Modernization Playbook

An Agency Guide to Digital Transformation – version 1.0

2021

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Introduction

Now more than ever, people rely on the State of Oregon to provide essential services that keep them healthy and safe and enable them to live fulfilling lives. Whether enrolling for healthcare or unemployment benefits, paying their taxes, tracking student's progress in school, or managing a public health crisis, the people of Oregon rely on the state's information technology (IT) systems—often seeking such services in their times of greatest need. Unfortunately, many of the state's IT systems have not aged well, and have become increasingly complex and difficult to modify to adapt to changing circumstances.[1] Beyond the rigidity and fragility of these systems, potential security vulnerabilities, and associated IT staffing challenges, the long-term total cost of ownership (TCO) of maintaining these antiquated systems may exceed the cost of replacing them. Furthermore, with the accelerated digitalization of our personal lives, there is a growing gap between customer expectations and their experience with state IT systems.

Expecting an individual to navigate the complexity of state government to learn about potential benefits eligibility or comply with regulatory requirements, complete any number of seemingly duplicative forms, and to be required to visit one or more state office locations to access services goes beyond mere inconvenience—for our most vulnerable populations, these administrative burdens represent barriers to access and reinforce existing inequalities.[2] Eliminating these administrative burdens requires putting people at the center of modernization, embracing principles of human-centered-design (HCD), customer experience (CX), and design thinking. The premise that the state cannot afford to invest in customer service is a false choice.[3] While it may not be visible as a budget line-item, the state incurs a cost for every frustrated citizen interaction; be it in the form of increased workload by front-line staff, reputational damage, or intervention by individual Legislators advocating on behalf of their constituents.

Historically, state IT systems have been designed with an inside-out perspective; i.e., from the standpoint of individual program units or internal agency divisions seeking to digitize existing business processes. This narrow perspective has implications both for customer service (i.e., the people of Oregon) as well as the ability of agencies to leverage the data they steward on behalf of the public as a strategic asset, both within and across program areas. In terms of CX, the inside-out perspective tends to over-emphasize the importance of individual client interactions versus the overall customer journey. Taken together, the persistence of legacy IT systems and manual processes, a lack of human-centered-design (HCD), and the consequent failure to meet public expectations have contributed to the erosion of trust in state government.

As a long-term journey to improve agency performance and efficiency, modernization offers a path forward for agencies to improve services while transitioning to more nimble and sustainable technology. Recognizing the urgent need to modernize state IT systems and lay the foundation for digital transformation, the *Governor's Action Plan for IT, User Friendly, Reliable and Secure: Modernizing State Information Technology Systems and Oversight*

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[1] For example, an Oregon Employment Department (OED) analysis estimated that it would take between 2,000 to 6,000 development hours to eliminate the now infamous "waiting week" from its mainframe code to take advantage of the Federal waiver. This is just one of several developments stemming from the continuing economic consequences of the COVID-19 and the establishment of new federal programs (i.e., Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020) that require changes to OED's legacy systems to accommodate expanded eligibility for unemployment benefits and changed the criteria by which people qualify.

[2] Julian Christensen et al., "Human Capital and Administrative Burden: The Role of Cognitive Resources in Citizen-State Interactions," *Public Administration Review* 80, no. 1 (January 2020): 127–36, https://doi.org/10.1111/puar.13134.

[3] Tony D'Emidio et al., "The Global Case for Customer Experience in Government," Public Sector Practice (McKinsey & Company, September 2019), https://www.mckinsey.com/industries/public-and-social-sector/our-insights/the-global-case-for-customer-experience-in-government.
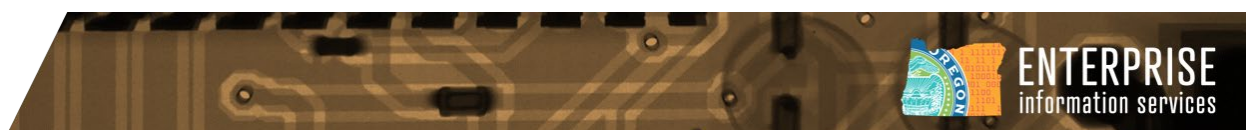
called on Enterprise Information Services (EIS) to partner with Executive Branch agencies in the development of multi-year IT modernization plans for retiring legacy systems and optimizing service delivery.[4] As referenced in the *EIS 2020-23 Strategic Framework – version 1.0*, Assistant State Chief Information Officers (ASCIO) will:

- Develop business-driven Agency IT Strategic plans, and
- Develop a set of consistent, coordinated, and collaborative multi-year modernization strategies for each of the six policy verticals: Administration & Business Services, Education, Healthy People, Natural Resources, Public Safety, and Transportation & Economic Development.[5]

Modernization offers the potential to fundamentally transform how state agencies deliver services to the people of Oregon. It encompasses more than planning, assessment, and specific application migrations. It represents a change in culture, a new way of doing business, and a means to ensure alignment between business and IT leadership. In short, modernization is not an IT initiative, rather it is an opportunity to reimagine how the state delivers services to the people of Oregon. This playbook supports the objectives outlined in the *Governor's Action Plan for IT* and the *EIS Strategic Framework 2020-2023.* Additionally, it provides guiding principles to align agency modernization programs to a common vision for modernization and digital transformation.

> **Modernization Vision.** *"Optimizing essential services that the people of Oregon rely on through resilient, adaptive, secure and customer-centered digital transformation."*

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[4] Kate Brown, Nik Blosser, and Terrence Woods, "User-Friendly, Reliable and Secure: Modernizing State Information Technology Systems and Oversight" (State of Oregon, September 24, 2018).

[5] Terrence Woods, "Strategic Framework 2020-2023, version 1.0" (State of Oregon: Enterprise Information Services (EIS), n.d.).

Figure 1. Modernization and the Journey Towards Digital Transformation

Put people first and commit to digital transformation

Know where you stand and reimagine the customer experience

Modernize applications and build an integrated digital enterprise platform

- Plan at the enterprise level and develop long-term goals, while remaining focused on near-term tactical actions
- Embrace agile practices, empowered teams, and incremental delivery—generating quick wins and building momentum

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Guiding Principles

While modernization can be defined as a *"phased, incremental approach to the improvement of the application portfolio, sometimes driven through demand for new digital functions and sometimes to simplify and reduce risk,"* such a narrow definition tends to reinforce an IT-centric view of modernization. [6] Modernization is not simply about identifying discrete legacy systems to replace and digitizing or automating current business processes. Modernization, properly understood, embraces people, processes, and technology, supports digital transformation, and is informed by the guiding principles that follow.

