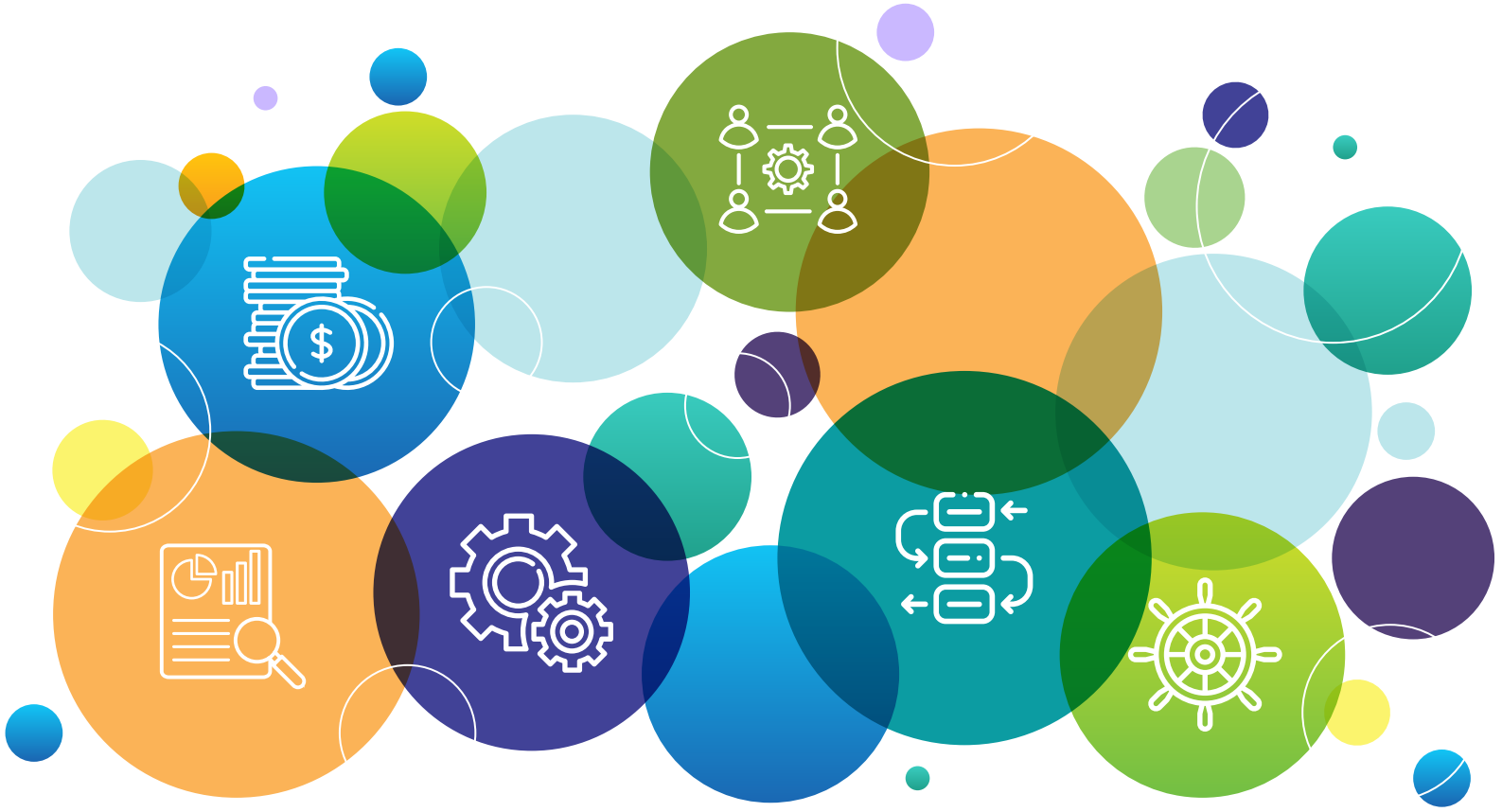
April 2023

Actively Managing the IT Investment Portfolio

A Playbook for State Government



NASCIO
Representing Chief Information Officers of the States

Background

NASCIO set out on a mission to highlight some of the leading state government work in creating and maturing a strategic enterprise-wide portfolio management (EPM) program. In 2022, we hosted a series of webinars that included the Commonwealth of Virginia, the state of Illinois, the state of Washington, and the state of Maryland. Each state presented different perspectives on EPM, and they supported each other by reemphasizing certain necessary ingredients for an effective EPM program. These states also presented some of their current challenges and some of the issues they are still working to solve.

We've taken the webinar content and our research, analyzed it, and reassembled it into a series of plays in this playbook so that other states can benefit from this work.

What is enterprise portfolio management?

The Project Management Institute defines what constitutes EPM as:

> ***Portfolio*** *– a component collection of programs, projects, or operations managed as a group to achieve strategic objectives. The portfolio may not necessarily be interdependent or have related objectives. The portfolio components are quantifiable, that is, they can be measured, ranked, and prioritized.*
>
> ***Portfolio Management*** *– the coordinated management of one or more portfolios to achieve organizational strategies, and objectives. It includes interrelated processes by which an organization evaluates, selects, prioritizes, and allocates it limited internal resources to best accomplish organizational strategies consistent with its vision, mission and values. Portfolio management produces valuable information to support or alter organizational strategies and investment decisions.*

An important discipline that works hand in hand with enterprise portfolio management is information technology investment management or IT investment management (ITIM). We bring both of these disciplines into discussion in our webinars and in this report. The Commonwealth of Virginia defines their ITIM this way:

> ***Information Technology Investment Management (ITIM)*** *is a management process that provides for the pre-selection (identification), selection, control and evaluation of business need-driven information technology (IT) investments across the investment lifecycle.*
>
> ***ITIM*** *uses structured processes to minimize risks, maximize return on investments, and support Commonwealth agency decisions to maintain, migrate, improve, retire or obtain IT investments. In addition, ITIM establishes a common language for the Commonwealth to:*
> - *Organize IT investments and define their business value*
> - *Evaluate and prioritize the investments*
> - *Effectively manage change*

Enterprise portfolio management was explored in depth in NASCIO's 2013 report, **"Destination: Advancing Enterprise Portfolio Management – First Stop: Issues Management,"** and where NASCIO first discussed the notion of the state CIO as a bridge or a broker between agency needs and available technology solutions. That report also asserted that there are multiple portfolios, thus, enterprise portfolio management is a discipline for managing all portfolios and the interconnectedness among them.

