beeckcenter
social impact + innovation
GEORGETOWN UNIVERSITY

JULY 2024

REPORT | AARON SNOW

Unemployment Insurance IT Modernization Grant Projects:

Phase I Summary Report

TABLE OF CONTENTS

Executive Summary

During the COVID-19 pandemic, states' unemployment insurance (UI) teams were subject to unprecedented claims volume while also attempting to implement several new UI programs created by Congress, and many states struggled with processing delays and system failures.

In September of 2023, pursuant to its UI IT modernization strategy of encouraging and incentivizing states' progress toward making their UI systems more adaptable, resilient, and responsive, the U.S. Department of Labor (USDOL) awarded IT modernization grants to 18 states and one U.S. territory (grantees) to fund improvements to their UI systems congruent with the modernization priorities of cloud migration, measurably improving customer experiences, and adopting modular, Application Programming Interface (API)-driven approaches—priorities well understood and broadly accepted in the software world, and the pursuit of which would predictably strengthen any state's UI program.

We observe that the strategy correctly identifies system modularization as core to states' ability to be able to make more and faster incremental improvements to software while maintaining (or improving) security and reliability, a fundamental prerequisite for government programs as they shift toward the more customer-driven, or "human-centered," approach to service delivery.

Some grantees clearly understood the value of these priorities even before these grants were made available to them, have already made significant progress toward them, and seem on their way to more progress thanks in part to the grants. Others appear to be on less certain paths toward these priorities, grappling with not just a new initiative but new (in this context) core concepts regarding how to design and implement software.

These changes are not easy, and every grantee team described facing a suite of interlocking challenges in the work. Teams are contending with how to align their own program needs and plans with the grant program's priorities, requirements, timelines, and incentives. Many lack sufficient internal state capacity for conducting user research, defining and collecting meaningful customer experience metrics, architecting and executing system modularization and integration, and planning and completing migration to the cloud (unsurprising, as most of these functions, while de rigueur in other contexts, are new to many state UI programs). Despite broad similarities between states' UI programs, multi-state cooperation has yielded some utility but has proven difficult to sustain without federal or third party support. States that outsource the work of developing and operating their UI systems face additional complexities and questions about how to reconcile USDOL's push for agile, modular, human-centered development practices with their contract-driven approaches. States that own their own UI system source code, possess a critical mass of in-house technical expertise, and have sustained a software development mindset and culture internally have generally enjoyed the most success in adopting those practices.

We observe additional opportunities to help all states modernize their UI systems and to increase the efficacy of the grants. We recommend actions to catalyze states' adoption of human-centered design research and of agile, modular software development practices; to help states understand and quantify their progress toward customer experience improvements and modernization; to create and support communities of practice among state program staff; to invest long-term in the Open UI Initiative and ensure it is eventually run by and for the states; and to ensure effective mechanisms for iterative feedback between the federal government and the states' UI programs.

Background

Unemployment insurance systems, the COVID-19 pandemic, funding for modernization, and the launch of the Open UI Initiative

Unemployment insurance (UI) provides temporary financial assistance to eligible workers who become unemployed through no fault of their own. In the United States, UI is run as a federal-state partnership: the federal government oversees the program and provides funding, guidance, and technical assistance, but each state and territory has different laws and regulations for its own UI program, administers it independently, and implements technology to that end.

During the COVID-19 pandemic, states' UI teams were subject to unprecedented claims volume while also attempting to implement several new UI programs created by Congress, and many states struggled with processing delays and system failures. According to the U.S. Department of Labor (DOL), the pandemic "exposed long-standing vulnerabilities in the system related to inadequate administrative funding, staffing shortages, and legacy technology."

In response, the American Rescue Plan Act (ARPA), signed into law in March 2021, included $2 billion "to detect and prevent fraud, promote equitable access, and ensure the timely payment of benefits with respect to unemployment compensation programs," including for related "Federal administrative costs ... for systemwide infrastructure investment and development related to such purposes; and to make grants to States or territories administering unemployment compensation programs ... for such purposes, including the establishment of procedures or the building of infrastructure to verify or validate identity, implement Federal guidance regarding fraud detection and prevention, and accelerate claims processing or process claims backlogs due to the pandemic." Pub. L. 117-2 §9032; see also DOL's index of ARPA program letters and related resources.

In August 2021, to lead the work of helping states and territories modernize their UI systems and to manage these ARPA funds, DOL announced the creation of the Office of Unemployment Insurance Modernization (OUIM). Later that year the department issued Training and Employment Notice No. 16-21 ("TEN 16-21"), announcing ARPA-funded grant awards to New Jersey and Arkansas to participate in a Claimant Experience Pilot. Other grant opportunities were also issued to improve processes and systems around fraud prevention and detection, equitable access, and benefit delivery timeliness. DOL published a report describing these efforts.

In May 2023, drawing in part on lessons from the Claimant Experience Pilot, USDOL published its IT Modernization Strategy for UI systems, asserting that "[t]he biggest obstacle states face is the high cost of adapting systems to meet changing needs, due to how those systems are designed and managed" and setting as its long-term goal a vision of an ecosystem built around open and modular solutions.