- *Put People First.* Successful modernization starts and ends with people—the experience of people who rely on the essential services provided by the State of Oregon, the ability of state employees to effectively provide those services, and the ability of agency leadership to drive digital transformation

- *Aligned and Enabled.* Alignment with the EIS Vision for user-friendly, reliable and secure IT systems and between agency business and IT leadership will enable agencies to fulfill their mission and strategic objectives, while continuing to deliver the core services that the people of Oregon rely on

- *Data- and Privacy-Informed.* Modernization provides a unique opportunity to leverage data as a strategic asset across systems and programs, govern and manage that data throughout its lifecycle, enable data-driven decision-making and transparency by default, and to critically evaluate whether the collection and storage of sensitive personal information is truly necessary

- *Secure by Design.* Secure by design embraces secure coding practices and the seamless integration of security policy and controls into the fabric of the IT system itself

- *Agile and Continuous Improvement.* Modernization requires sustained investment in our people, the formation of empowered teams and embrace of agile practices, and a culture of continuous improvement encompassing people, processes and technology

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[6] Don Scheibenreif, Kristin Moyer, and Peter Aykens, "Four Definitions Make a Digital Business Strategy Business More Effective" (Gartner, May 11, 2018).

How to use the Modernization Playbook

The purpose of this playbook is to guide agencies in the development of a Modernization Action Plan (MAP) by following the steps outlined below, along with the associated activities, checklists, and required artifacts identified.

1) ***Put People at the Center of Modernization.*** Putting people in the center of modernization encompasses committed leadership, clear purpose and priorities, customer experience (CX), compelling communication, capability for change, and cadence and coordination of delivery.

2) ***Know where you stand.*** Assessing your current state will enable you to clearly define a future-state vision, determine the level of effort and resources required to realize that vision, and gauge progress over time.

3) ***Define the Future State.*** Re-define the customer journeys that matter and determine the requisite capabilities necessary to provide accessible and inclusive digital public services.

4) ***Conduct a Gap Analysis.*** Document technology, resourcing, data, and other gaps in capabilities by comparing the current and future state assessments.

5) ***Develop a Modernization Action Plan (MAP).*** Informed by the gap analysis, map business priorities to the necessary business and technology capabilities required to support them and prioritize specific actions based on agency strategic objectives, internal IT governance, available resourcing, and through the application of EIS' Modernization principles.

6) ***Transition from Planning to Execution.*** Put the MAP into action by launching individual modernization projects and building a program of continuous modernization.

Please note, this playbook neither asserts nor plans the actual solutioning of specific IT systems or development of new capabilities. This playbook is intended to be used in conjunction with the EIS Strategic Framework 2020-2023 version 1.0, *Cloud Forward: A Framework for Embracing the Cloud in Oregon – version 1.0,* the *Statewide Information and Cyber Security Standards,* the *Oregon Data Strategy*, and the current EIS and enterprise statewide policies to guide actual solutions.

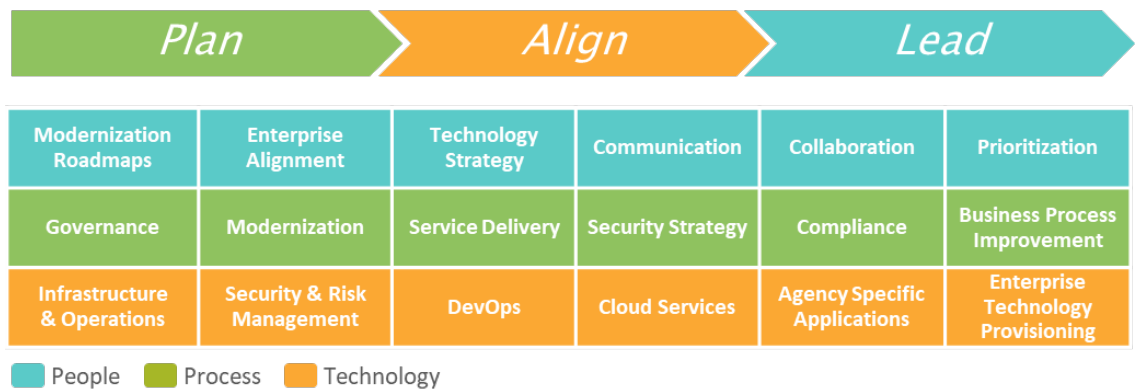# Leadership of the Assistant State CIO in Modernization

In support of the *Governor's Action Plan for IT* and as part of the *EIS 2020-23 Strategic Framework*, ASCIOs are responsible for partnering with agencies in the development of consistent, coordinated, and collaborative multi-year modernization strategies for each of the six policy verticals. The development of individual agency MAPs is foundational to this work. As is the establishment of common definitions, templates, assessment tools, and repeatable processes, development of business-driven Agency IT Strategic plans, and maturation of agency IT governance.

Beyond these specific deliverables, ASCIOs are also tasked with building trusted relationships with their agency partners and promoting the values embedded within the modernization vision for Oregon--encompassing people, processes, and technology—and serving as a guide to agencies as they embark upon their journeys towards digital transformation. In collaboration with agency leadership and IT resources, ASCIOs will assist agencies in assembling plans and roadmaps related to:

- Governance
- Modernization
- Transformation of service delivery
- Alignment to enterprise policies and guidance, including EIS Framework, security, cloud, and data strategies.
- Business Process improvement

While some agencies have already embarked on their modernization journey—having made substantial progress—the ASCIOs are ready to assist agencies just beginning their modernization planning efforts.

