons. Targeted design support sessions allowed lab staff to expose lab users to design methods and provided opportunities for collaboration. These sessions also allowed lab staff to quickly show value for program offices in response to a specific need. For example, OPM lab staff members were able to help FDA staff plan and engage with over 200 different stakeholders at a conference. They also said targeted design support is a critical way for emerging design practitioners to develop and hone their own skills before applying them to a longer term, and higher stakes, project engagement. Lab staff said overall these sessions benefited both the users of the lab, who developed new skills to take to their home offices, such as problem framing and engaging with stakeholders, as well as lab employees, who continue to grow and refine their human-centered design skills. In a December 2013 document, OPM staff stated they intend to create and establish these longer-term immersion projects and evaluate their impact during the next phase of the lab's development.

OPM Has Not Fully Developed Meaningful Performance Measures

Measuring the long-term outcomes of innovation labs is a prevalent practice for building acceptance and demonstrating the value of the labs. Consistent with our literature review, several representatives we interviewed from other innovation labs concurred with the director of innovation at Denmark's innovation lab, MindLab, who said that innovation labs need to know how much they are spending and their outcomes. According to the director, the labs must also be able to attribute where the change happens based on their work. In addition, lab staff must be prepared to present a narrative of their work. He acknowledged that innovation labs are risky because they look different, and they have a different focus than other government entities. The director said that, as a result, innovation lab officials need to show where the funds are going along with the benefits and results of those investments.

Representatives from newer labs—i.e. those operating less than three years—stated they primarily rely on output measures to gauge their initial efforts such as number of users, ways in which the lab is being used,

classes or events held in the lab, and anecdotal evidence. Developing outcome measures is more challenging for several reasons. Appropriate outcome measures are often not obvious at the onset of a project. Moreover, agencies may not have appropriate measures or baseline data when they start using an innovation lab as a problem-solving tool, and the role of the lab in driving a successful innovation may not always be clear.

Given these challenges to accurately measuring innovation and the value of an innovation lab, lab managers from labs that have been operating for a longer period of time told us they focus on developing meaningful milestones and measures applicable to different phases of the innovation lifecycle, such as problem generation, idea generation, and skills development. For example, the UNICEF Innovation Unit—which has been helping member-country offices set up innovation labs since 2006—and several European initiatives developed a set of benchmarks intended to help them measure the value of public sector labs and identify ways in which the lab's performance can be improved.[14] The benchmarks UNICEF developed span across six categories, such as problem definition and idea generation, internal and external collaboration, and secondary effects. Within each category, they include a list of questions intended to assess their strengths and weaknesses. For example, they want to know whether labs are helping employees define problems and generate ideas, strengthen internal collaborations, and build external partnerships. They also measure the extent to which work done in the labs results in new team or staff capacity, excitement and goodwill toward the organization, and an increase in leverage and influence in their field. OPM is undertaking a similar effort to establish benchmarks that will help lab staff gauge the extent to which lab users are learning and applying many of these same skills, but the lab is not mature enough to have results.

OPM documents state that the goal of OPM's innovation lab is to provide federal workers with 21st century skills in design-led innovation, and the intended purpose of the lab is to provide a physical space for project-based problem solving. The documents also note that the value of the lab

[14]For more information on the work that Nesta, an innovation organization in the United Kingdom, and the Danish Agency for Science, Technology and Innovation are doing to evaluate innovation in the public sector, see Hugo Thenint, "Innovation in the Public Sector," Mini Study 10 (INNO Global Review of Innovation Intelligence and Policy Studies, Feb. 2010).

can be measured, in part, by how well it helps develop the mission-critical competencies to improve the federal workforce's ability to solve problems and deliver results.

In its strategy document, OPM laid out the following high-level goals for the innovation lab:

- Employees assigned to the innovation lab should go back to their home organization with an understanding of, and an appreciation for, the power of innovative approaches to problem solving.
- Employees should be equipped to implement similar methodologies in their home organizations on future projects.
- As the innovation lab matures, and as more and more projects are completed, the notion of using innovation to tackle complex problems will gain traction across the organization.
- Eventually, leaders and employees across OPM will vie to get their issues sent to the innovation lab for resolution.
- This in turn will contribute to a decrease in organizational silos, and a concurrent increase in cross-organizational teams addressing one organization's issues.