Unemployment Insurance Program Letter No. 07-23 ("UIPL 07-23") offered $600 million in total—up to $11.25 million per state—to conduct modernization activities pursuant to that strategy, but in June 2023, the Fiscal Responsibility Act of 2023, Pub. L. 118-5 Div. B, Title I, §24 (137 Stat. 27), reduced the overall ARPA appropriation by $1 billion, resulting in UIPL No. 07-23 being rescinded and the amount available for these purposes reduced. In July 2023, and in response to that reduction, DOL issued Unemployment Insurance Program Letter No. 11-23 ("UIPL 11-23"), announcing grant opportunities pursuant to the ARPA funding, including grants for IT Modernization:

> The condition of state UI technologies was a key reason that state UI systems were overwhelmed by the surge of claims at the start of the pandemic and were unable to more fully protect against fraud while implementing Congress's temporary extension of unemployment benefits to additional populations. As described in Section 4.d. of this UIPL, the Department is investing funds to help states adopt new strategies to modernize and rearchitect their UI programs to better defend against fraud threats now and prepare for challenges in the future.

In UIPL 11-23, DOL offered approximately $200 million for individual states and territories to receive up to $11.25 million each for projects addressing at least one of three categories—cloud migration, modular and Application Programming Interface ("API")-driven approaches, and measurably improving the customer experience (CX)—that "support modular and evidence-driven approaches to modernization that increase the agility and resiliency of UI systems." The letter explained:

> **Vision for Creating More Resilient and Responsive IT Systems.** An effective approach to modernization starts with the understanding that technology is always evolving and that state systems must be responsive to changing needs. It is critical for all states to develop a system architecture that can scale to meet increases in demand, which often occur at the same time states need to adapt to new federal programs and changing fraud threats.
>
> Many states struggle to adapt their systems due in part to how the systems were designed and the constraints that accompany legacy technology. The resulting inflexibility and brittleness of these systems means that even relatively "simple" changes can be prohibitively costly, time-consuming, and risky. Addressing these challenges will help systems to scale up when unemployment increases, while mitigating additional exposure to criminal actors, and making it easier for states to effectively integrate technologies that stop fraudulent claims before they are paid.
>
> Instead of monolithic system architectures, the Department encourages states to pursue modular and incremental approaches when modernizing their systems. This approach involves "breaking down" complex monoliths into smaller, more interchangeable components (i.e., modules) that are easier to change and maintain. Modular approaches also make it easier for states to integrate new technologies and may be accomplished using a wide range of tactics, including using standard interfaces, leveraging APIs, adopting cloud technology, using open-source software, and adopting user-centric and agile development practices.

IT Modernization grants were awarded in the order in which completed applications were received, up to the total available amount. On September 22, 2023, DOL announced $204 million in awards for 18 states and the U.S. Virgin Islands. The grantees were given 90 days to submit full project plans for up to a five-year period of performance commencing October 1, 2023.

In late September 2023, DOL engaged with the National Association of State Workforce Agencies (NASWA)'s UI Information Technology Support Center (UI ITSC) to support grantees UI modernization projects implemented through the grants as well as additional long-term strategic activity in furtherance of USDOL's modernization vision. NASWA engaged the Beeck Center for Social Impact + Innovation at Georgetown University for additional support, including the production of this report. In October 2023, DOL and NASWA's UI ITSC held a series of webinars for the grantees covering each of the IT Modernization grant program's three categories. In November and December 2023, DOL, UI ITSC, and the Beeck Center met virtually with and provided additional support to most of the grantees.

In December 2023, OIUM announced the Open UI Initiative,

> ... a new effort formed in collaboration with the UI Information Technology Support Center (UI ITSC), a division of the National Association of State Workforce Agencies (NASWA), and in partnership with the Beeck Center for Social Impact & Innovation, a Georgetown University center focused on improving government systems. The overarching goal of the Initiative is to change how states build and buy technology by:
>
> + Establishing a common framework and approach for modular UI system development,
> + creating market-based incentives that drive innovation, and
> + providing more choices for states in terms of how they invest in technology to meet the goals of the UI program
>
> .
>
> This will include efforts to foster an ecosystem of open and modular solutions that supports the Department's strategy of enabling more flexible and resilient IT systems, while driving efficiencies in software development and acquisition, and creating new opportunities for states and vendors to collaborate on solutions.

In February 2024 OIUM and NASWA built on this announcement with a public webinar. A Technical Advisory Group, created to provide guidance and input on the development of the Open UI framework and consisting of representatives from 12 states, USDOL, and at-large expert contributors, was first convened in late March 2024.

This report

This report summarizes the types of projects grantees are implementing pursuant to the IT Modernization grants, challenges, areas of opportunity, identified effective strategies and recommendations for how state modernization efforts can be supported moving forward.

To inform this work, we reviewed draft project plan submissions and related documents provided by the grantees. Between November 2023 and February 2024, we met via Zoom with representatives from 18 of the 19 grantees. Grantee participation in these meetings, and provision of documents for our review, was strictly voluntary. The meetings had the dual purpose of providing assistance to grantees in shaping their project plan submissions and providing us with an opportunity to learn more about those plans.

This report is an early look at projects with five year time horizons. Our research was based on draft versions of grantees project plans, prior to their approval by USDOL approved; at the time, those states were still working with USDOL to improve those plans. A second report, focused on key insights, lessons learned, and future opportunities related to operationalizing the Open UI Initiative and implementing protocol-based modules with pilot states, is intended in FY2024 Q4.