Figure 2. Assistant State CIOs – Alignment of Priorities

Plan		Align		Lead	
Modernization Roadmaps	Enterprise Alignment	Technology Strategy	Communication	Collaboration	Prioritization
Governance	Modernization	Service Delivery	Security Strategy	Compliance	Business Process Improvement
Infrastructure & Operations	Security & Risk Management	DevOps	Cloud Services	Agency Specific Applications	Enterprise Technology Provisioning

People   Process   Technology

Step 1. Put People at the Center of Modernization

It is difficult to overstate the importance of putting people at the center of digital transformation and modernization initiatives—leadership (both business and IT), constituents, and employees alike. Putting people at the center of digital transformation goes beyond traditional leadership and formal organizational change management (OCM) methodologies. Putting people in the center of modernization encompasses:

- *Committed leadership*
- *Clear purpose and priorities*
- *Customer experience (CX)*
- *Compelling communication*
- *Capability for change and*
- *Cadence and coordination of delivery[7]*

Committed Leadership

Committed and engaged executive leadership is critical to successful modernization. Modernization-related activities will require a substantial commitment of personal capital by agency leadership, accountability for the success of the change, the need to embody or role model the change, and the willingness to challenge long-standing assumptions and institutions. In some instances, agency leadership may be required to devote significant time to a modernization initiative. It is critically important to forge an effective partnership between business and IT leadership at the outset of this journey to ensure that both constituent needs and technical capacity are at the forefront of the initiative.

Beyond individual leadership, committed leadership frequently entails executive sponsorship and the establishment of an Executive Steering Committee to guide developing modernization plans. Strategic decisions will need to be made early in the modernization journey to establish scope, guiding principles, staffing, and budget. Securing the necessary resources to undertake modernization will likely require substantial effort. The Executive Steering Committee can ensure alignment with the agency's strategic direction, provide project guidance, give advice on business process improvements, and remove roadblocks when necessary.

Another foundational leadership component is the establishment of an IT Investment Governance Council. This group, like an Executive Steering committee, guides the work but may be more operational in focus as it will prioritize the large bodies of work IT to been assigned during the planning phase. In smaller agencies, the IT Investment Governance Council can also act as the Executive Steering committee.

Membership of the Executive Steering and IT Investment Governance Council should include a balanced cross-section of representation from the agency service verticals; e.g., executive leadership, business and program leadership, IT, communications, and finance. Agencies are also encouraged to include representative stakeholders

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[7] In *Delivering for Citizens: How to Triple the Success Rate of Government Transformations,* the McKinsey Center for Government identified five critical disciplines necessary for successful government transformations. When all five disciplines were embedded within a transformation initiative the likelihood of success was more than tripled (i.e., 3.5x more likely to succeed). The discussion that follows is informed by McKinsey's research and expands on the 5Cs framework they proposed. "*This research is based on a major global study on government transformations conducted by the MCG. We surveyed nearly 3,000 public servants who had been involved in transformations across 18 countries. We interviewed more than 30 leaders who had personally driven such change efforts and combined this with analysis of more than 80 case studies of government transformations around the world.*" Terra Allas et al., "Delivering for Citizens: How to Triple the Success Rate of Government Transformations," McKinsey Center for Government (McKinsey & Company, June 2018).

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and an external partner to provide diverse perspectives, and to consider including your assigned ASCIO or Senior IT Portfolio Manager (SIPM) as a non-voting member.

Checklist

- ☐ Establish formal IT Investment Governance
- ☐ Establish an Executive Steering Committee for the modernization program
- ☐ Establish an effective partnership between agency business areas and agency IT

Artifacts

- ☐ IT Investment Governance Charter
- ☐ Executive Steering Committee Charter, depending on the size of the agency

Outcomes

- ☐ Process for decision making and prioritization
- ☐ Ensure that Executive Leadership is committed and engaged

Clear Purpose and Priorities

It is important to establish a clear vision for the transformation of service delivery, commit to that vision, clearly account for the current state, and focus on the future state and the measurable outcomes of key metrics to gauge progress over time. Communicating a clear purpose will help staff and stakeholders in understanding the changes and will assist with their buy-in for new systems, processes, and policies. Addressing concerns early in any change mitigates the adoption issues that could lead to negative feelings about what will come and potential resistance.

Checklist

- ☐ Create an agency vision statement for service delivery. The vision statement should be aspirational and describe how the agency would like to provide services to its consumers and in what manner
- ☐ Establish clear metrics and targets and make them public to establish accountability and celebrate successes
- ☐ Contact your Senior IT Portfolio Manager to establish a program entry in Project Portfolio Management System

Artifacts

- ☐ Agency Vision Statement
- ☐ Modernization Planning Charter

Outcomes

- ☐ Understanding the scope of modernization planning and goals of modernization

Customer Experience (CX)

Embracing CX represents a shift from a program-specific or transactional view of customer service to one that emphasizes the importance of a person's end-to-end service journey and placing customers at the heart of decision-making and focusing on the design and delivery of physical and digital public services.[8] In working to

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[8] Allas et al., "Delivering for Citizens: How to Triple the Success Rate of Government Transformations."

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improve customer experience, it is critical to understand the customer journey — "that is the complete series of interactions a customer has with an agency—and the drivers of experience that matter most is the starting point." [9] In many cases, people may indicate satisfaction with a service interaction and yet be dissatisfied with the overall experience.

Historically, there has been a tendency to underinvest in CX and allocate scarce public resources to programmatic objectives or simply attempting to deliver services faster. However, recent research suggests that this is a false choice and that investments in CX can drive critical outcomes within public sector organizations, including *"increased trust," "achievement of stated missions," "meeting or exceeding budgetary goals," "reducing risk," and " boosting employee morale."* Furthermore, recent research indicates that reliability and simplicity are the two most critical drivers of customer experience based on global customer satisfaction surveys (CSAT) that evaluated the relative importance of reliability, simplicity, speed, transparency, quality of instructions, employee professionalism, and employee responsiveness in government services.[10]

In applying CX principles, it is important to consider other state agencies the customer may need to interact with to access the services the agency is providing. Partner with other agencies to determine if there is a way to streamline service delivery across these cross-agency touchpoints to improve or transform the customer journey.

Checklist

- ☐ List the agency stakeholders, internal and external, to know who or how to engage them during this planning process.
- ☐ Develop a community outreach or engagement strategy to ensure all constituent voices are heard.

Artifacts

- ☐ Stakeholder list
- ☐ Outreach Strategy

Outcomes

- ☐ Plan for engaging customers, stakeholders, and staff.

Capability for Change

Build the capability for change throughout the organization. It will be necessary to identify the roles and resources necessary to support modernization planning. From there, address critical skills gaps, including operational management; project, program, and change management; technical and analytics skills. [11] In working to build these capabilities, it is important to clearly link these capabilities with current and future program needs, accurately assess the current capabilities present within the organization, tailor capacity-building accordingly, and work to ensure that both employees and management adopt a change mindset.