In the same document, OPM officials also described an evaluation strategy resembling an agile approach.[15] Specifically, OPM described these goals as moving targets which would be achieved through an evolving and self-correcting process. Lab staff immediately started to track lab activities and outputs, such as number of participating people and agencies, and how participants used the lab, such as consultative sessions, follow-on coaching, training classes, or as a meeting space. Five months after the lab opened, they also started to survey users who participated in day-long facilitated sessions. For example, there was a one-page evaluation that asked respondents to rate the appropriateness

[15]The agile approach was first articulated in 2001 and is still used today. With this approach, project managers establish their higher-level, strategic goals but are more likely to respond to change rather than follow a set plan. This approach recognizes that long-term project plans are not adaptable, whereas short-term plans provide more flexibility in responding to change. It is considered more effective to devise a detailed plan for a shorter period and a general plan for a longer period.

of the environment and quality of the facilitators. The surveys also asked whether users would recommend the lab to colleagues and whether human-centered design problem-solving tools can be used as an effective tool government-wide. The responses were generally positive—about 82 percent of respondents (84 out of 103) said they would recommend the lab to someone else, providing a baseline for subsequent survey findings. According to lab staff, they periodically reviewed the available data and adjusted their strategy for operating the lab.

Starting in March 2013, a year after the lab opened, OPM lab staff began work on a program evaluation framework to more systematically measure the lab's progress toward meeting their overarching goals. To evaluate the extent to which lab participants are learning and applying innovative approaches, lab staff intends to measure the lab's performance along three overarching categories: service experience, skill development, and project outcome. According to the framework, resources dedicated to evaluation efforts will reflect the resources needed to host lab-sponsored events. Episodic events such as consulting sessions will correspond to a "light-touch" follow-up effort, such as immediately surveying all participants on their session experience and skills development. More long-term, resource-intensive efforts such as immersion projects will employ a more robust follow-up effort that, in addition to assessing the session experience and skills development, will also address project-specific outcomes. Collection of assessment data in all three areas will include the administration of surveys to participants both before and right after a session, and some services will involve the administration of surveys to participants before a service and subsequent periodic check-ins. Depending on the nature of the lab session, information on skill development and outcomes will also be obtained from session clients in pre-session scoping conversations and periodic, post-session check-ins using either surveys, or interviews. For one type of session, assessment of participant skill development will also include a survey of participant supervisors.

Lab staff has used a series of surveys to measure participant experience and skills development, and to capture specific project-related outcomes for the different services they offer. However, the survey instruments are unlikely to yield data that would be of sufficient capacity, credibility, and relevance to indicate the nature and extent to which the lab is achieving what it intends to accomplish or its value to those who use the lab space. Although there are several items across all surveys that are reasonably aligned with generally accepted questionnaire and item design principles, there are limitations associated with many items where language is

ambiguous, where the intent of the question is not clear, and directions are lacking. For example, phrases such as “changed behavior” or “tangible outputs you can move forward” are open to numerous interpretations and are likely to engender an array of responses that range from being relevant to not at all relevant or relatable to the purposes or objectives of the session. In addition, some of the items may be more likely to engender responses with a greater likelihood of being subject to a respondent’s social desirability bias. For example, the respondent may want to provide answers that are socially desirable, maintain the status quo, or make a good impression.

While some customization is to be expected, the surveys did not indicate any approach to evaluate some core aspects of the lab and its value using a consistently presented set of the same questions. For example, the question asking participants about the likelihood that they would recommend the lab to someone else is the type of item that could, with revision, be incorporated in all of the surveys. Analyses of a core set of items by type of lab event or service would enable lab staff to discern and compare where participants were more and less engaged in lab activities and curricula. Consequently, these survey instruments and the items on them may be susceptible to various types of question and respondent bias and could, when the responses are analyzed, produce results that would be difficult to interpret or link to expected participant effects, or to the intent or activities of the workshop session. Moreover, lab staff has not developed outcome measures or milestones related to customer experience and skills development.

The evaluation framework being developed by OPM does not include interim performance targets or measures. Best practices state that new initiatives benefit when managers set time-bounded, quantifiable interim goals, establish related performance measures, collect data, and use that information to assess and adjust their performance.[16] To evaluate the overall performance of MindLab, the director said he develops an annual work plan, which describes the number and types of projects and other activities the lab will undertake, as well as the relative resource allocation

[16]GAO, *The Results Act: An Evaluator’s Guide to Assessing Agency Annual Performance Plans,* GAO/GGD-10.1.20 (Washington, D.C.: April 1998) and GAO, *Streamlining Government: Questions to Consider When Evaluating Proposals to Consolidate Physical Infrastructure and Management Functions*, GAO-12-542 (Washington, D.C.: May 23, 2012).

to those projects and activities. He said his staff also conducts an annual review of the budget and actual expenditures with the board. OPM lab staff has been tracking outputs—such as number of participants and number and type of activities—meaning that they have baseline data which could inform realistic, meaningful targets and measures related to lab use and activities for the upcoming year. Although they continue to refine their surveys, they could use the results from earlier versions to establish targets and measures related to customer experience and skills development. Meaningful measures or milestones could help them assess their progress toward improving participants' ability to solve problems and accurately measure the effect of working in the lab on services, products, and processes.