Initial observations about the modernization strategy, the grants, and the Open UI Initiative

The instantiation of DOL's modernization strategy in the Open UI Initiative ("Initiative") is a seminal development in the evolution of how states design and implement service delivery technology for federally-funded, state-administered programs, and how federal departments support them.

Before, but especially during, the COVID-19 pandemic, UI programs—and many other government service delivery programs—struggled with technology issues of scalability, fraud, and adaptability to fast-changing policies and users' needs. ARPA gave DOL an unusual opportunity to help states address these issues by incentivizing and helping states to upgrade not only their technologies, but their approaches to service delivery and to the federal-state service delivery relationship. None of this is easy for state programs built for and accustomed to a different set of expectations and ways of working, but the funding provided by the modernization grants and the launch of the Initiative represent two important supporting steps.

DOL's strategy, the modernization grant program, and the Initiative together represent a key shift toward thinking not merely about designing each system to meet present day requirements, but about pathways toward organizational and technological adaptability and resilience, to ensure that future iterations of systems are easier to adapt to meet ever-changing needs, challenges, and understandings about how people interact with those systems.

The strategy correctly identifies system modularization as core to those efforts. Modular software development is well understood to facilitate system scalability; promote code reusability and portability, which in turn reduces cost and redundant work; make systems easier to understand, change, and update; enable more parallel, collaborative development, accelerating work; and simplify test automation and fault isolation, leading to more reliable, secure systems.

In particular, being able to make more and faster incremental improvements to software while maintaining (or improving) security and reliability is a fundamental prerequisite for government programs as they shift toward the more customer-driven, or "human-centered," approach to service delivery demanded by the 21st Century Integrated Digital Experience Act, the Digital Service Playbook, President Biden's Executive Order on Transforming Federal Customer Experience and Service Delivery to Rebuild Trust in Government, and related policies and guidance, and supported and modeled by the United States Digital Service and the General Services Administration's Technology Transformation Service in their work with and for federal agencies. Modular or "loosely coupled" architecture has long been required in some contexts at the Department of Health and Human Services and the Department of Defense, and is core to the guidance offered in 18F's State Software Budgeting Handbook. The Initiative thus represents a singular investment in the understanding that a model, modular framework can help states achieve significantly better outcomes. The grants' parallel prioritization on developing customer experience (CX) metrics helps ensure those improvements will be measurable.

The Initiative also correctly prioritizes and facilitates a level of inter-governmental collaboration that often goes undervalued and unsupported. Too often, the technology used to deliver state programs' services has been procured or developed in isolation, despite broad similarities in program needs from state to state; and federal programs' involvement has been largely limited to disbursing funds and overseeing compliance with federal policy requirements. At the Beeck Center we have long advocated for more and better cross-state collaboration in spaces where states' software needs significantly overlap. We have written previously on the greater role the federal government can play as a convener and catalyst for such collaboration. And we are keenly aware that, internationally, open shared frameworks like X-Road and eGov DIGIT are improving outcomes for governments.

Types and goals of states' UI modernization projects

Despite fundamental commonalities between the grantee states' UI programs, there was significant variation across the draft project plans shared with us. States have many shared needs, but each state has its own governing laws and policies; independent technology, procurement processes, and ecosystem; UI program history; budget pressures, cycles, and timelines; and series of decisions and circumstances that has led it to its current state. Happily, every state program we spoke to was already in the process of updating, modernizing, or replacing some or all of their UI systems. Because no program was starting a brand new project exclusively instigated and funded by the UIPL 11-23 IT Modernization grants, all grantees' plans for utilizing those grants were necessarily shaped, in part, by how the IT Modernization grant's priorities—customer experience metrics, APIs and modularity, and cloud migration—fit into or alongside existing plans and work. Many programs had also been awarded DOL Integrity and/or Tiger Team grants, adding complexity to grantees' work/funding matrices (the interconnections of which they were expected to articulate).

The grantees' UI IT modernization activities fell into three broad categories:

1. Some programs are in the midst of completely replacing their existing UI systems with a single, new, vendor-supplied system.
2. Several programs are in the midst of executing on existing modernization plans. These programs are making a wide variety of incremental changes to their mix of in-house and vendor-supplied UI subsystems.
3. A few programs are in the midst of full conversions to microservices-based UI systems, owned and operated by the state.

List of stated goals in draft project plans

There was wide variation in how the grantees' draft project plans were organized and presented, as well as in the nature and scope of their various project goals. Some goals were narrowly tailored to a specific feature, subsystem, or target audience; others were system-wide or were aimed at improving how the program organization supports ongoing modernization priorities. As a collection they defy easy categorization; the plans were as unique as the grantee states and their systems.

The following table represents a sampling of goals included in grantees' draft plans. One or more grantees included each of the following goals in their plans. (Note: this list is not comprehensive. We did not have access to all grantees' plans.)