Introduction – Why is enterprise portfolio management important?

State government can't manage anything if it doesn't know what it has. And that is the case with investments in software and hardware, cloud services, the state workforce, state contracts, obligations, applications and databases, networks, and projects. When we use the term "enterprise portfolio management" within the context of this NASCIO initiative we are maintaining that this is much more expansive than just the project portfolio. The aforementioned list conveys the notion that there are many portfolios that must be actively managed within the state government enterprise portfolio.

Enterprise portfolio management is a complete discipline for knowing what you have and how effectively your investments are performing. Some of the questions that can be answered by an effective enterprise portfolio management discipline and where EPM can provide insights include:

Portfolio assessment

- What is the magnitude of the "legacy" portfolio?
- What systems or investments are at "end of life" or no longer supported?
- What potential redundant investments may exist because of duplication in project definition?
- What can be reused from existing investments when new business needs are presented from an agency?

Alignment of business value and technology

- Is it possible to demonstrate business alignment and business value delivered and can state government demonstrate that it is reaching the INTENDED OUTCOMES and delivering on strategy?
- Can state government ensure that it is investing in the RIGHT technologies to support the business?
- Does state government know what processes, systems and applications are CRITICAL to the business?

Project Management

- Can the state ensure that it has defined the RIGHT project scope?
- Is it possible to FORECAST what projects are getting off track and require intervention?
- What is the targeted return on investment (ROI) and net present value (NPV) for each project investment?

Accountability and finance

- Can state government present to its constituents, how tax dollars have been invested?
- What is the current spend by function/capability?
- What is the current spend by agency or line of business?
- What is the current and planned spend by technology tower? How is that trending over time?
- What is the funding strategy for implementation? For long-term maintenance and operations?

Risk Management

- Is state government aware of current and emerging risks that affect state government and its technology investments and how to mitigate those risks?
- Do planned and existing investments improve the state's cybersecurity posture?

Workforce

- What skills and know-how will be needed in the future?
- Does the state have the human capital necessary to support its planned initiatives?

These are a lot of critical questions for state government and in most cases they are under the authority and purview of the state chief information officer (CIO). An effective EPM discipline provides answers and insights to questions like these.

An effective well-orchestrated enterprise portfolio management discipline is one that continues to learn and mature. Some of the benefits described in our webinar series include the following. An effective enterprise portfolio management discipline enables state government to:

- Align investments to business goals and objectives.
- Confirm that IT investments are meeting business objectives.
- Identify and track spending on IT investments.
- Control and monitor IT investment projects.
- Leverage IT investment opportunities that may generate internal capital.
- Make informed decisions on an IT investment portfolio by assessing value and risk.
- Measure the positive (and negative) impact on customers.

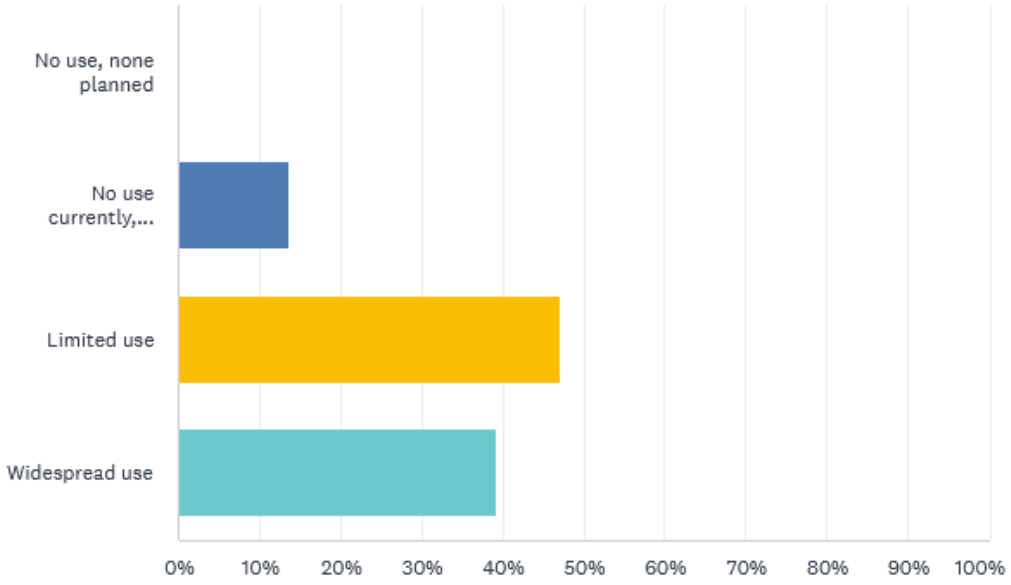
Why does state government need enterprise portfolio management?

States need to begin with the intended outcome of enterprise portfolio management. States need to know the questions we're trying to answer.

In the process of gathering input from state and territorial CIOs regarding their policy and technology priorities for 2023, NASCIO asked this question to gain some understanding regarding the current state of EPM across the states.

How would you broadly characterize the use of enterprise portfolio management process and tools in your state? (select only one choice)

Answered: 51 Skipped: 0



ANSWER CHOICES	RESPONSES
No use, none planned	0.00%
No use currently, planning to implement	13.73%
Limited use	47.06 %
Widespread use	39.22 %

Sixty percent of the responding states and territories are not making full use of enterprise portfolio management processes and tools.