As mentioned previously, the lab plans to host the more resource-intensive immersion projects. To demonstrate that the lab is operating as originally intended, evaluation plans will be needed for specific immersion projects that can help track cost-benefits and performance improvement outcomes. OPM stated that evaluation plans will be prepared for each immersion project to account for project outcomes. They indicated that they wanted to host their first immersion project within the next several months.

OPM Has Started Efforts to Connect with the Federal Innovation Community, but Has Not Fully Leveraged Other Agencies' Efforts

Another prevalent practice we identified included leveraging other innovation labs' efforts to try to increase the value of the lab approach. Studies show that information sharing and interorganizational networks can be a powerful driver supporting innovation. One study showed that interorganizational networks of innovators help members develop new products at a faster rate with lower investment commitments, due in large part to the information sharing that takes place.[17] Sharing information can help mitigate the risks and uncertainty that typically characterize innovation ventures. Best practices state the importance of establishing channels of communication and other mechanisms that facilitate knowledge-sharing and building networks of like-minded communities to

[17]Jennifer Lewis Priestly and Subhashish Samaddar, "Information Sharing in Innovation Networks," *Encyclopedia of Information Science and Technology,* Second Edition (Hershey, PA: IRM Press, 2006).

help agencies achieve crosscutting objectives.[18] For example, the Census Bureau's Chief Technology Officer suggested a way in which innovation leaders could share information and pool resources. Specifically, instead of each agency creating its own technology innovation lab with its own hardware, software, and associated maintenance, they could use a common innovation infrastructure service in the public cloud.[19] Every agency could still have their own branded offering and could still provide access in their own facility or at their regional offices. However, an outside vendor could provide the infrastructure. For example, if an agency wanted to experiment with some unique visual analytic tools, they could purchase what they need on a subscription service; this would eliminate agencies buying all the tools themselves.

While labs provide a physical space where innovators can convene, federal agencies are not fully aware of their growing community. As of June 2013, OPM was unaware that other agencies such as Census, HUD, and NASA were pursuing a lab approach to promote innovation. Moreover, the lab directors at these agencies were not aware or only marginally aware of OPM's lab and its resources or other federal innovation labs. OPM's efforts to develop an innovation lab occurred around the same time or pre-dated those of other agencies we interviewed.

According to OPM officials, during its first year of operations, OPM lab staff focused their efforts on promoting awareness of the lab and its resources internally to OPM staff. In their second year, OPM lab staff planned more activities intended to promote the lab and its resources externally to connect with federal agencies' innovation efforts. Staff noted the OPM lab is the hub of various interagency networks of innovation practitioners. For example, an interagency community of practice on idea generation meets in the lab on a monthly basis. OPM's lab staff also

[18]GAO, *Managing for Results: Key Considerations for Implementing Interagency Collaborative Mechanisms*, GAO-12-1022 (Washington, D.C.: Sept. 27, 2012); *Interagency Collaboration: State and Army Personnel Rotation Programs Can Build on Positive Results with Additional Preparation and Evaluation,* GAO-12-386 (Washington, D.C.: Mar 9, 2012) and *Results-Oriented Government: Practices That Can Help Enhance and Sustain Collaboration among Federal Agencies*, GAO-06-15 (Washington, D.C.: Oct. 21, 2005).

[19]A public cloud is a set of computers and computer network resources based on the standard cloud computing model, in which a service provider makes resources, such as applications and storage, available to the general public over the Internet.

reported that they host weekly trainings in the lab on best practices, including webinars about measuring the success of enterprise-level design efforts and the value of visualizing information. These training sessions include case study presentations from other federal agencies, such as GSA, and non-federal entities. In addition, OPM has shared best practices with other public sector design labs across the globe by participating in a number of conferences. OPM is also collaborating with a current Presidential Innovation Fellow, who is building an innovation toolkit. Although projects in the lab are currently managed and for the most part delivered by OPM employees, staff noted that they are increasingly looking to leverage detailees, short-term assignments, and other ways to harness the potential of talent from other agencies. OPM staff said they also give regular tours of their innovation lab for other government entities already supporting innovation initiatives or developing them. In addition to these activities, OPM hosted a convening of federal innovators to compare various agencies' innovation communication efforts across the agencies.