Draft project goal	Categories
Implement or update workflows or workflow automation	backoffice
Add or improve reporting tools	backoffice
Add, update, or improve an analytics system	backoffice
Implement disaster recovery	backoffice
Implement a basic ledger/accounting system	backoffice
Add, update, or improve helpdesk software and procedures	backoffice (add-on)
Add, update, or improve a system knowledge base	backoffice (add-on)
Add, update, or improve system dashboards	backoffice (add-on)
Achieve faster and/or easier testing/deployment cycles	capabilities
Build internal customer experience capacity	capabilities
Implement DevOps practices	capabilities
Achieve vendor independence and become "product owners"	capabilities
Implement automated system testing	capabilities
Replace, update, or simplify claimant-facing user interface, forms, or portal	claimant
Add or improve plain language interfaces or correspondence	claimant
Add a generative AI chatbot feature	claimant (add-on)
Add, update, or improve user tutorials	claimant (add-on)
Replace the payments module	module-specific
Make improvements to the employer portal	module-specific
Migrate from mainframe, old, or otherwise at-risk systems	system
"Cleanse" (reformat, normalize, and debug) existing data in preparation for a future migration	system
Break down system monoliths	system

As this list makes clear, one significant differentiator of plans is in their scope of change. Some projects are focused on developing and deploying a specific set of new and/or improved products, features, or changes. Other teams have clearly oriented their work toward improving underlying technology and organizational capabilities, to improve how their teams operate.

Identified effective strategies in state UI system modernizations

The modernization goals of cloud migration and measurably improving customer experience—despite being relatively new federal guidance—seemed generally well understood and accepted in the state organizations we interviewed. None reported significant struggles in garnering leadership support for these goals for budgeting and prioritization purposes.

Acceptance and understanding of modular, API-driven approaches is more nascent in many states, and was the focus of our inquiries into identifying factors contributing to success in states where adaptation to this approach is already underway.

Success factors in leading state modularization programs

States that are already successfully modularizing their UI systems share some common traits:

Ownership of the UI system code

States can't refactor (i.e., reconfigure to be more modular) code they don't control. The most successful teams we spoke with all had possession and control of the source code for their UI systems, making it possible to revisit architectural decisions and update some or all of the system whenever such work is prioritized and funded. States that have outsourced some or all of their UI systems have considerably less control over whether and to what extent those systems are modularized; they will have to determine whether they should invest in encouraging their existing vendors to do so, and whether those vendors can and are willing. Vendors can and do, of course, reap many of the same benefits from their own systems being modular. But vendors that sell complete systems are incentivized not to pass those benefits along to the buyer; the non-modularity of a system (from the buyer's viewpoint) can act as a "moat" for off-the-shelf system sellers by keeping the cost of switching away from that system (in whole or in part) high.

In-house technology leader and critical mass of core expertise

To own and maintain source code requires a team with relevant expertise. The successful teams we interviewed all had such teams. In each grantee state, there was an acknowledged technology leader who had instigated and was leading the group through modularization. And all of them had engineering teams that were a blend of in-house government staff and software developers on contract through vendors.

Expert continuity and development culture

The successful teams we interviewed all had staff and contractors who had been with the team for several years, despite the larger compensation packages likely available to those developers in the private sector. Factors our interviewees cited to account for this longevity included (1) engineering-friendly environments, where collaborative approaches are utilized and engineers' expertise is respected and sought in problem solving, as opposed to engaging in top-down decision-making and task assignment without consultation; and (2) the fact that developing a microservices-based system using modern tools and practices makes the work very résumé-friendly, increasing the future value of engineers to other organizations in both the private and public sectors.

Executive support

All the teams we interviewed cited supportive executive managers as vital to their modernization paths. In this context, support largely consists of committing or allowing the team to commit to their modernization plans, which at times means having to defend constraints on how many change requests the team will take on from other parts of the UI organization. Some had lived through cycles of more and less supportive managers, which affected the pace of their modernization work. One recalled generating an analysis of the virtues and drawbacks of modernizing in-house code versus outsourcing the entire system; the executive agreed with and then defended that analysis so the project could proceed, despite political pressure to consider changing their approach.

Effective internal documentation

The value of systems documentation is well understood and commonly accepted. Successful UI teams have all dedicated ample resources to thoroughly documenting their modernized systems.

Modularization is its own success factor

One state that has migrated some of its system into microservices reported: "Right now, a new deployment takes a whole day. [But] for the microservices, it's 30 seconds." Predictably, this has enabled more changes, more quickly and inexpensively. As more of their system is modularized into microservices, they are able to maintain responsiveness to business and customer needs with fewer development resources while snowballing the balance of those resources into completing the modularization.

Related guidance about effective strategies for UI systems

Other organizations have previously studied and collected useful guidance for the modernization of UI systems.

+ USDOL's Office of UI Modernization has published several practical resources: https://www.dol.gov/agencies/eta/ui-modernization/promising-practices
+ The Beeck Center's Digital Benefits Network published this summary of promising practices: https://beeckcenter.georgetown.edu/promising-practices-in-state-unemployment-insurance-digital-service-delivery/
+ The Century Foundation recently published its Guide for Advocates: https://tcf.org/content/report/improving-state-unemployment-insurance-technology-a-guide-for-advocates/
+ New America published a Playbook for Improving Unemployment Insurance Delivery, including a section about technology modernization: https://improveunemployment.com/

Challenges reported by state UI program teams

UI program officials cited a wide variety of challenges they face in modernizing their systems.