The following roles and resources are critical to the success of modernization initiatives.

- **Executive Sponsor**. Executive sponsorship and leadership are the keys to success for any project. For larger agencies, this may mean appointing a business executive(s) who has a vision for the program's service delivery, an advocate for the program, and can assist in providing a consistent direction. The Executive Sponsor also has the managerial and budgetary authority to help provide resources and authorize appropriate spending. In smaller agencies, boards, and commissions, this may mean

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[9] D'Emidio et al., "The Global Case for Customer Experience in Government."
[10] D'Emidio et al.
[11] Allas et al., "Delivering for Citizens: How to Triple the Success Rate of Government Transformations."

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incorporating modernization planning into existing agency leadership and governance so that every executive leader has the responsibility to contribute to the agency's modernization plan. If the change spans multiple divisions, sections, or program areas, be sure the sponsor(s) has some level of influence over those areas. It is not recommended that the Executive Sponsor be the Chief Information Officer. While a partner, the drive for modernization should come from business leaders.

- **Program Manager**. Another key resource is a Modernization Manager. In larger agencies, formal modernization programs should have a dedicated Modernization Manager who will help direct activities, work with internal and external groups, and manage potential contracts. The Modernization Manager will carry out the vision of the Executive sponsor, manage the day-to-day activities, and direct program resources and workgroups to achieve desired outcomes. In smaller agencies, boards, and commissions, the work of modernization may occur during established executive leadership meetings with existing staff assigned to track progress.
- **Subject matter experts (SME)**. SMEs that know business processes and policies, laws, and the rules that the agency needs to follow.
- **Business analysts**. Working with SMEs, business analysts are key resources who can help document business processes and be a translator between business and IT in understanding what the existing system does and what it could do.
- **Research/Data analysts**. Document current data dictionaries, future data needs, reporting needs and sources to be integrated.
- **Systems Analyst**. System management and interfaces - documenting current state application architecture, interfaces, and business rules. This team could assist in estimating effort in development, migrating interfaces, and planning legacy systems shutdown.
- **Organizational change manager** (Recommended). Create and implement an organizational change management plan. This can include communications and training.
- **Workgroups** could also be created to divide the work of modernization. Suggestions for groups other than normal project teams include:
  - Data – dedicated to data, this group would create an inventory of data and data flows. This group would also identify who is using the data, what data they are using, where data is coming from how it is received, and what data might be missing for decision-making.
  - Organizational change – sometimes it takes a village to manage change. This group focuses on creating the change management plan and implementing it.
  - Legacy readiness and migration – focusing on system documentation, migration tasks, etc.
  - Stakeholder groups – a way to communicate activities and set expectations.

In smaller and mid-sized agencies, multiple roles may be managed by one person, where varying levels of duties may or may not be realistic. At a minimum, there should be an Executive Sponsor, SMEs, and a program manager. Some agencies may need to contract for project management, organization change management, and/or facilitators for completing activities or developing artifacts. Please consult with your ASCIO or SIPM if you need help managing resources.

Checklist

- ☐ Establish Workgroups that can focus on specific areas of planning – Change Management; Data; Legacy systems; etc. Some workgroups could include external partners and stakeholders for broader perspectives.
- ☐ Identify any potential skills gaps within operational management, project, program and change management, and digital and analytics skills.
- ☐ Develop a plan to build the skills for the work needed to complete modernization planning – mentoring, additional training, advisors, and contracting.

- Consider training existing staff who have an interest in high-value skills such as project management, organizational change management (e.g., PROSCI), business process analysis, and reengineering, among others.

Artifacts

- Workgroup and team charters (if applicable)
- Training plans (if applicable)

Outcomes

- Staff Readiness assessment report

Compelling Communication and Change Management

Well-planned, coordinated, authentic, and two-way communications with those impacted by the change are imperative. In particular, the organization's own employees are a critical component of organizational change management (OCM) and critical to the success of any modernization initiative.[12] Compelling communication will increase the likelihood of employee and stakeholder buy-in and contribute to the success of modernization initiatives. This also includes regular communications regarding the progress of the change initiative and transparency regarding the results.

Given that change is inherently difficult, communication and OCM should start at the beginning of the initiative. Employees and customers often ask, "*What's in it for me?*"; "*Why do we need to do this?*"; "*What benefits are we going to have if we do this extra work?*" It is important to gain full participation from all parts of the organization and leverage the knowledge of employees who work with the systems every day. Without full participation and the ability to be candid about their work, redesigning and finding solutions will be met with resistance (i.e., failed user adoption). Having employees and customers share pain points and suggested changes in processes and systems will establish a sense of ownership and build excitement for the change. Managing the change can also help set expectations. Communicating what is changing, what is in scope and when, will ease fears and anxiety. Whenever possible use interactive methods to engage both employees and external stakeholders, in addition to passive methods such as surveys or document reviews.

Checklist

- Establish a Change Agent group, dedicated to helping staff and stakeholders along in the journey.
- Develop a compelling change narrative that addresses the "who", "what," "where", "why" and "how"—and "what is in it for each individual."
- Ensure that you are engaging all stakeholders and parts of the organization that will be affected by the change.
- Develop a communication plan for employees and external stakeholders that leverages multiple channels (e.g., newsletters, emails, blogs, posters, and town halls) and enable opportunities for authentic two-way communication.
- Establish clear metrics and targets and make them public to establish accountability and celebrate successes.
- Equip managers with talking points or reference material so they can answer questions and support their staff through change.

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[12] Allas et al.

□ Communication Management Plan
□ Organizational Change Management Plan

Outcomes

□ Process for decision making and prioritization

Cadence and Coordination in Delivery

Empower teams that include or engage affected stakeholders through a participative approach to planning focused on the identification of specific deliverables with specific deadlines, synchronizing planning and budgeting processes, and delivering quick wins to gain momentum. Collaboration and greater inclusivity of affected parties tend to surface new ideas and to provide legitimacy for the future-state vision.

Develop a schedule for modernization planning. Within this playbook are the steps and artifacts that can serve as a starting point for identifying the activities needed to develop the agency modernization plan. Each agency will tailor the planning activities and artifacts based on mission, resources, size, and current technologies. Layout the tasks and break them down into small steps that can be accomplished quickly. Identify who is needed for complete analysis. Set some deadlines for gathering existing documentation or creating new artifacts.