From the [2022 Annual State CIO Survey] we learn the following.

NASCIO | Grant Thornton

The People Imperative

THE 2022 STATE CIO SURVEY

In your state, where is the use of project and portfolio management (PPM) optional vs. where is it mandated?

	Optional	Mandated
Within central IT organization	28%	68%
Across all IT organizations in the executive branch	37%	51%
Across all state level IT organizations	48%	12%

Sixty-eight percent of states mandate project and portfolio management within the central IT organization and 51 percent of states apply that requirement across the executive branch. Clearly, with this requirement, enterprise portfolio management is a necessary and required capability for a majority of states. Twelve percent of states go as far as requiring that all state level IT organizations employ portfolio and project management.

How is the CIO organization moving to deliver services to agencies within the next two years?

- **56%** Consolidation of infrastructure
- **54%** Centralization of IT project management and oversight under the CIO organization
- **48%** Consolidation of services (e.g., help desk, training etc.)
- **38%** Consolidation of applications
- **31%** Responsibility for technology procurement within the CIO organization

Fifty-four percent of states identified centralization of IT project management and oversight as a strategic direction that state CIO organizations are pursuing over the next two years.

Additionally, in the [NASCIO/VMware report on application modernization] we presented the importance of an effective enterprise portfolio management discipline that includes the application portfolio in proactively executing an ongoing transformative modernization initiative. The importance of adequate granularity to enable effective planning was a highlight in this report. Essentially the enterprise portfolio management discipline in state government must be enterprise-wide, be detailed enough to inform planning decisions, and be actively managed.

What other disciplines are essential to the success of enterprise portfolio management?

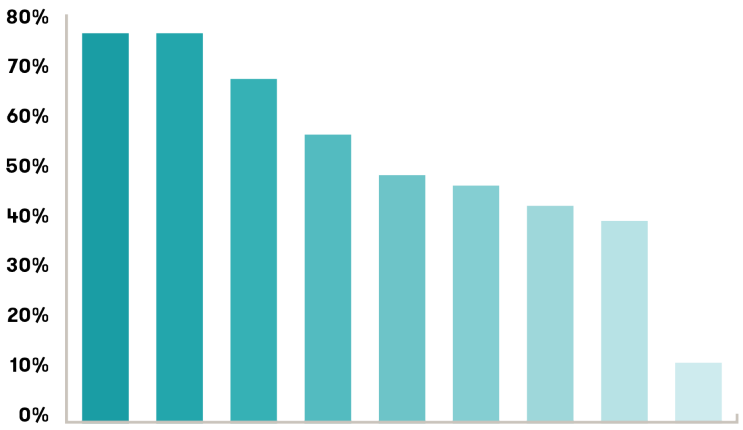
The presenters in our NASCIO webinars series on EPM referenced a number of disciplines that support the effectiveness of an EPM program.

- Enterprise strategic plan
- Enterprise IT investment management (ITIM)
- Enterprise architecture – business and technical
- Enterprise project management and procurement oversight and governance
- Technology business management (TBM)
- Enterprise governance
- Enterprise policy and strategic plan
- Finance and technology business management
- Budgeting and invoicing
- Service management
- Customer engagement
- Business relationship management

Enterprise portfolio management is essentially a management hub connecting to multiple management processes across the state government enterprise.

From the NASCIO 2022 Annual State CIO Survey we learn how states and territories are leveraging their project portfolio management (PPM) discipline.

How are you using PPM in the state CIO organization?



Performance tracking for projects	77%
Transparency	77%
Support or justify investment decisions	68%
Enterprise solution evaluation	57%
Capacity and / or resource management	49%
Modernization and / or technical debt remediation	47%
Optimization and / or rationalization	43%
Vendor management / performance measurement	40%
Administer broadband funding programs	12%

As discussed in this section of the 2022 Annual State CIO Survey, there is a fair amount of agreement regarding the top three categories presented in this graphic. However, states and territories use a wide variety of approaches for addressing performance tracking, transparency and investment justification.

Based on what we learned from our four webinars on this topic, we abstracted up a bit to identify at the highest level six basic plays states and territories must employ at the early stages of creating an enterprise portfolio management discipline. We organize our recommendations within these six plays.

Essential Plays for an Effective Enterprise Portfolio Management Discipline

1	Build a Compelling Business Case
2	Make EPM an Established Office Within the Office of the State CIO
3	Establish Governance for EPM
4	Build a Collaborative Working Relationship with Agencies, Boards and Commissions
5	Establish a Framework for EPM that Includes Roles and Responsibilities
6	Guidance on Tool Selection

PLAY 1: Build a Compelling Business Case

Before a state CIO can build an EPM function they need support which includes commitment from executive management, financial support to essentially pay for the initiation and sustainment of this function and they need people, process and technology.

To gain this support there must be a compelling business case which must present the costs and the benefits, and it must also include what happens if state government does not create and sustain effective enterprise portfolio management.

Compelling motivations for creating an EPM office include the financial magnitude of the state enterprise technology portfolio. The total budget for information technology includes the current project portfolio and sustaining operations for the entire state enterprise. For example, the Commonwealth of Virginia reported the project budget for the "top 15 largest projects" totaled $673 million over several biennia and the "top 15 largest active procurements" totaled $1.8 billion. The state of Washington reports over $2 billion annual IT investment while reported "major projects" totaled $1.7 billion over several biennia. The financial magnitude of information technology in state government clearly justifies and in fact demands that states have in place necessary strategic sourcing, ongoing analytics and monitoring, accounting and audit, and ongoing governance and oversight.

The next compelling motivation is evidence-based assurance of the delivery of intended business value. State government must be able to answer these questions regarding business value:

- Are investments actually delivering the value that was conceived in the original business case?
- Are business, citizen and agency program outcomes actually achieved?
- If so, what are the factors that contribute toward the success of management initiatives, programs and projects?
- Why are some management initiatives, programs and projects not successful?