Expertise

Some participants noted that the new methods and technologies encouraged by the grant (modularization, cloud, agile, CI/CD, user experience) required expertise their teams did not have, or did not have enough of, for making in-house decisions and for evaluating vendor offerings and vendors' work in those areas. Contracting to obtain this expertise is a common strategy, but doing so can create potential conflicts of interest for those contractors, and does not solve the longer-term problem of developing those core competencies on the buying side of the procurement equation.

Modularization Strategy

Several participants noted that modularization required making important choices about where to start, how granularly to scope modularization, and how far to go toward completely converting systems to microservices. States were figuring out answers to these questions with varying degrees of success and confidence.

Cloud Migration

State UI programs, and their departments and their statewide IT efforts, are in widely varying stages of cloud migration. Some have well-developed strategies and have been migrating for many years; others are near the beginning of the process. Questions still remain for some about core migration strategy, e.g., whether to "lift and shift" entire systems into the cloud and then modernize them, or modernize "on the way" to take advantage of migration.

Difficulty establishing and baselining success metrics

Participants noted that collecting baseline data and spending time and money on establishing success metrics was challenging given the urgency to proceed with project work. While acknowledging that guidance and examples of success metrics were provided by DOL, grantees nonetheless expressed initial uncertainty about expectations regarding metrics, and about the practicality of measuring baselines, especially if baseline metrics collection was not built into the project plan milestones. Some expressed concerns about whether baseline metrics could be collected at all, if their previous or existing systems were not capable of yielding the necessary data. And some participants acknowledged that in their organizations there might be incentives aligned against the idea of collecting and sharing baseline metrics. These difficulties may have been preliminary; in follow-up conversation, DOL reported to us that most grantees came up with metrics and accepted feedback to make metrics stronger over subsequent project plan drafts.

Challenges to benefiting from multi-state consortia

Several states have, at some time in the last several years, participated in multi-state consortia seeking to work together on common UI modernization issues. There was general agreement among participants who talked about consortium work that their participation was worthwhile, and yielded helpful results, including some common understandings of how to architect UI systems. But there was also agreement that sustaining cooperation was difficult. As one participant noted: "We were singing [together], but it expanded the complexity of the system exponentially and eventually became untenable. States are different under the covers, [and] have different requirements."

Vendor modularization and reliance

Some participants questioned whether meaningful modularization was a worthwhile and realistic goal for states that rely on a vendor to provide their entire UI system. One participant also expressed concern about the long-term cost of being locked into various vendor systems they were using or considering. Another shared that some of their colleagues in other states privately felt the same way.

Some challenges noted by the grantees were related to the intersection of their program-specific needs with the IT Modernization grant program itself.

Squaring states' program needs with grant program priorities, requirements, timelines, and incentives

Priorities and requirements

Several interview participants described struggles in reconciling holistic plans that meet their program's comprehensive, ongoing needs with meeting the priorities and requirements of the IT Modernization grant and the other available grants, including the Tiger Team and Integrity grants, all of which are one-time (if long-term). One state noted specifically that there were difficult tradeoffs in investing their limited resources in the IT Modernization grant's priorities versus important "fire-fighting" work that was needed to, for example, move off of costly, at-risk mainframes and legacy systems. Another noted that UI-specific grant funding and requirements were sometimes difficult to reconcile with holistic planning that spanned multiple state programs and departments.

Timelines

In addition to competing output priorities, several grantees also noted difficulties in the misalignment between the funding and deliverable time horizons of the IT Modernization grant and the timelines those states had planned for grant-relevant activities in their preexisting, ongoing modernization efforts. They felt they faced choices about whether to reorder work priorities to make best use of the grant opportunity. One described strains between, on one hand, their need to do large, stepwise "plumbing" work like whole system migrations and methodology changes like moving to more DevOps-aligned ways of working, which can take considerable time, and on the other, the perceived need to demonstrate more frequent, deadline-driven progress against their grant-specific project plans and other grant-specific criteria. These difficulties can be especially pronounced for smaller states with limited resources where it's harder to parallelize delivering against multiple priority tracks.

Incentives of the award process

As noted above, IT Modernization grants were awarded "in the order that completed Initial Applications [were] received, as long as funding remain[ed] available," and, in almost every case, at a flat rate of $11.25 million per state. (See Appendix A.) This approach was understandable given the agency's time and resource constraints and the desire to get program money into states' hands expeditiously. It succeeded in encouraging states to apply quickly. On the other hand, it did not incentivize states to demonstrate how far their plans would go in furthering the grant program's priorities, nor did it incentivize states to develop projects that might be costlier up front but potentially benefit multiple states through shared systems, design, and/or code. Given more time, competitively awarding fewer, larger awards on the basis of proposals' likelihood of success and impact might have both achieved better individual state exemplars and motivated applicants to propose more work involving multi-state cooperation and/or benefit.

For states that had their own, ongoing UI project plans, the IT Modernization grant and project plan submission processes required figuring out how to fit or recast portions of their program's pre-existing UI system plans to enable the program to spend grant money on those plans without running afoul of grant requirements. It's early to draw conclusions given that, at the time of this writing, only some grantees' project plans have been approved (and we have not seen the edited, approved versions of those plans); but such recasting seemed to be proving easier for some than for others.