Checklist

□ Use the steps in the playbook to develop a schedule for Modernization planning.

Artifacts

□ Modernization Planning Schedule

Outcomes

□ Setting timelines for completing planning work.

Step 2. Know Where You Stand (Assess Current State)

Assessing your current state will enable you to clearly define a future-state vision, determine the level of effort and resources required to realize that vision, and gauge progress over time. Understanding how services are currently being delivered, the resources required to support delivery, and who is receiving services along with other affected stakeholders is critical to an informed discussion on how to reimagine public services and transform their delivery.

Employ a Business–First Approach to Modernization

Agencies are encouraged to adopt a business-first approach to modernization. Under this model, agency modernization planning initiatives focus on their most critical or valuable business capabilities first, rather than starting with their oldest legacy systems or platforms. From there, continuous modernization efforts identify, prioritize, and remove pain points associated with legacy applications that inhibit digital business transformation -- enabling the agency to be more agile in responding to changing business requirements.[13] This approach requires a clear alignment between IT systems and the business outcomes that they enable. Consequently, modernization action plans need to support the agency's mission, vision, and values and be fully aligned with an Agency's strategic plan.

Checklist

- ☐ Gather agency and program mission, vision
- ☐ Does the agency have a strategic plan?
- ☐ What are the mission-critical services the agency provides?
- ☐ What are the guiding principles the agency will use when making decisions when it comes time to prioritize projects?

Artifacts

- ☐ Agency Mission, Vision, Goals, and Values
- ☐ Guiding Principles
- ☐ Agency Strategic Plan
- ☐ Program Mission, Vision, Goals, and Values
- ☐ Documentation of mission-critical services

Outcomes

- ☐ An assessment of understanding the agency business (Mission) and where it would like to be (vision)

Document Outcomes, Processes, Pain Points

Modernization challenges the current state and asks questions that could lead to new models of service delivery e.g., does your agency interact with customers in a transactional way? Could those transactions be performed via a mobile app that would shift from internal processors to a self-service platform? If your agency is responsible for collecting revenues, are collections limited to office hours? What if you could make it easier for your customers to do business with the state 24 hours a day, 7 days a week? Understanding how your mission-critical services interface with your customers is an essential first step. Challenging the current state to continually improve the efficiency of processing and effectiveness in service delivery is a key part of the modernization journey.

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[13] Stefan Van Der Zidjen and Thomas Klinect, "Use Continuous Modernization to Build Digital Platforms from Legacy Applications" (Gartner, January 18, 2018).

Documenting business processes will ensure that the work required and any associated business requirements are captured, while the application of process methodologies may identify opportunities to streamline current operations and realize efficiencies. Though, as previously noted, customer satisfaction is primarily driven by reliability and simplicity.

Documenting business processes and business rules embedded within systems can also surface business requirements staff are unaware of or surface assumptions that may no longer be valid. Interviewing users and affected stakeholders for current pain points in processes or systems can generate insights regarding potential changes to business processes, requirements for future systems, and ideas for new features or enhancements to systems that may be within the scope of modernization. Additionally, these interviews and conversations with front-line employees will build support for the change.

Checklist

- [ ] Spend extra time engaged in face-to-face conversations with front-line employees and stakeholders most affected by the change — talk less and listen more. What are the pain points that cause extra work, extra calls, or irritations?
- [ ] Understand the business processes from all sides – how the customer interacts, how information is gathered and processed by the agency, exchanges, and sharing of information.
- [ ] Gather what business rules are being enforced either manually by staff, or in applications.

Artifacts

- [ ] Business Process documentation
- [ ] Business Rule Inventory
- [ ] Pain Points

Outcomes

- [ ] Understanding current state

Data Needs

Determining current and future data needs are critical during the planning phase. Understanding how the data is received and how it is used will assist in future plans on managing data. Broad outreach to other business areas, to other agencies, and to stakeholders should be undertaken to understand how data is being shared, who is using it, and how they are interpreting the data. The Chief Data Officer (CDO) has been directed to work with agencies to manage data as a Strategic Asset. The CDO is working with leaders to develop a data strategy that will be a tool designed to help agencies better utilize, manage, govern, and share the data assets they create and maintain.

Checklist

- [ ] Gather current reports, how they are being distributed, and to who.
- [ ] Gather the data elements and when they are captured in systems
- [ ] What is the sensitivity level of the data?

Artifacts

- [ ] Data and reporting documentation
- [ ] Data dictionaries
- [ ] Data and Reports inventory

Outcomes

 ☐   Understanding agency data.

Document Your Business and IT Architecture

Along with business outcome understanding, knowing systems that are both IT and business support is necessary. Over time, staff may have created complex interconnected spreadsheets, MS Access databases, and Word templates that have created efficiencies. Without knowing all of the software systems that support a business, the requirements of a new system may be missed. Interview subject matter experts in their business processes and tools they use to do their work.

The program should have documentation of the systems, including business rules, and data exchanges to and from a database(s) and other systems. Entity Relationship Diagrams (ERDs) and architecture diagrams will show connections between systems and can assist in determining the scope of the effort as well as assist in developing the implementation roadmap and data migration.

The EIS – Strategy and Design document has an architectural assessment template that can aid in building the needed documentation.

Checklist

☐   Identify mission-critical applications – from the list of critical services, identify the systems that support those services.
☐   Gather Information about the application – hosted, cloud, custom, application development language, DB, etc. Includes FTE needed for support and Total cost of ownership.
☐   IT Architecture – This includes how applications are tied together and which servers (application, database, etc.) they reside on. Also, application dependencies including interfaces, interface technology, data feeds, and middleware.

Artifacts

☐   Application Inventory
☐   Entity Relationship diagrams

Outcomes

☐   Current State IT Architecture documentation

Determine Current IT Spend

Knowing how much of an agency's biennial budget is spent on IT is part of the assessment of the current state. Agencies should determine IT capital expenditures (CapEx) and Operational expenditures (OpEx) for information technology assets listed on the agency portfolio. Typical itemized expenses should include the following:

- Software licensing and maintenance
- Staff – Developers, System Administration, Managers, Service Desk
- State IT Assessments (Data Center, EIS, etc.)
- Infrastructure (Server, network, hosted environments cost)
- PC/Desktop equipment
- Telephony services/equipment

Checklist

☐   Work with the agency Finance group to gather information about the IT Budget.
☐   Work with Procurement on licensing and maintenance cycles and costs

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□   Current IT Spend assessment

□   Understanding IT Budget

Assess IT Project Portfolio

Gather all current and known proposed projects. Identify the IT projects that are in the execution phase and IT initiatives that are expected to launch in the future. Look for overlapping projects or dependencies. This will help with resource-leveling and efficient use of resources. Include any known enterprise (EIS and DAS) projects such as; e.g., M365, Payroll, and Training.