Several federal officials we interviewed said they would welcome the opportunity to communicate as the need arose with a community of peers to exchange information and ideas and trouble-shoot problems related to the start-up and maintenance of their labs. For example, CFPB's Creative Director for Technology and Innovation said it would be helpful to find out what other bureaus and departments are doing to incorporate design principles, so that she could exchange ideas and information. An official from NASA's Swamp Works noted that it would be beneficial to show that others in the federal sector are also looking at innovation labs. To that end, simply knowing the innovation community exists and how agency staff leading innovation efforts can initiate a conversation related to a specific topic would likely be beneficial and would help avoid the risk of a fragmented innovation community.

OPM's 2014 through 2018 Strategic Plan Indicates It Intends to Use the Lab to Advance OPM Priorities

Because innovation necessarily entails culture change, experimentation, periodic setbacks, and often resource investments, another prevalent practice necessary to sustain a lab includes leadership support. Innovation labs are one tool that agencies can use to foster innovation. Agency officials and lab directors we interviewed said leaders must be willing to embrace experimentation within the lab and understand that smart failures—failures that result from trial and error, where the alternative would be to do something truly risky due to lack of evidence—are part of the design process. For example, the Census Bureau's Chief Technology Officer noted that support by Census Bureau leadership is

critical to ensure staff participation and the continued availability of funds to drive innovation in its Center for Applied Technology lab. Other lab directors highlighted several strategies they use to balance the risks and failures that accompany a problem-solving methodology rooted in a more experimental approach. These include accelerated timelines of three to six months, which allows organizations to quickly shelve projects that are without merit. Some lab leaders also noted that a quick win or early success can give new labs the underlying support they need to take on riskier projects.

In March 2014, OPM released its 2014 through 2018 strategic plan, which states that the agency plans to seek new, innovative ways to accomplish its work of advancing human resource management in the federal government. In the strategic plan, OPM indicates that, among other things, it intends to use the innovation lab and human-centered design methods to address OPM's operational challenges.

Conclusions

For OPM and the rest of the federal government, finding more efficient and effective ways of doing business to help meet rising citizen demands for public services is critical, particularly in an era of continued fiscal and budgetary constraints. OPM's innovation lab is one such tool intended to give rise to solutions of complex problems facing the federal government.

Consistent with other innovation labs, development of performance and outcome measures, tools to assess performance, and further leveraging the experience of other organizations undertaking similar efforts will also be critical. Having clear and specific outcome measures will help OPM track and evaluate the extent to which the lab is meeting its original intent and over time, to make any necessary adjustments. Otherwise, OPM's innovation efforts may not be able to demonstrate the types of results initially envisioned.

Recommendations for Executive Action

We recommend that the Director of OPM take the following actions to help substantiate the lab's original goals of enhancing skills in innovation and supporting project-based problem solving:

- Direct lab staff to develop a mix of performance targets and measures to help them monitor and report on their progress toward lab goals. Output targets could include number and type of lab activities over the next year. Outcome targets and measures should correspond to the

lab's overarching goals to build organizational capacity to innovate and achieve specific innovations in concrete operational challenges.

- Direct lab staff to review and refine the set of survey instruments to ensure that taken as a whole, they will yield data of sufficient credibility and relevance to indicate the nature and extent to which the lab is achieving what it intends to accomplish or is demonstrating its value to those who use the lab space. For example, lab staff should consider the following actions:
  - Developing a standard set of questions across all service offerings.
  - Revising the format and wording of existing questions related to skills development to diminish the likelihood of social desirability bias and use post-session questions that ask, in a straight-forward way, about whether, or the extent to which, new information was acquired.
  - Replacing words or phrases that are ambiguous or vague with defined or relevant terminology (e.g., terms actually used in the session) so that the respondent can easily recognize a link between what is being asked and the content of the session.

- Direct lab staff to build on existing efforts to share information and knowledge within the federal innovation community. For example, OPM lab staff could reach out to other agencies with labs such as Census, HUD, and NASA's Kennedy Space Center to share best practices and develop a credible evaluation framework.