Other challenges cited related to reconciling their work with the mechanics of the IT Modernization grant included:

Squaring agile approaches with milestone planning requirements

Multiple participants noted that while the grant encourages teams to adopt agile, continuous improvement-oriented system development methods, the grant's project planning requirements ask states to plan at the outset multiple years' worth of milestones with predetermined resourcing and outcomes—a waterfall project management scheme that impedes the agile practices the grant is intended to help the programs cultivate. For example, UIPL 11-23's application requires a "Project Timeline for Each Activity," consisting of the following:

> Provide a list of the dates and the milestones for each project/activity. The timeline should include the completion of the work, the designation of specific tasks to appropriate parties, the issuance of a request for proposal, if appropriate, the projected start date, the proposed dates to begin and complete testing (if necessary), and the proposed date for full implementation of the project/activity. These milestones and dates will be used to monitor the implementation of the project/activity.

UIPL 11-23 at II-3. See also the program's "Key Milestones (for each Activity)" instructions at IX-4.

This was particularly a concern when attempting to define outcome metrics as required for the grant, as some grantees had not yet done enough learning about their users' needs to be able to specify which metrics they intended to prioritize improving. Reconciling these competing interests may require grantees to expend additional time and resources regularly amending their project plans and seeking federal approval for those amendments.

Period of performance

Several participants noted that while the period of performance for the Modernization grant started in September 2023 when the notice of award was issued, at the time of our interviews, the grant money was still not available to them. Once the grants are approved and money is made available, grantees will still need time to issue and award contracts for the work, make changes to existing contracts, and/or recruit, hire, and onboard new employees; but the clock will have been ticking on their grant deliverables for many months. (No grantees explicitly requested that the period of performance be modified, and it was unclear whether any considered such modification possible (other than to extend the period of performance in the last 90 days, still several years away).

Vendor capacity

One grantee expressed concern that the grant's timeline would add pressure to their primary vendor, potentially overloading their capacity and creating a bottleneck.

Permitted uses of grant funds

Several grantees had questions about how they are and are not allowed to use IT Modernization grant money. Some asked whether the grant can pay for ongoing or subscription-based cloud services, especially in cases where those services encompass more than just UI and grant-specific priorities.

Areas of opportunity for helping states meet UI modernization goals

Human-centered design research for improving customer experiences (CX)

Most grantees submitted plans for improving CX. In many cases, those plans seemed based on assertions about, not evidence of, what they anticipate will improve customers' experiences. None of the plans we reviewed were backed with, or included budgets and time for, conducting design research (sometimes interchangeably called "user research" or "experience research"). Most state UI programs have insufficient expertise to do or meaningfully commission such research (whether in-house and/or through vendors) and to distinguish the value of deep qualitative user research versus more traditional analysts' tools like surveys and focus groups, nor do they have experience translating research insights into design work and changes. Cultural barriers to adding and utilizing design research capacity also sometimes exist in organizations that have not previously been aware of the need for, or valued, such capabilities. Finding ways to help increase awareness of the value of, and investment in, design research capacity and capabilities in UI programs would likely contribute significantly to improved CX and programs' ability to measure such improvements.

Adoption of Agile / Continuous Improvement practices

While some states have enthusiastically embraced Agile as an important software development practice, many grantees' modernization plans (with or without the grant) are still not themselves especially Agile-oriented. A primary motivation of the grant is to encourage and require states to move their UI programs toward more agile practices. There are no federal government-wide or departmental standards requiring such a shift (although the U.S. Office of Management and Budget has encouraged such practices for several years now, as has the General Services Administration in its State Software Budgeting Handbook), and most states have no requirements for their departments and programs to make these kinds of changes, although related guidance is beginning to emerge in some states. As with CX, in some UI programs, there may be expertise gaps as well as cultural and procedural obstacles to adoption of Agile development practices. This presents opportunities for surfacing successful examples of programs using and benefiting from Agile practices, especially in state UI programs; and for enumerating what programs stand to gain from adopting such practices, for dispelling myths and doubt about them, for sharing how other programs have adapted to them, and for making adoption itself a success metric for program organizations.

Direction and support for measuring modernization success and customer experience improvement

DOL provided explicit guidance and examples for measuring success and improvement in UIPL 11-23 and elsewhere. Nonetheless, the challenges participants said they encountered in attempting to establish measures of success indicate a clear opportunity to help UI programs more in this space by making available additional guidance and help for establishing success metrics, translating federal UI performance measures into measurable customer service metrics, and collecting baseline data in programs and systems that have not previously been amenable to such data collection.

Support for building community among states' program teams to share learnings

Several participants expressed interest in talking to UI program staff in other states to learn from each other. There is a clear opportunity to facilitate such conversations by providing the necessary coordinating and support functions to cultivate communities of practice.

Consortia historically have served a different but related purpose, and have been one of the only mechanisms for bringing UI staff together to discuss common concerns, tools, or approaches. While UI consortia have proven difficult to sustain in the past, there are successful models for multi-jurisdiction shared software consortia. An opportunity exists to learn about those models and consider how they might help state UI programs work together successfully.

Support for feedback loops between state and federal program offices

Given the challenges participants noted regarding the federal grant process and requirements, there exists an opportunity to create new modes of sharing states' feedback with an eye toward improving on those challenges, whether in amendments to the existing program and/or for reference in future iterations of such programs.