Checklist

□   Gather all current agency projects
□   Gather all planned agency projects
□   Gather all Enterprise projects

Artifacts

□   Current project portfolio – project names, description, scope, estimated effort, timeline, and budget.
□   Planned project portfolio – project names, description, scope, estimated effort, timeline, and budget.

Outcomes

□   Understanding what projects are being worked on and what is coming.
□   Understanding the current resource needs.

Step 3. Define the Future State

This stage is an opportunity for the agency to engage with their customers, stakeholders, and employees to understand their needs and desired interactions. This will help to inform the business on how much to invest in service delivery and how to make business processes more efficient to accommodate the diverse user base. This also includes employees in how they complete their work.

Redefine Customer Journeys that Matter

In working to improve customer experience (CX), it is critical to understand the customer journey — *"the complete series of interactions a customer has with an agency—and the drivers of experience that matter most is the starting point."* [14] In many cases, people may indicate satisfaction with a service interaction and yet be dissatisfied with the overall experience.

While the public sector may be responsible for countless customer journeys, Agencies can focus on the journeys that matter. Recent research indicates that the public sector focuses its resources on improving just *"four archetypal journeys,"* including *"learn," "apply and/or submit," use and/or visit,"* and *"receive."* [15]

- **Learn** — *"A 'learn' journey comprises reaching and understanding the service options before usage."*
- **Apply** – *"An 'apply' journey comprises the steps involved in an end-to-end application process."*
- **Use** – *"A 'use' journey comprises the moment someone actually uses a service (for example, files a claim for benefits)."*
- **Receive** – *"A 'receive' journey comprises how citizens experience getting something from the government, for example, a tax refund or occupational license.*

Focusing on CX enables the business to consider how services are provided to customers. Identification of the groups of customers – business, individuals, other state agencies; the reasons the groups are accessing services; and preference of access assists in visioning the future service models and digital public services.

Consider other federal and state agency partners and how data and services are shared. Include employees and how they will interact with the new system. An employees' journey is also important so understanding their work helps define requirements for future solutions. These discussions and this engagement can be informative as to how the agency and program serve all demographical and culturally/racially diverse constituents. Use business outcomes to form a future state vision and high-level business requirements.

Checklist

- ☐ Identify groups of customers.
- ☐ Engage with stakeholder groups and solicit their feedback through feedback sessions or surveys.
- ☐ Do community outreach, to ensure that underrepresented groups and those who do not currently access services are included.
- ☐ Consider other federal, state, county, and city partners in how common services are provided to customers.
- ☐ Don't forget the employee journey as well.

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[14] D'Emidio et al., "The Global Case for Customer Experience in Government." McKinsey defines design thinking as "*a human-centered and creative approach to solving problems that integrates the needs of people, the possibilities of technology, and the requirements of the organization providing the service.*" Allas et al., "Delivering for Citizens: How to Triple the Success Rate of Government Transformations."

[15] D'Emidio et al., "The Global Case for Customer Experience in Government."

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- ☐ Future state Customer Journey Maps
- ☐ Future state Employee (business process) journey map
- ☐ Future State Vision
- ☐ High-Level business requirements for future systems

Outcomes

- ☐ Envisioning future service delivery through customer journey maps

Establish an IT Architecture Vision

With a focus on the program goals, future service delivery, the customer journey maps, and high-level business requirements, the next step is to look at the whole picture and identify the functions or capabilities required – customer management, case management, document management, secure communication that meets the desired outcomes and service delivery goals. Partnering with IT Services can help re-imagine the software and hardware architecture, as well as how IT supports those applications and services securely and effectively.

An architecture vision should include the philosophies of the IT organization – for example, Cloud or on-premise services; standard application development methodology (waterfall, Agile, or hybrid) and database language(s); and IT standards.

Review the current enterprise initiatives and policies that will be necessary to align with the enterprise principles and policies on security, cloud use, and data retention. IT should also develop and codify its technology guiding principles and philosophies. In many organizations, IT resources are limited. Creating standards will help you to know what skill sets are needed in staff and to determine how many resources are needed.

Checklist

- ☐ Review Enterprise initiatives and policies for current alignment – DAS shared services (Workday, Payroll, etc), EIS Strategic Framework, Cloud forward, Data strategies, Security,
- ☐ Functional software needs
- ☐ Architecture Vision including the IT support model - description, metrics, business expectations of IT service; philosophies – buy vs build, business vs IT configured; and IT Standards - Application/Software Development Lifecycle including upgrade cycles; and Technology /Hardware Replacement standard - what is the technology refresh standard

Artifacts

- ☐ Architecture Vision

Outcomes

- ☐ Understanding IT future service delivery

Rationalize Your Application Portfolio

Take the time now to triage the application inventory. This focuses on what is currently in the application inventory and not what is the solution to replace it. One method to evaluate an application's usability is using

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Gartner's TIME model – Tolerate, Invest, Migrate, Eliminate.[16] This should be done with both business and IT together. Place applications in the appropriate quadrant and then decide appropriate actions needed.

Checklist

- ☐ Critical applications Inventory
- ☐ Portfolio Assessment – TIME Gartner model

Artifacts

- ☐ Critical application assessment

Outcomes

- ☐ Understanding the future of the current application portfolio

Evaluate Business Rules and Processes

Envision how business processes could be. Find solutions that meet the customer service delivery goals and that allow employees to provide exceptional customer service. To minimize customizations and reduce long-term support, consider the systems being implemented, and fine-tune business processes to reduce the complexity in customizing a solution.

Consider how business rules are architected into the system – Business Rules stored in tables or configurations over customizations that can be easily known and maintained. This also helps with setting the future IT Architecture.