Agency Comments and Our Evaluation

We provided a draft of this report to the Director of OPM for review and comment. The director provided written comments, which we have reprinted in appendix IV. In summary, OPM generally concurred with our recommendations and described ongoing and planned steps to refine evaluation efforts and further leverage other federal innovation labs.

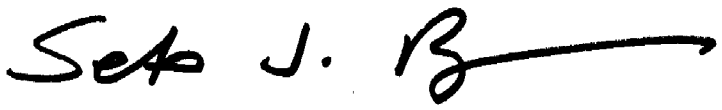
For the recommendations on evaluating performance, the director described a competency-based skills gap pilot the lab is undertaking, based on targets from pre- and post-testing of participants in lab activities. We acknowledge that this is an important step in developing performance measures, and OPM will also need targets and measures to demonstrate the lab's value in achieving specific innovations in concrete operational challenges.

For the recommendation on leveraging other federal agency innovation efforts, the director noted OPM's work seeking out information and contacts from other innovation endeavors, including lab-based ones. We acknowledge OPM's more recent emphasis in this area, including participating in an interagency community of practice on innovation. Federal officials we interviewed said they would welcome the opportunity to communicate as the need arose with a community of peers.

To clarify, the report recognizes sustained organizational leadership as a prevalent practice for the success of innovation labs. However, this was not a specific report recommendation, but an acknowledgement regarding the general role leadership plays in ensuring the success of innovation labs. In her response, the director stated that OPM recently released its 2014 through 2018 strategic plan, which she said demonstrates OPM leadership's commitment to the advancement of work in the lab. Accordingly, we updated the report to reflect the most current information available at the time of our publication.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the Director of OPM and appropriate congressional committees. This report will also be available at no charge on our website at http://www.gao.gov.

If you or your staff members have any questions about this report, please contact me at (202) 512-4749 or bagdoyans@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff members who made major contributions to this report are listed in appendix V.



Seto J. Bagdoyan
Acting Director
Strategic Issues

Appendix I: Objectives, Scope, and Methodology

This appendix provides information on the scope of work and the methodology used to (1) describe the Office of Personnel Management (OPM) innovation lab's start-up and operating costs, staffing and organization, activities, and policies governing the lab's use, and (2) assess how OPM's innovation lab compares to other organizations' innovation labs, including how it uses benchmarks and associated metrics and how it addresses potential challenges to innovation.

To address the first objective, we reviewed documentation and met several times with OPM staff overseeing the lab and its activities. We reviewed the lab's construction and operations' budget, including the funding sources for the lab, and interviewed agency officials knowledgeable about the lab's budget. Based on interviews and e-mail exchanges with knowledgeable OPM and General Services Administration staff and reviewed documents, we found OPM's lab expense data to be sufficiently reliable for the purposes of our report. We reviewed spreadsheets maintained by lab staff tracking lab outputs, such as workshops hosted in the lab and number of attendees.[1] We also reviewed lab performance materials such as the lab's performance plan, user surveys, and the results of those surveys. Survey specialists in our Center for Design, Methods, and Analysis reviewed the lab user surveys using internal review guidance that is typically performed on draft GAO surveys as part of our development process and required before deployment of a survey. In addition to reviewing with lab staff the documents they provided us, we interviewed them about OPM's process for identifying and selecting a lab strategy, lab staff's approach to implementing a human-centered design curriculum, and their goals for the lab.

To address the second objective, we conducted a detailed literature search of material from academic institutions, global management consultants, professional associations, think tanks, news outlets, and various other organizations. We also reviewed literature documenting public, private, and academic innovation efforts and associated positive and negative outcomes. Our literature search helped us identify benchmarks and associated metrics applicable to the development and use of innovation facilities in the public, private, and nonprofit sectors. We

[1]Outputs as used here include measurement of the lab's services and level of participation in lab activities.

also interviewed OPM lab staff on how they intend to identify outcomes—such as cost reductions, performance improvements, or other results—from projects undertaken by OPM since the inception of the lab.

We used the findings from our literature review to identify organizations with innovation facilities having a dedicated physical space and using problem-solving methods similar to OPM's lab. We selected a mix of 11 public, nonprofit, and private organizations to visit or interview. In addition, we met with an official from the Consumer Financial Protection Bureau (CFPB). While CFPB lacks a dedicated innovation lab, the agency has a reputation among federal agencies as a leader in innovative website development. Table 4 lists the organizations we visited in person or interviewed their representatives by telephone.