Recommendations for supporting states' UI modernization efforts

Given the challenges reported by grantees, and the areas of opportunity identified for helping them meet those challenges, in this section we suggest both short- and long-term recommendations. We note that some of these recommendations may reach beyond what USDOL contemplates under ARPA.

Require, conduct, and support human-centered design research.

Improving customer experiences begins with understanding those experiences through research. As noted above, few states have applied human-centered design research resources to their projects, nor had any included a budget for design research in the draft project plans we saw. This is not unusual: most state government agencies don't have design research capacity embedded in their organizations, and while a few states have begun to roll out orders to require or encourage such research, and/or teams to catalyze that work, it is not generally a de rigeur part of most state programs' technology and service development processes and expectations. USDOL, however, has noted the value of the use of such qualitative research into users' experiences, and it is core to the federal government's digital service guidance. Conducting that research is an essential component of setting and achieving measurable CX goals to ensure teams are collecting the metrics that matter most.

Uptake of design research practices to improve CX would benefit from:

+ **Requiring it.** An explicit requirement in future grants to use design research to qualitatively understand users' experiences is the most straightforward, if blunt, way to make sure that program teams do so, and would give them cover to budget time and money for it in environments where it might be underappreciated or deprioritized. While the UIPL encourages an agile, human-centered approach to software development, including "seeking early and frequent feedback from users and other stakeholders," an explicit call to budget for and engage in design research would ensure that states close the "build, measure, learn" loop that is otherwise well defined in the grant.
+ **National baseline design research.** The states' and territories' UI programs are all as different as their constituencies, but they have many aspects in common. While states begin to build their own capacity for design research, commissioning baseline research could create a useful example for states to follow and build on, give states language and a scaffold for framing more localized research, and provide a bridge solution until states have developed sufficient internal capacity to conduct their own research.
+ **Support for sharing design research findings.** The research states have conducted is potentially very useful for other states, despite contextual differences from state to state. Low-cost mechanisms for sharing those findings could also improve awareness and catalyze adoption of design research practices. See Communities of Practice below.
+ **Support for states to grow their product design and design research capacity.** There are many resources for helping organizations understand how to advocate for, build, enable, and increase these capabilities. Guidance for how and where to find and navigate those resources could help states past the initial hurdles of getting started.

Require and support adoption of Agile software development practices.

Uptake of Agile software development practices has been somewhat better, with several states demonstrating in their project plans and in our conversations that they have embraced more iterative ways of working and the tools that enable them. Still, some programs appear less focused on this goal, with Agile receiving only passing and vague mentions, or no mention at all, in some project plans, despite USDOL's unambiguous advocacy (its IT modernization strategy cites Agile practices in its list of "values and characteristics to orient around," and UIPL 11-23 both identifies Agile as a "promising practice" and explicitly names "improved adoption of Agile software development practices" as a desired outcome that states should measure).

Agile as a requirement? As with design research, uptake of Agile development practices could benefit from an explicit requirement in the grant to demonstrate the state's use or intended adoption of Agile practices—not just the vendor's—as a condition for funding. Agile is particularly difficult to introduce in environments primarily driven by procuring pre-written software from vendors. A small number of such grantees reported in their project plans that their program's request for proposals (RFPs) required that "the vendor follows agile development methodologies," but if a vendor's software is already written—that is, if you're not participating in most of its development—then Agile is by definition inapposite, and its benefits unavailable to you, except at the margins of its customizability. (Such a requirement in an RFP is also likely to be difficult to monitor and enforce post-award.) If the IT Modernization grants are intended to encourage states to adopt Agile practices, they may not be appropriate for states buying off-the-shelf systems.

Other forms of support for spurring adoption of Agile practices should include:

+ **guidance** for integrating Agile into government environments, especially those where sunk costs in other methods may appear daunting and/or where Agile practice leaders are in short supply;
+ facilitated **mechanisms for sharing** successful examples from UI programs where Agile has taken root; and
+ **help for procuring** the services of vendors who are themselves practitioners of Agile software development, both for coaching teams through adoption and for the work itself.

Provide additional direction for and examples of CX and modernization metrics.

Despite explicit guidance and examples provided in UIPL 11-23, many grantees struggled to define concrete metrics for both CX improvement and system modernization in their project plans. Some may simply have not defined them in the initial draft project plans we saw, and may have achieved or may have plans to achieve more specificity. Some of these difficulties might be traced back to other challenges discussed in this report (squaring timelines with priorities, folding grant priorities into existing plans), but a general lack of confidence in how to approach these questions was evident in several interviews (which, again, took place before USDOL reviewed and provided feedback for the plans). It could benefit many states if USDOL were to collect feedback about and provide additional examples for these metrics: when and how to define them, how to collect baseline ("before") metrics, how to measure them over the lifetime of the project plan and beyond, and how to use them.

Facilitate communities of practice.

In the interviews and in the webinar sessions that preceded them, civil servants from several grantees expressed interest in participating in communities of practice related to the priorities of the modernization grant. Facilitating communities of practice—not only as an alternative to the open licensing of source code per 11-23, but across all the states—can be a relatively low-lift way to help states learn from each other, surface common problems, and generate priorities for federal/state discussions. While eventually these communities should ideally be supported by the states, third party support for launching them would help them surmount collective action obstacles that have prevented them from emerging before now.