While specific decisions and changes would come during project implementations, consider the complexity built into the system, such as hardcoded business rules when doing this review. The more automation and the more business rules in a system, the less flexibility the system will have in the future. Changes will take longer to complete. Consider the 80-20 rule. Build business processes, rules, and automation for 80% of the use cases. Don't build for the 20% exception or unique circumstances. While this may mean more keystrokes for staff, systems will be more nimble and agile for required changes in the future. Having the discussion of business process automation and business rule evaluation at this stage assists in setting expectations of future system capabilities.

Checklist

- ☐ Review and evaluate current-state business processes
- ☐ Create future state business rules and process documentation

Artifacts

- ☐ Future state business processes
- ☐ Business process improvements list

Outcomes

- ☐ Change management and setting future expectations of systems
- ☐ Setting expectations when building business requirements for future projects

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[16] Stefan Van Der Zijden and Bill Swanton, "Use TIME to Engage the Business for Application and Product Portfolio Triage" (Gartner, October 31, 2019).

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IT Security

Security of data is a high priority. Cyber-Security Services (CSS) has established and enforces security policies. Agencies must be aware of these policies and incorporate them into the design of the agency infrastructure and applications to apply best practices in securing customer data. This playbook does not get into the specifics in designing applications or networks, but strongly encourages agencies to consider appropriate security requirements when procuring a solution, integrating applications, or having data hosted in a cloud solution.

Checklist

☐ Review CSS Security guidance, policies, and the resource center.

Artifacts

☐ IT Security Plan

Outcomes

☐ Understanding the security requirements for the data that is held by the agency.

Data Plan and Reporting

Data is one of the most valuable assets an agency has. It has the power to drive decisions in all aspects of an agency – policy, processes, budgets, and overall management of operations. Data helps inform how the agency is performing, and where it might improve. This part of the future vision step is to identify the data needed and desired by the agency to have a data-informed culture.

Once data elements are determined, identify possible sources for the data, particularly to new data needed. Know which applications will be the official record in the future state and how the data is integrated with other systems. Work with partner agencies on data exchanges.

Look for opportunities to optimize. Consider the following:

- Consolidate data to see if it can come from one source.
- Review the necessity of the data. Don't hold data if there isn't a need for it.
- Look for better ways – securely, authoritatively, confidently – to get the data.
- Consider having a single source of truth. Even if the data is used between various programs, can Name and address information be in one database and shared through integrations with other applications?

Envision future data governance and management of the agency's data.

Create a future state data architecture design. This should outline where data maps, where data is stored, and how this data integrates with other systems. This will help document and plan the work.

Determine how will you report the data. Reporting can be accomplished in several ways – in applications, on-demand, or from a reporting platform. If the reports are from a reporting platform, many reporting tools are being used – PowerBI, Tableau, etc. Build your reporting requirements and standards for inclusion in the architecture vision.

Checklist

☐ Review EIS Data Strategy and policies
☐ Reports architecture, including reports inventory
☐ Data Plan – ownership, source, how, what, when is data received and stored
☐ Reporting Plan - report inventory and delivery mechanism

Artifacts

- ☐ Data architecture design
- ☐ Reports architecture
- ☐ Data Plan
- ☐ Reporting Plan

Outcomes

- ☐ Designing future state of data

Step 4: Conduct a Gap Analysis (Business Value and Technical Fit)

Once all business outcomes are documented, the actual current state is known and the future state is determined, the next step is documenting the gap. A gap analysis will show the work needed to get from the current state to the future state. The efforts can then be identified, can indicate predecessors and successors, and can be prioritized for planning modernization.

Document the Technology Gap

The technology gap shows what functional pieces are missing or where modernization is needed. For example, an agency currently has an in-house custom application that licenses customers using paper forms. The future state requirements suggest moving the agency to a new off the shelf licensing system with electronic signatures. The technology gap in the agency is an electronic signature application. The agency can choose to find a new licensing application that includes electronic signature capabilities or to procure an electronic signature system.

Checklist

☐ Compare the current state architecture to the future state.
☐ Compare the current business function systems to future state.

Artifacts

☐ Technology gap analysis

Outcomes

☐ Process for decision making and prioritization

Document the Personnel Resource Gap

The resource gap outlines the skillsets currently in-house, and depending on the future state technologies, what skills are needed. The outcome is a resourcing plan. A resourcing plan will outline how existing staff transition; the training plan for existing staff; what new positions and skills need to be obtained; are positions needed or desired to be permanent, limited duration, or temporary; and duration.

This is not only IT positions, but business positions as well to better support the agency's modernization program and operational programs. To instill continuous improvements, business analysts will be needed to document the process, identify process improvements, and work with IT on technology enhancements.

If the agency is going to proceed with modernization initiatives, project managers are needed. Depending on the expected duration of the projects, the agency may consider a permanent project manager. However, for short-term component projects, the agency may want to consider contracting for a project manager using the Basecamp professional services agreements.

Checklist

☐ Resource gap analysis – identify the skills that are needed to support the future state

Artifacts

☐ Resourcing Plan

Outcomes

☐ Know what is needed for skills are needed to support the future state

Document the Data Gap

The data gap compares the current dataset with what is needed to answer questions, make decisions, and tell an agency program story about their customers including metrics of service delivery.

Checklist

☐ Outline the new data needed and where the data can come from. This, too, will become part of the requirements for future systems.

Artifacts

☐ Data gap analysis

Outcomes

☐ Know the data gaps

Step 5: Develop a Modernization Action Plan

Utilizing the gap analysis and guiding principles, various roadmaps and action plans can be derived that can move toward the desired future state. Use the Executive Steering and/or IT Investment Governance Council to identify priorities. Ensure that you communicate according to your Organizational Change Management plan or communication plan as this work happens so stakeholders and employees are informed of the direction leadership is taking.

Architectural Design and Roadmap

Design IT architecture. Identify the pieces that are needed to address the functional business capabilities. The EIS - Strategy, and Design have resources to help and to assure enterprise alignment.

Checklist

- ☐ Consult with EIS - Strategy, and Design
- ☐ Design the architecture with the functional components identified – how do they connect, what is the primary use, and how is the data collected, stored, and used.
- ☐ Develop an architectural roadmap that outlines the current technologies and connects them with the future state. It describes the path the agency will take from current architecture to the future state

Artifacts

- ☐ Architecture Design
- ☐ Architectural Roadmap

Outcomes

- ☐ Identification of systems that support business capabilities.