Table 4: List of Innovation Labs with Facilities Similar to OPM

Innovation lab	Sector
Census Bureau's Center for Applied Technology	Public
Housing and Urban Development's Innovation Lab	Public
National Aeronautics and Space Administration Kennedy Space Center's Swampworks	Public
Denmark's MindLab	Public
UNICEF's Innovation Labs	Nonprofit
Harvard University's Harvard i-lab	Nonprofit
The Australian Centre for Social Innovation (TACSI)	Nonprofit
Microsoft's New England Research & Development (NERD) Center	Private
Fidelity Investment's Fidelity Center for Applied Technology (FCAT)	Private
Staples' Velocity Lab	Private
Deloitte's Govlab	Private

Source: GAO.

At every lab we visited or contacted, we interviewed lab representatives about the history of the lab, including why they decided to pursue a lab strategy; how the lab is used; the protocols for engaging participants; how lab directors measure the performance of the lab; challenges to promoting innovation within the organization; and practices for addressing those challenges. Based on our literature search, we identified common challenges that can hamper organizations' efforts to use labs as innovation vehicles and prevalent practices that can support labs' success and sustainability. In addition, we reviewed our interview records to identify commonly recurring challenges and prevalent practices that

can support labs' success and sustainability. We verified that the challenges and prevalent practices we identified during our literature search were also those more often cited during the interviews.

We also interviewed representatives from two management consultancies that promote problem-solving approaches rooted in design-thinking principles, IDEO and Luma. OPM contracted with Luma to help design the lab and implement human-centered design programming. We spoke with their representatives to understand the challenges their clients face in changing organizational culture and the benchmarks and metrics they advise their clients to adopt to measure the performance of new labs and problem-solving methods.

In addition, we interviewed officials from three public-sector organizations—San Francisco Mayor's Office of Civic Innovation, Canada's Public Policy Forum, and United Kingdom Behavioural Insights Team—that are pursuing strategies to promote innovation in their organizations but opted not to build innovation labs. They spoke to us about the challenges that prevented them from building labs and the steps they are taking to incorporate human-centered design-like problem-solving methods without a physical lab.

We conducted this performance audit from July 2013 to March 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Innovation Labs Share Similar Design Elements and Problem-Solving Methods

This table contains the same text portrayed in figure 2 and shows how innovation labs we surveyed from the public, private, and nonprofit sectors generally use their labs for multiple and similar purposes.

Organization	Sector	Purpose of lab	How is it used
Lab@OPM	Public	To help deliver on President Obama's vision of a more effective and efficient government for the American people by supporting a government-wide community of innovators.	Dedicated space where OPM and interagency teams can take a problem through a full design cycle. This includes problem framing, learning about users, analysis, concept development, testing, and rapid iteration. Capacity building—lab hosts classes and workshops. Meeting space for OPM staff and other federal workers and interagency communities of practice.
Census Center for Applied Technology (CAT)	Public	To provide a "safe zone" where Census staff can explore new technology solutions without impact to production operations.	Dedicated space where lab and other Census staff can develop, test, and implement ideas into production outside the standard production environment Capacity building—lab hosts presentations of new technologies and solutions.
NASA Kennedy Space Center's (KSC) Swampworks	Public	To provide a dedicated space where NASA KSC engineers can quickly resolve problems related to deep-space exploration.	Space where 20 NASA engineers and scientists prototype and test emerging technologies. Swamp Works has contracts with other NASA centers worth about $7 million a year.
Housing and Urban Development (HUD) Innovation Lab	Public	Provide a space that looks different from the traditional office environment, where HUD employees can accelerate the development of solutions more efficiently than other available approaches.	Dedicated space where HUD lab staff and mission area leads can develop, test, and implement ideas into production within a compressed timeframe.
Denmark's MindLab	Public	Provide a neutral space for government ministries to work with citizens and businesses to create new solutions for society.	Ministry officials from Danish Ministries of Business and Growth, Education, and Employment use the MindLab space and resources to take a problem through the full design cycle. Capacity building—lab hosts classes, conferences, and workshops.
UNICEF Innovation Labs	Nonprofit	Help the organization become more flexible, agile, and better prepared for global changes by providing spaces where 135 country offices can collaborate with local partners.	Dedicated spaces where UNICEF country office staff and their local partners can take a problem through a full design cycle.