The lessons learned and insights gained from an effective enterprise portfolio management discipline will continue to:

- Help state government continue to learn and improve.
- Eliminate wasted investment.
- Ensure business cases are comprehensive and objective.
- Ensure that the process for vetting ideas is effectively aligned with strategic intent.
- Prevent project failure.

Effective IT investment management, enterprise portfolio management and operations can ensure state government can:

- Control and monitor IT investment projects.
- Align investments to business goals and objectives.
- Confirm that IT investments are meeting business objectives.
- Identify and track spending on IT investments.
- Leverage IT investment opportunities that may generate internal capital.
- Make informed decisions on an IT investment portfolio by assessing value and risk.
- Provide constituents insight into investments funded by their tax dollars.
- Improve the customer experience for constituents when they are interactive with government services.

The interplay between IT investment management and enterprise portfolio management will provide benefits like these:

- IT investments will be aligned with business strategies.
- Projects will complete and meet performance goals.
- State government will significantly lower project failure risks and improve decision-making capabilities.
- State government will have a systematic approach for managing portfolio risk and controlling investment activities.
- State government will identify new opportunities such as needed program outcomes, shared services and enterprise contracts.
- State government will be positioned to provide transparency into public investments.

> What we have delivered is a playbook of six plays and a series of state presentation webinars to provide states and territories substantive guidance on creating an effective discipline. We believe enterprise portfolio management is a critical capability for managing a diverse and complex array of investments and obligations. The discipline will continue to mature going forward and we'll continue to provide resources to support states and territories in their efforts.

Alan Fuller, *Chief Information Officer , State of Utah, Co-Chair NASCIO Enterprise Architecture & Governance Working Group*

PLAY 2: Make EPM an Established Office within the Office of the State CIO

The enterprise portfolio management function is essentially "mission control" for the state CIO. The state CIO currently has the best enterprise-wide perspective on technology investments and the best purview of what is available and forthcoming regarding advancements in the following:

- Digital government and services
- Citizen experience
- Identity management
- Cloud architecture
- Legacy modernization
- Workforce and human capital development
- Data management
- Enterprise resource planning (ERP)
- Strategic acquisition
- Enterprise IT governance
- Cybersecurity

The state CIO will need authority for the EPM office to be established, be able to perform the necessary processes and have the necessary participation from across the state government enterprise. This is best accomplished by legislative action but can also be accomplished through executive order. An example is Washington state that codified their EPM responsibilities with specific legislation that supports the EPM function and IT investment function employing technology business management (TBM). Washington state also has specific legislation to bridge EPM and enterprise architecture and resource deployment.

The state of Washington has in place the following codified authority: RCW 43.105.205, RCW 43.105.220(2), RCW 43.105.235, and RCW 43.105.341. These statutes:

- Define the authority and responsibilities of the state CIO.
- Require the creation and maintenance of a strategic plan.
- Require the creation, maintenance and evaluation of an investment portfolio.
- Require analytics to judge how well the entire portfolio of investments is performing.
- Require making necessary course corrections based on analysis of the portfolio.

> Enterprise Portfolio Management, when properly exercised, becomes the key differentiator between status quo and moving the organization forward. It ensures that the larger strategies of CIO related to finance, architecture, and service delivery don't take a backseat to day-to-day work. It provides the right visibility into prioritizing limited resources and is able to demonstrate measured value on projects and services delivered.

Fred Brittain, *Former Chief Information Officer, State of Maine, Co-Chair NASCIO Enterprise Architecture & Governance Working Group*

	Technology Business Management (TBM) RCW 43.105.054 Sec 2(f) RCW 43.105.205 Sec 3-4	Information Technology Portfolio Management RCW 43.105.225, RCW 43.105.230 RCW 43.105.235, RCW 43.105.341	Enterprise Architecture (EA) RCW 43.105.265
Definition	A set of best practices for running IT like a business – and more importantly for effectively and consistently communicating the cost of IT and attributing the cost to business services.	**Policy 112** defines an Information Technology (IT) portfolio as a compilation of information about an organizations existing and planned technology investments.	RCW 43.105.020 defines EA as an ongoing activity for translating business vision and strategy into effective enterprise change. EA is a continuous activity that creates, communicates, and improves the key principles and models that describe the enterprise's future state and enables its evolution.
Purpose	**Utilize data** analytics **to identify opportunities for savings and efficiencies of IT expenditures** and monitor ongoing financial performance of technology investments.	**Management of IT across state government**. Manage business process change and IT in support of a statewide portfolio. Provide input to statewide portfolio and **guide resource allocation and prioritization decisions**.	**Develop** an enterprise-based **strategy for IT** in state government, **informed by portfolio management and IT expenditure information**. Translate business vision and strategy into effective enterprise change.

State of Washington Codified Authority and Responsibilities

The state CIO will need the information from the EPM in order to actually fulfill their role to the governor. The EPM is a highly valuable source of information for governance and operations. The state CIO can present the findings from the EPM to state government executives as a critical resource for strategic planning, and ongoing operations. This is particularly important for cabinet level CIOs that bring a business perspective to the cabinet. Questions that are repeatedly asked in legislative sessions and cabinet meetings are inquiries such as this:

- How much is the state investing in technology?
- What is the current and anticipated investment in cybersecurity?
- What workforce skills should be developed?
- How much of the portfolio investment supports transportation, human services and other government lines of business?
- Where is the state underinvesting?

EPM is an enterprise-level responsibility. The state CIO has that enterprise-wide vision and motivation. State governments need a state enterprise business and technology strategic plan that provides direction and the proper level of details regarding goals and objectives for achieving the strategic intent of the administration. There must be line of sight traceability from every activity, operation, program, management initiative, project and capability to this strategic intent. A well architected enterprise portfolio provides traceability which essentially provides the defense and rationale for every component in that portfolio.