Invest long-term in an Open UI Initiative run by and for the states.

In many of our interviews, it was evident that the states would benefit from a clear articulation of a model framework for designing and developing a UI system: its user journeys, component architecture, interoperability and data exchange protocols, accessibility and inclusivity expectations, and analytics guidance for measuring efficacy.

USDOL observed that same need last year when it launched its Open UI Initiative. The Initiative is thoughtfully aligned with the department's priorities as reflected in the IT Modernization grant and its IT modernization strategy.

If successful, the Initiative's market-shaping power will begin to bear fruit early on, but it is fundamentally a long-term project that will require commensurate support. In the long run, the Initiative, its framework, and any other utility it generates should be owned and supported by the states, who are ultimately responsible for the success of their systems, are the beneficiaries of the framework, and are together capable of providing the Initiative with coalition-driven stability.

Ensure a process for iterative feedback between the federal government and the states' UI programs.

Mike Bracken once wrote: "In an analogue world policy dictates to delivery, but in a digital world delivery informs policy. This is what agile means for Government and its services."

Delivery needs to inform policy continuously. The webinars and interviews presented grantees with opportunities to ask questions and provide feedback about grant priorities and processes, but those events were one-time. The same type of active feedback loop advocated in the grant's priorities for states' software development should also facilitate ongoing conversations between the state programs' modernization leaders, the federal public servants responsible for the program, and, ideally, those in Congress responsible for the program. Those ongoing conversations—about how laws, regulations, and administrative policies play out in and affect service delivery, efficacy, and customer experience; about what's working and what's not, about what's been predictable and what's been unexpected—are vital to the continuous improvement of the programs.

Appendix

A. IT Modernization Grant Recipients

Draft project goal	Categories
Georgia Department of Labor	$11,250,000
Hawaii Department of Labor and Industrial Relations	$11,250,000
Idaho Department of Labor	$11,250,000
Illinois Department of Employment Security	$11,250,000
Indiana Department of Workforce Development	$11,250,000
Kentucky Department of Workforce Development	$11,250,000
Maryland Department of Labor	$11,250,000
Mississippi Department of Employment Security	$11,250,000
Missouri Department of Labor and Industrial Relations	$11,250,000
Montana Department of Labor and Industry	$8,000,000
New Hampshire Department of Employment Security	$11,250,000
New Jersey Department of Labor and Workforce Development	$11,250,000
New Mexico Department of Workforce Solutions	$6,012,676
New York State Department of Labor	$11,250,000
Job Service North Dakota	$11,250,000
Utah Department of Workforce Services	$11,250,000
Virgin Islands Department of Labor	$10,200,000
WorkForce West Virginia	$11,250,000
Wisconsin Department of Workforce Development	$11,250,000
Total	**$204,212,676**

Source: https://www.dol.gov/newsroom/releases/eta/eta20230922

B. Project Goal Categories

Category	Description
Add-on	The goal focuses on delivering a specific additional feature or function.
Backoffice	The goal focuses on a specific additional feature or function for UI program and/or system administrators.
Capabilities	The goal focuses on improving the ability of the UI team and system to adapt and improve quickly and safely in response to users' needs.
Claimant	The goal focuses on a specific claimant interface or interface element.
Module-specific	The goal focuses on changes to one specific module in the UI system.
System	The goal focuses on specific work to prepare the UI system for future changes.

About the Beeck Center for Social Impact + Innovation

The Beeck Center for Social Impact + Innovation at Georgetown University seeks to improve people's daily lives by helping governments utilize data, design, technology, and policy to better meet the needs of their residents. An anchor of Georgetown University's Tech and Society Initiative, the Beeck Center works alongside public, private, and non-profit organizations to identify and establish human-centered solutions that help government services work better for everyone, especially the most vulnerable and underserved populations. The Beeck Center's work was recognized on Fast Company's 2023 Next Big Things in Tech list. For more information, please visit beeckcenter.georgetown.edu.

About the project

The Beeck Center is supporting the National Association of State Workforce Agencies' Unemployment Insurance Information Technology Support Center (UI ITSC) in implementing the first phase (Phase 1) of the U.S. Department of Labor's Open UI Initiative (the Initiative).

In May 2023, the Department of Labor outlined its strategy for UI modernization, which focuses on helping states adopt a continuous approach to modernization. In December 2023, pursuant to that strategy, the Department announced its new Open UI Initiative. The Initiative seeks to change how U.S. states and territories build and buy the technology that supports their unemployment insurance ("UI") programs by establishing a common, modular framework and approach for UI system development, to increase the scalability and resilience of those systems, make them easier to maintain incrementally, encourage reuse of existing software, and integrate new solutions through standard interfaces and an API-first approach. The Initiative aims to create market-based incentives that drive innovation, and provide more choices for how states can invest in technology to meet the goals of the UI program.

beeckcenter
social impact + innovation
GEORGETOWN UNIVERSITY

BEECK CENTER FOR SOCIAL IMPACT + INNOVATION
37th and O Streets, NW, Washington DC 20057 | beeckcenter@georgetown.edu