Organization	Sector	Purpose of lab	How is it used
Harvard i-lab	Nonprofit	Provides space, practical skill building, and programming for Harvard students, faculty, staff, alumni, and others engaged in new ventures, nonprofit creation, product or service innovation, small business development, and related educational and research activities.	Incubator, workspace, and programming for start-up ventures involving Harvard students, and their partners. Teaching space for Harvard students. Meet-up space for local community.
The Australian Centre for Social Innovation (TACSI)	Nonprofit	To tackle tough social issues, such as family breakdown and social inequality, by building Australia's social innovation capability.	Laboratory for co-designing new social programs for vulnerable populations—this includes generating ideas, conducting ethnographic research, and prototyping potential solutions. Meet-up space: TACSI hosts events, workshops, and conferences for social change community. Capacity building for other social innovators.
Staples Velocity Lab	Private	Provide a dedicated physical space in the heart of the Cambridge, MA tech sector that can accelerate the speed of product development, increase collaboration, and attract new talent.	Office space for moving new and emerging technologies through the development pipeline. Meet-up space for local tech community. Recruitment tool for top tech talent.
Microsoft's New England Research & Development (NERD) Center	Private	To build a strong and permanent research and development presence in Cambridge, MA where Microsoft researchers and programmers can build relationships with local universities, biotech, and healthcare companies.	Office space for moving new and emerging technologies through the development pipeline. Meet-up space for local tech community. Recruitment tool for top tech talent.
Fidelity Center for Applied Technology (FCAT)	Private	Provide a dedicated physical space where Fidelity executives explore how emerging technologies can improve products and processes for internal business units.	Laboratory where FCAT staff can identify solutions and develop new products and processes for Fidelity business units. Hosts conferences, workshops, and social events related to technological and social innovation.
Deloitte GovLab	Private	Provide a dedicated physical space that exemplifies how environment can promote creativity and collaboration where Deloitte's future leaders can hypothesize, research, and test new ideas.	Leadership development institute for Deloitte's highest performing consultants A think tank where fellows develop innovative yet practical strategies governments can use to transform the way they deliver their services and prepare for the challenges ahead Capacity building—GovLab educates Deloitte account teams on these emerging trends.

Source: GAO analysis of lab documents and interviews with lab representatives.

Appendix III: Office of Personnel Management's Innovation Lab Non-Design Programmed Activities, Calendar Years 2012-13

Quarter (calendar year)	Approximate number of meetings	Approximate number of participating organizations[a]	Number of participants per meeting[b] (ranges)	Examples of topics included
Q1 2012	7	12	9-25	Recruitment policy and outreach; civil service innovation cohort; Chief Learning Officers' meeting
Q2	37	8	8-30	Acquisition planning; retirements calculator challenge; leadership and talent management
Q3	7	2	unknown	Performance improvement review; Presidential Innovation Fellows coaching session
Q4	21	4	unknown	MyGov platform; RFP-EZ; health exchanges
Q1 2013	14	4	5-47	HealthCare.gov summit; retirement service summit; Science, Technology, Engineering, and Mathematics (STEM) event
Q2	4	3	10-15	State e-Diplomacy; speaker series; U.S. Department of Agriculture brainstorming
Q3	21	6	5-25	Graphic Facilitators Community of Practice; State's global partnership initiative retreat; USAJOBS training session with Environmental Protection Agency students

Source: GAO analysis of OPM data.

Note: Data as of September 30, 2013.

[a]Participating agencies for both human-centered design and non-design activities included the following: Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, Interior, Justice, Labor, State, Transportation, Treasury, and Veterans Affairs; Chief Human Capital Officers Council; Director of National Intelligence; Environmental Protection Agency; Executive Office of the President; Federal Aviation Administration; Food and Drug Administration; Forest Service; General Services Administration; Institute of Museum and Library Services; Internal Revenue Service; National Aeronautics and Space Administration; National Institute of Health; National Institute of Standards and Technology; National Oceanic and Atmospheric Administration; National Science Foundation; Nuclear Regulatory Commission; Office of Management and Budget; Office of Science and Technology Policy; Small Business Administration; Social Security Administration; Transportation Security Administration; U.S. Agency for International Development; United States Postal Service; and the White House Office for Science and Technology. Not all participating organizations were at all the meetings.

[b]The ranges provided are estimates based on OPM data.

Appendix IV: Comments from the Office of Personnel Management

UNITED STATES OFFICE OF PERSONNEL MANAGEMENT
Washington, DC 20415

The Director

March 26, 2014

Mr. Seto Bagdoyan
Acting Director, Strategic Issues
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Bagdoyan:

Thank you for giving the U.S. Office of Personnel Management (OPM) the opportunity to comment on the Government Accountability Office (GAO) draft report, "Agency Needs to Improve Outcome Measures to Demonstrate the Value of its Innovation Lab."