The state CIO will use that enterprise portfolio to:

- Guide the effective deployment of technology.
- Monitor IT investments.
- Reduce duplications in technology.
- Reduce unnecessary and expensive diversity in business practices and skills.
- Reduce redundant investment.
- Increase progress in oversight and deployment on project plans.

State CIOs must employ effective **business relationship management practices** to build collaborative working relationships with agencies to ensure strategically aligned and appropriate investments. Portfolio management is about selecting the right investments and will support effective oversight and governance best practices. Statutory code requirements provide the authority and foundation for implementation of policy, standards and guidelines for agencies to follow. This ensures state government is making the right investments and reaching the outcomes outlined in the state government strategic intent.

The **2022 Annual State CIO Survey** presents corroborating evidence that consolidating this responsibility and authority in one place – under the state CIO – is the trend going forward. Fifty-four percent of responding states and territories are in fact intent on centralizing IT project management under the oversight of the state CIO.

> We have found that if you build this capability in enterprise portfolio management, particularly with an emphasis on managing the customer experience, your primary customers, the agencies, will want to participate as collaborative partners. In other words, if you build it, they will come.

Mike Leahy, *Former Secretary and State Chief Information Officer, State of Maryland*

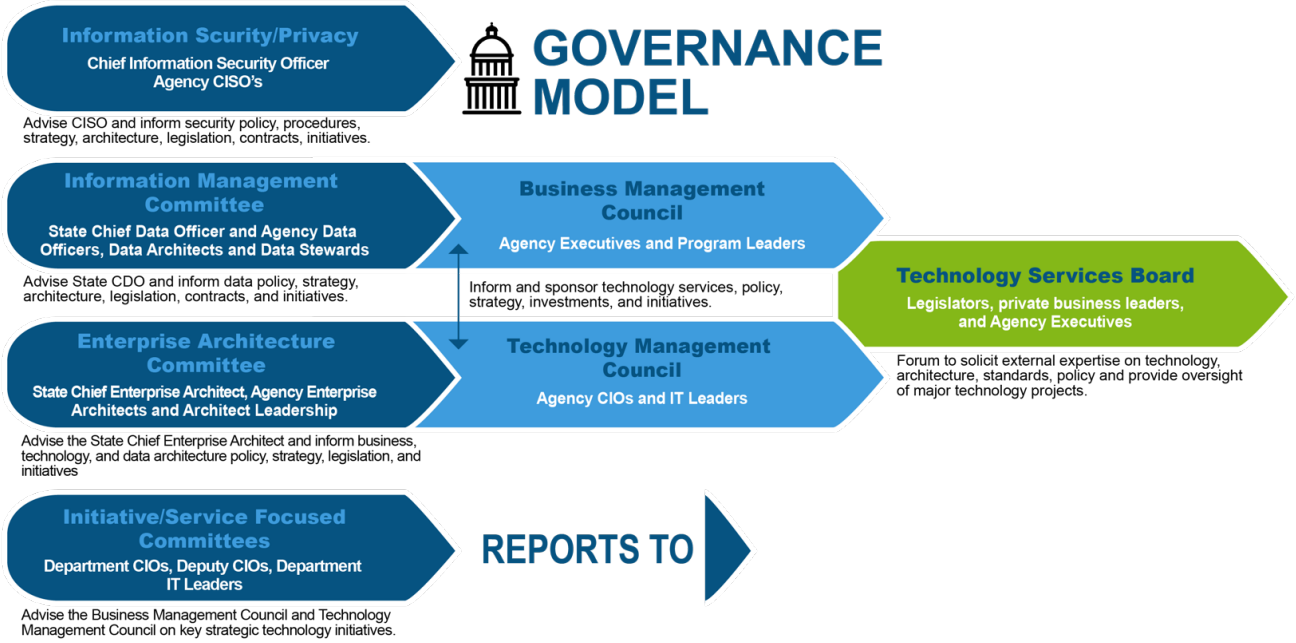
PLAY 3: Establish Governance for EPM

Effective enterprise portfolio management is a team sport. It must involve all stakeholders who will hold decision rights relative to those decisions that are relevant to each participant. The evaluation and rating criteria for prioritizing investments, projects and programs should be developed collaboratively and weighted for relative importance. In evaluating any project, and particularly those that come with one time grant funds, there must be careful consideration of ongoing funding for operations once a project is completed and delivered. Too often states have had an initial capital investment but without sustained funding for operations. This can lead to government shortfalls and the abandonment of significant investments. Governance organizations and process must evaluate opportunities, ideas, business cases and project plans to ensure sustained funding and support is addressed.

Effective governance will ensure representation, collaboration, shared accountability, and the appropriate recognition of relevant risk. Questions that help identity stakeholders are:

- Who is asking for this project deliverable?
- Who is funding the work?
- Who has decision rights?
- Who will benefit from this project, program or management initiative?
- What are the outcomes sought and who must be involved to achieve those outcomes?
- Whose expertise is required to achieve the success of this initiative?
- Who are the business representatives from outside of technology?
- Who is accountable to ensure evaluation and audit occurs and course corrections are made?

The state of Washington employs the following governance structure that describes who plays a role in the decision making for various aspects of the enterprise portfolio.



State of Washington Governance

Play 4: Build a Collaborative Working Relationship with Agencies, Boards and Commissions

Ensure agencies, boards and commissions are involved when developing and adopting principles for guiding your enterprise portfolio management discipline. Involve them throughout all levels of the governance model and development of principles, standards, process and roles. That said, in most cases you'll want to keep technical details behind the scenes (e.g., what technologies you actually employ on a project and your EPM discipline).

Part of the emphasis here is ensuring a very positive, collaborative and engaging customer experience. The Commonwealth of Virginia ensures that this is the case by placing the enterprise portfolio services under their customer experience function within the office of the state CIO. The state of Washington has detailed who has a part to play at each tier within their governance framework.