IT Strategic Plan

The IT Strategic plan may include infrastructure or other services IT would like to address that is not part of modernization or legacy system replacement. The IT Strategic Plan generally covers 3-5 years of goals and objectives. An IT Strategic Plan is refreshed regularly and aligns with the agency's strategic plan.

Checklist

- ☐ Review the goals and objectives of the business and determine what actionable projects are needed to support those objectives and that align with the IT Architecture Vision, guiding principles, philosophies, and the standards established
- ☐ Determine the order and priority of these projects.

Artifacts

- ☐ IT Strategic Plan

Outcomes

- ☐ Process for decision making, prioritization, and planning

Modernization Action Plan

Modernization Action Plans (MAPs) usually start with Agencies mapping their business priorities to the technology solutions and capabilities that support them. This requires evaluating the business priorities and processes that support each Agency's mission and objectives.

Develop a plan that identifies projects to be undertaken. The projects should be focused on business benefits. The Gap analysis can identify the changes and new technologies that need to be implemented. Should larger projects and initiatives not be possible due to budget or resource constraints, consider smaller endeavors that are strategic moves that could bridge gaps or move an agency incrementally toward the envisioned state.

Develop a roadmap that shows the different projects that achieve the program or modernization goals and outcomes. Depending on the current state architecture and architecture roadmap, some capabilities of current applications may be migrated to the desired future state at different points in the program roadmap.

Checklist

- [ ] Determine and set the priorities for getting to the envisioned end state.
- [ ] Employ the governance that has been established to help set priorities
- [ ] Include plans for interfaces and integration to other systems as well as decommissioning legacy applications.
- [ ] Consider what is needed to archive for historical purposes – where to store the data, how it is accessed, and how long is it required to be retained.

Artifacts

- [ ] Modernization business case
- [ ] Modernization charter
- [ ] Modernization Action Plan
- [ ] Modernization Roadmap
- [ ] Integration or Interface Plan
- [ ] Data Migration Plan
- [ ] Legacy Decommissioning Plan
- [ ] Talent & Resource Management Plan
- [ ] Organization Change Management Plan

Outcomes

- [ ] Modernization Action Plan

Identify Other Opportunities

Several other opportunities can be started without technology. Review the statutes and administrative rules that restrict digital transformation. Does the statute require a signature or paper process? Are there administrative rules that prohibit sending applications electronically? Removing some of these barriers in advance will aid in the implementation of future technology solutions.

Identify any process improvements that could be made without technology. Implementing new technology may take some time. If improvements can be made without technology, undertaking process changes may provide more flexibility when it comes time to implement new systems.

A business analyst can work with staff to identify steps that can be combined or eliminated. Review the business process maps to determine if there are steps that can be eliminated, combined, or refined. The team can build requirements for future systems with better workflows for effective and efficient interactions with customers.

Checklist

- ☐ Refer to LEAN Six Sigma best practices
- ☐ Legislative Concepts and/or Administrative Rule changes

Artifacts

- ☐ Inventory of potential process improvement

Outcomes

- ☐ Momentum for modernization
- ☐ Efficiencies while waiting for budgets and policy changes to occur.

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Step 6: Transition from Planning to Execution

Once the modernization action plan is initiated, projects are handed off to a project manager to implement the plan. With each project solution, consider the following resources to assure alignment to enterprise policies and strategies.

- DAS Policies
- EIS Policies
- EIS Strategic Framework
- Cloud Framework
- Security Policies
- Data Strategy
- Diversity and Inclusion Goals and Objectives

There are resources available should you have questions during the projects.

- Cyber-Security Services
- Strategy and Design
- Data Center Services
- Basecamp resources
- Quality Assurance resources
- Assistant State CIO
- Senior IT Portfolio Manager

The Modernization Action plan will ensure alignment between the component projects. EIS Oversight program will review Modernization efforts and technology projects on the modernization program roadmap. Agencies may engage with their SIPM and Oversight analysts to understand specific oversight requirements.

Remember to manage the change and change fatigue. This is a journey and could be a marathon. Keeping employees and stakeholders engaged through the modernization efforts will help in the long run.

Checklist

- ☐ Check the Project Portfolio Performance website for guides, processes, and resources for projects. Engage your SIPM.
- ☐ Continous ASCIO engagement
- ☐ For each project, validate the current state, but push further into detail about the future state to help build requirements for solutions.
- ☐ Align with enterprise strategies when determining specific solutions

Artifacts

- ☐ IT Investment, ICA, and project artifacts based on oversight level determination.
- ☐ Staffing identification – capacity planning
- ☐ Detailed business requirements

Outcomes

- ☐ Modernized systems with sustainment review cadence

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Continuous Modernization – Operational Program

Modernization does not end with the implementation of new systems and updated services. Modernization includes the organizational change to a modernization mindset that should be incorporated into ongoing operations and maintenance efforts. Having a modernization mindset means shifting culture from once and done to including a planned refresh cycle periodically whether that's annually, biennially, or another appropriate timeframe based on agency needs. This means checking in with the business to see if goals and objectives have changed and assessed whether the technology supporting that business is happening most effectively and efficiently to achieve desired outcomes the business needs to deliver on. Setting a cadence for revisiting technology investments with stakeholders is key to continuous modernization.

Conclusion

Modernization is not a quick endeavor. Due to the biennial cycle and budgetary limitations, and potential procurement delays, modernization is often a multi-year undertaking, often spanning multiple biennia. However, absent modernization, the persistence of legacy IT systems and manual processes, a lack of human-centered-design (HCD), and the consequent failure to meet public expectations will only further contribute to the erosion of trust in state government—among the people of Oregon, our employees demoralized by their inability to provide effective services, and our elected leaders alike. At the same time, the mounting cost of technical debt associated with antiquated legacy systems will eventually come due and these systems will only continue to impede our ability to respond to changing conditions in times of crisis.

Now more than ever, people rely on the State of Oregon to provide essential services. While the stakes are high, you are not alone, as ASCIOs are available to assist you throughout this journey—working to both improve and reimagine service delivery while transitioning to modern and resilient technology platforms. Embracing the guiding principles, steps, and activities outlined in this playbook will bring your agency and the State of Oregon collectively closer to our shared modernization vision—*"Optimizing essential services that the people of Oregon rely on through resilient, adaptive, secure and human-centered digital transformation."*

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