We appreciate the thoughtfulness with which you conducted the research and drafted the report on OPM's Lab, in particular your consideration of the growing community of labs and innovation environments in public and private sector organizations around the world. OPM is proud to be a part of this growing community of innovation practices, and draw on these best practices for inspiration as we work to further develop the Lab's quality programming. As demonstrated in the documentation and information we have provided, the Lab's program plans include long-term projects with measurable outcomes, sustained thought leadership, a community of practice, and a more mature overall evaluative framework.

OPM values and accepts the report's recommendation that we must improve and increase the consistency of our program evaluation efforts. Recognizing this need from the beginning, we have continued to develop our evaluation strategy by drawing on OPM's internal expertise in program evaluation and organizational psychology.

The GAO found that the Lab staff has experimented with a number of evaluative instruments as part of our effort to design the strongest possible measurement strategy for the Lab. This observation is correct, but we would like to emphasize, in particular, that we have drawn on international best practices while focusing on designing a measurement strategy appropriate for the unique value that the Lab is providing. As GAO points out, OPM has captured qualitative and quantitative feedback since the beginning of Phase II of the Lab's existence. As noted on page 22 of the report, we have consistently used the "Net Promoter Score," captured immediately after people's experiences with the Lab, to determine the likelihood of visitors recommending engaging with the Lab to others.

The GAO report also indicates on page 22 that the Lab did not undertake to measure skill development over time with measures and milestones. For clarification, we note that we do have a competency-based skills gap pilot the Lab is undertaking. OPM is serving as a pilot agency to test the Lab's impact on participants' problem-solving, strategic thinking, and data analysis proficiency levels.

The Lab's Skills Gap Pilot has the following targets for each competency being assessed:

1-year:
Problem Solving: 10% increase in proficiency level from pre-test to post-test
Strategic Thinking: 10% increase in proficiency level from pre-test to post-test

2-year:
Problem Solving: 20% increase
Strategic Thinking: 20% increase
Data Analysis: 10% increase

We additionally appreciate and accept the report's recommendation that we do more to foster a government-wide community of innovators. It is for this reason that we have used the Lab to convene cross-agency communities of innovation practitioners. There is an enormous untapped potential in bringing ongoing innovation efforts together to share with and learn from each other. We would clarify, though, the report's characterization of OPM's efforts to coordinate the Lab's work with other Federal efforts. Throughout the Lab's development, OPM's senior leadership, Employee Services leadership, and the Lab's Executive Director have consistently sought out information and contacts from other Federal innovation efforts, including lab-based ones. We did this by actively participating in an interagency community of practice on innovation, convening meetings in the Lab with other civil service SES and senior management innovation practice leads, and using our growing network of innovation practitioners to map innovation efforts across the Federal government. We have consistently found, however, that existing labs are primarily focused on technology innovation, as opposed to the OPM focus on human-centered design as a specifically employee-focused innovation practice. We believe that there is a unique need for public sector labs to use human-centered design to drive more customer-centric government policies and services; and that OPM's Lab was the first of its kind in the United States Federal government.

With respect to your recommendation that sustained organizational leadership plays a pivotal role in the Lab's success, and to further demonstrate how OPM is leveraging the Lab for sustained program and management initiatives, I would like to direct your attention to OPM's recently released 2014-2018 Strategic Plan, which demonstrates OPM's commitment to the advancement of the work of the Lab, available at: http://www.opm.gov/about-us/budget-performance/strategic-plans/2014-2018-strategic-plan.pdf. This document clearly presents the Lab as a strategic asset contributing significantly to Goal 1, creating a diverse and inclusive OPM Workforce, and Goal 2, improving the delivery of OPM customer service. These initiatives, in addition to other work we have launched, will give the Lab the opportunity to provide measurable results that demonstrate the Lab's value.

Again, thank you for the opportunity to comment.

Sincerely,

Katherine Archuleta
Director

Appendix V: GAO Contact and Staff Acknowledgments

GAO Contact

Seto J. Bagdoyan, (202) 512-4749 or bagdoyans@gao.gov.

Staff Acknowledgments

In addition to the contact named above, Thomas Gilbert, Assistant Director, and Judith Kordahl, Analyst-in-Charge, supervised the development of this report. Jessica Nierenberg and Anthony Patterson made significant contributions to all aspects of this report. Other important contributors included Thomas Beall, Karin Fangman, Donna Miller, and Robert Robinson.