In most cases, the state CIO's office relies on the agencies, boards and commissions to bring citizen perspectives to the governance process. In the state of Maryland, for example, the State CIO's direct customers are the other agencies in the executive branch. The agencies know and understand what the citizens and taxpayers are demanding from their office and leverage the department of IT to help determine and implement IT solutions. In other cases, the CIO's office has the authority, ability and channels for engaging citizens and will employ that ultimate constituency in their governance structure to ensure that state government is serving its citizens. For example, the state of Washington is in the process of creating a citizen portal to engage citizens, provide access to services and provide information regarding the state IT investment portfolio.

More and more states are creating similar citizen portals that are focused on citizen access to services and information without requiring knowledge of the organizational structure of their state government.

In Washington state, agencies, boards and commissions set the criteria for proposed technology investments as part of the annual statewide budgeting process. The current criteria as presented on the Washington EPM webinar are as follows.

> I believe enterprise architecture, portfolio management and technology business management (TBM) must intersect for enterprise portfolio management (EPM) to achieve its full potential. TBM positions us to balance our enterprise technology portfolio by monitoring investments in IT operations, IT project management, IT modernization and innovation.

Cammy Webster, *Enterprise IT Portfolio Manager, State of Washington*

CRITERIA
Agency Readiness
• Due diligence • Governance and management • Planning and readiness
Technical Alignment
• Strategic alignment • Technical alignment • Reuse and interoperability
Business Alignment
• Business driven technology • Measurable business outcomes
Urgency
• Decision package urgency
OCIO Analysis
• Recommendation for Level of Funding • Recommendation for Gated Funding

State of Washington Evaluation Criteria

What we've seen in states that have created consistent partnering with agencies through formal governance and effective business relationship management is an environment of collaboration and trust. This is evident when agencies are taking the initiative to seek out the state CIO for exploration of ideas when these ideas are still in the formative stage. The state CIO is viewed as a trusted advisor and ideas for better services and better government are explored together. These are not strictly technology discussions. Rather, these are exploratory business transformation discussions.

> Many disciplines are involved when you talk about enterprise portfolio management (EPM), including enterprise architecture, investment management and Technology Business Management (TBM). TBM plays a crucial role because it allows us to look across the technology towers and evaluate the 'spread' of our investments. All of these components are needed for an effective EPM program.

Bill Kehoe, *State Chief Information Officer & Director, State of Washington*

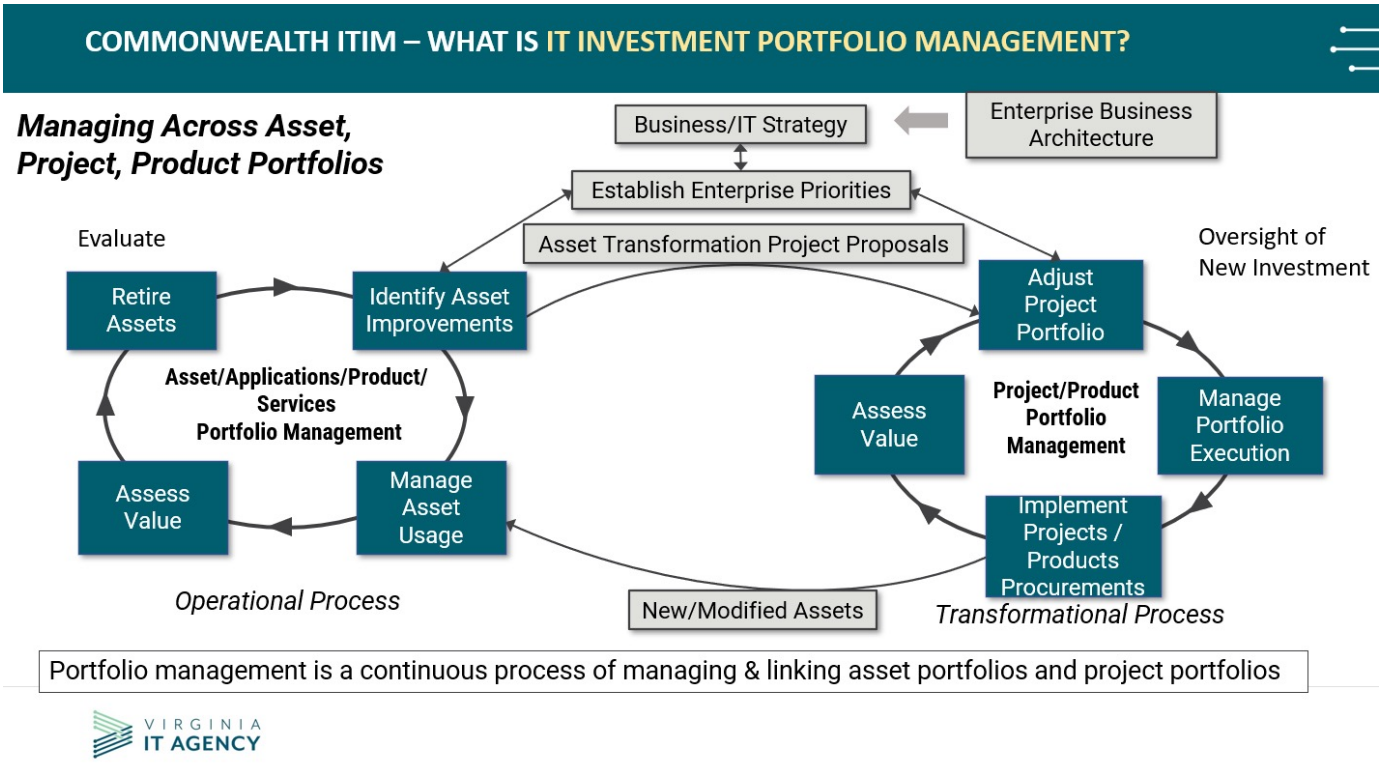
PLAY 5: Establish a Framework for EPM that Includes IT Investment Management

The operating discipline for enterprise portfolio management must include principles, frameworks and processes for navigating the frameworks. The capabilities of this operating discipline will ensure alignment, traceability and accountability.

An effective EPM operating discipline will provide insights regarding how state government is managing its enterprise portfolio and provide answers to questions like these:

- Do you have the right projects – are you doing the right things and doing them the right way?
- Can you ensure you have the right project scope?
- Can you ensure you are achieving the intended outcomes as outlined in the project intent AND you are delivering value that enables the enterprise strategy?
- Are you addressing known risks?

The Commonwealth of Virginia describes the integration of enterprise portfolio management, project management and strategic planning as follows.



Commonwealth of Virginia IT Investment Management

IT investment management (ITIM) is a key component in performance management within enterprise portfolio management. The fundamental principles of investment management support the efficiency and effectiveness of investment and government operations. ITIM is about the following:

- Selecting the right capital investments and service acquisitions.
- Ensuring that these investments align properly to the organization's missions, goals and objectives.
- Ensuring that the investments are performing as planned.
- Determining if the investments delivered the anticipated business value.

At the center of this process is an automated IT investment management capability which captures all IT investments and provides analytical tools to assist management with business decisions.

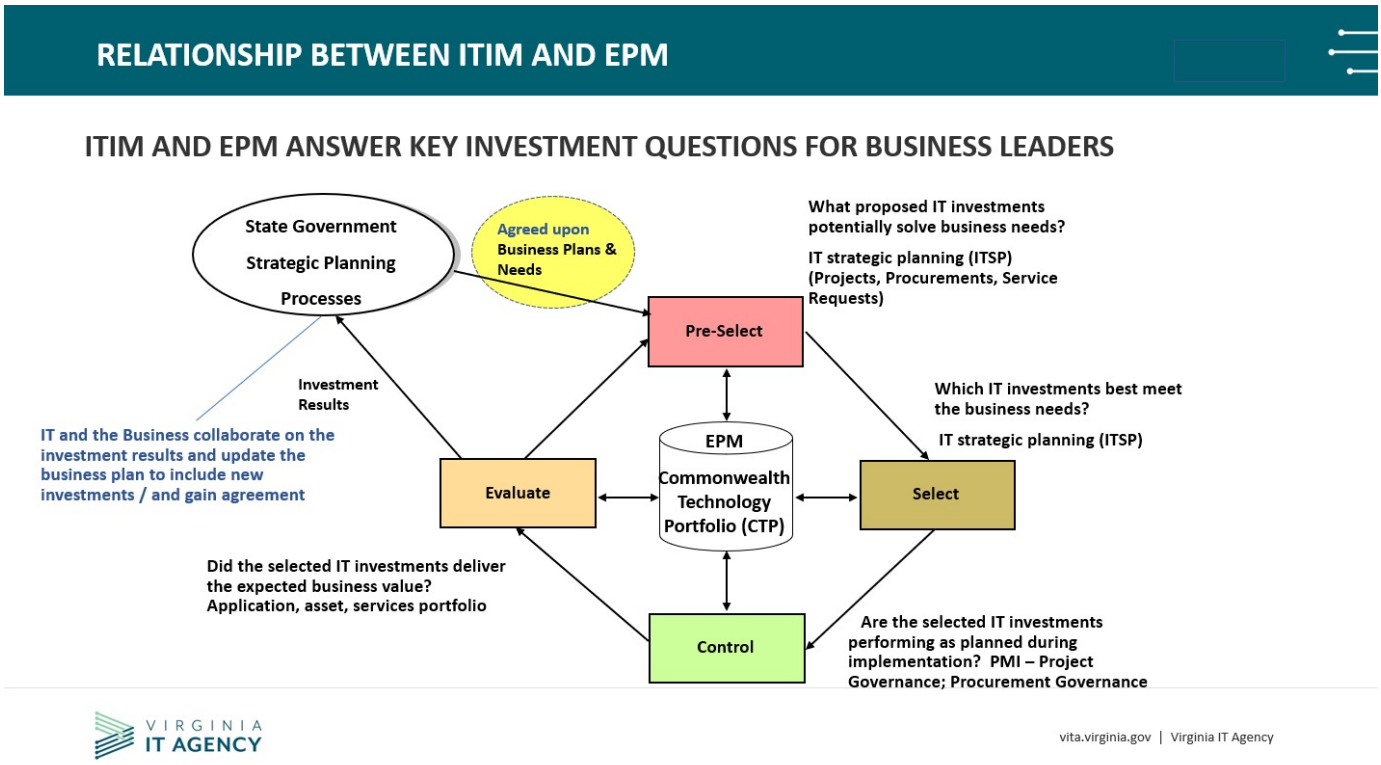
ITIM is the primary process for:

- Identifying which proposed IT investments potentially solve agency business needs.
- Selecting IT investments that best meet the needs of the business.
- Monitoring the performance of the initiatives for developing and placing the selected IT investments into operation.
- Determining if the selected IT investments are continuing to deliver the expected business value over time.

The ITIM process consists of four dynamic phases which should be carried out, at a minimum, once a year, coinciding with the annual budget cycle.

Phase	**Goal**
Pre-Select (Identify) Phase	Identify, analyze, and document IT investments that support agency business needs.
Select Phase	Decide from among the investments identified in the pre-select (identify) phase which investments to undertake. This phase will employ evaluation criteria that are defined collaboratively with stakeholders.
Control Phase	Ensure that IT investments are developed and placed in operation using a disciplined, well-managed, and consistent process. This ensures adoption of a process or technology that was developed as a priority management initiative, program or project.
Evaluate Phase	Compare the actual performance results and benefits of an investment to the range of target performance measures established for the investment.

The Commonwealth of Virginia described in detail the interaction between ITIM and EPM in their webinar presentation using the following diagram.



Commonwealth of Virginia ITIM and EPM Interrelationship

> Our main goal is to maximize our business value and minimize our risk.

Constance Scott, *Manager , IT Investment Management Division, Virginia Information Technologies Agency (VITA)*

PLAY 6: Guidance on Capabilities, Disciplines and Tools that Support EPM

Enterprise portfolio management requires and employs a host of disciplines and expertise. That said, EPM is not an exact science. There are a variety of approaches and we've seen a diversity of approaches even within the state webinar presentations we've delivered so far. No matter what approach or processes are employed, effective enterprise portfolio management will require quality data. There must also be a determination of the tolerance level for data quality and states must establish data standards and data reporting standards to make the connection to data management. Thus, the tie to data management.

One of the most significant mutually supporting relationships is the tie between enterprise portfolio management and finance. What makes data management and reporting so challenging is the use of accounting codes. Some agencies use certain accounting codes differently. Some very large agencies will report roll ups and keep the details within the agency. This makes the tracking of spending highly challenging and adds to the inaccuracies in reporting. Financial reporting within EPM must include qualifiers such as, "based on this report from this date from this agency current investments in the application tower are … ".

One way to improve financial reporting is to tap into the actual system of record for financial data as a replacement for self-reporting of financial data. This change in approach in the state of Washington produced significant progress in ensuring quality financial data feeding technology business management (TBM) and reporting.

Another issue related to reporting has to do with definitions, for example, what constitutes an "IT investment." This will remain an issue because of the necessary overlap and interplay between business activities and technology. In the present day, business activities are inseparable from the technology that is deployed and employed to conduct those activities.

As we analyzed the topic of EPM, we created a list of enabling capabilities through discussion and brainstorming. The list we developed will help describe the breadth of capabilities that enable and support an effective enterprise portfolio management discipline – the development of which should be a crawl, walk, run approach. Start with simple approaches and develop depth, breadth and sophistication over time. One of our presenters made it clear that you don't need sophisticated tools to get started. You can begin with spreadsheets or simple databases to begin to document what you have and begin to organize your data. For each of these enabling capabilities there will be process, technology and people aspects.

EPM Enabling Capabilities

Groupings

IT Investment Proposed and Existing

- Application and infrastructure inventory
- Configuration management database
- Financial management
- Interfaces across and among the various capabilities to inform and provide insights
- Portfolio balancing
- Project management
- Reference architectures
- Service catalog

Data

- Analytics / business intelligence
- Data quality management
- Data repository
- Taxonomies

Governance and Oversight and BRM

- Business relationship management
- Enterprise architecture
- Governance
- Marketing/communication/training
- Policies, standards and compliance, principles
- Roles and responsibilities
- Strategic planning
- Workflows and approvals

Finance

- Common chart of accounts
- Finance/accounting
- Financial / fund / budget management
- FinOps
- IT investment
- Technology business management

> We strive for a culture of continuous improvement wherein we examine not only what we are doing but why we are doing it. When we ask ourselves "why" and we don't know the answer, that's when it's time to take a second look to determine whether what we are doing is actually improving the customer experience.

Ashley Laymon, *Chief Experience Officer, State of Maryland*

There is not a single tool that fulfills all of this. Any tool a state acquires must have the capability to interface with other enterprise tools such as business intelligence and analytics. Eventually, state government can move toward automating some aspects of governance, analytics and performance monitoring to make course corrections before issues become real problems.

This list of capabilities is essentially a list of technical capabilities, business processes and workforce skill and all of these are needed. A state may have to rely on consulting services at the beginning and work toward skill transfer to state employees at some point. There may be a center of excellence, an institute, or an association that can provide further guidance on these capabilities. Likewise, which tools are acquired will depend on need and where the state is relative to their ongoing maturity journey. This maturity journey will involve possibly maturity curves for people, processes and technology.

From our research and our webinar series we developed these key recommendations and key questions with assistance from our presenters.

Key Recommendations

1. Continue to review the NASCIO awards for ideas and contacts in other states.

2. Run the plays outlined in this report. Adapt and modify the plays to fit your particular circumstances.

3. Wherever possible leverage existing state government processes and data collection that are already in place to inform the enterprise portfolio function.

4. Strategic enterprise portfolio management supports the state CIO and other state executives. To be effective, the EPM group must have either a direct line or dotted line to the state CIO. A strong enterprise portfolio management organization provides valuable input into executive decisions.

5. Collaborate with other states and territories regarding their enterprise portfolio management discipline including roles, process and supporting technologies.

6. Exploit your request for information (RFI) process to gain ideas regarding enabling tools and other capabilities.

7. Clearly define business requirements before posting any request for proposals (RFPs) for tools.

Key Questions

1. What are the business questions that an enterprise portfolio management function needs to answer for executive management?

2. What types of **business cases** are required by your state to present for funding? The various types of business cases must be effectively constructed. For example:
    a. Business cases can be categorized as preliminary, detailed and budget business case types.
    b. Preliminary business cases are exploratory.
    c. Detailed business cases must be constructed with necessary analytics and present a compelling business proposition.
    d. Budget business cases must present funding options and impact on the state budget.
    e. Business cases may be scrutinized by oversight and governance committees, and should emphasize citizen impacts, effects and outcomes.

3. Who should be included in governance? Evaluate who should be included in your governance structure for enterprise portfolio management.

4. What tools are other states employing to support their discipline? Learn what are the strengths and weaknesses of these tools and what states would recommend if they were to repeat those investments decisions.

5. What is the appropriate structure for enterprise portfolio management given your state organizational structure?

> We created the position of chief enterprise architect as the director of the Office of Strategy and Planning. This fully supports strategic planning and our approach to managing the digital enterprise across all portfolios via business outcome driven architecture.

Brad Long, *Chief Enterprise Architect and Cluster CIO for Families, Children, Elderly & Veterans Department of Innovation & Technology, State of Illinois*

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