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December 26, 2024

The Honorable Governor Josh Green, M.D.

The Honorable Ronald D. Kouchi
President of the Senate
and Members of the Senate
Thirty-Third State Legislature
State Capitol, Room 409
Honolulu, Hawaiʻi 96813

The Honorable Nadine K. Nakamura
Speaker and Members of the
House of Representatives
Thirty-Third State Legislature
State Capitol, Room 431
Honolulu, Hawaiʻi 96813

Aloha Governor Green, Senate President Kouchi, Speaker Nakamura, and Members of the Legislature:

For your information and consideration, we are transmitting a copy of the Progress Report on the Consolidation of Information Technology Services pursuant to Act 179, (SLH 2022) and its amendment Act 173 (SLH 2024).

In accordance with Section 93-16, Hawaii Revised Statutes, this report will be posted on the Department of Accounting and General Services website at http://ets.hawaii.gov (see "Reports").

Sincerely,

Keith A. Regan
Comptroller

Christine M. Sakuda
Chief Information Officer

Attachments (1)

Act 179 (SLH 2022) / ACT 173 (SLH 2024)

State IT Consolidation

Preliminary Progress Report and Recommendations

for the State of Hawai‘i 2025 Legislature

Prepared by the Office of Enterprise Technology Services

For questions, please contact ETS@hawaii.gov

1 Introduction and Executive Summary

1.1 Introduction

1.1.1 Act 179 (SLH2022) and Act 173 (SLH2024)

The Information technology (IT) Consolidation initiative under Act 179 (SLH 2022) and its amendment Act 173 (SLH 2024) aims to improve the efficiency, security, and effectiveness of the state's business operations through coordinated and integrated information technology (IT). The Acts aim to gain economies of scale, enhance service delivery, and ensure compliance with growing regulatory requirements for accessibility, information storage, data sharing, and security.

1.1.2 Aims of IT Consolidation

Act 179 (2022) summarizes the intended benefits of consolidation as: “to gain economies of scale and provide for a more efficient and secure use of technology and information management. The consolidation of information technology services will also help to ensure that the State remains in compliance with growing regulatory requirements for accessibility, information storage, data sharing, and security.” Table 1. is simplified from the original IT Consolidation Project Charter in 2023, based on Act 179.

Intended Benefit / Goal	Success Metrics	Impacted Stakeholders
Consistent and improved level (quality) of services	Mostly quantitative	Executive Branch Departments, Public
Reduction of IT costs	Mostly quantitative	Executive Branch Departments, Legislature, Public
Greater control over security	Mostly qualitative	Executive Branch Departments, Public
Reduction of risks, including non-compliance and ensuring business continuity	Mostly qualitative	Executive Branch Departments, Legislature, Public

Table 1. Intended Benefits and Goals of State IT Consolidation.

In short: **Better services, more cost effectively, through integrated IT.**

1.1.3 Paving Way for Final Report for the 2026 Legislature

This report (2024, for the 2025 legislature) paves the way for the 2026 legislature, which will provide expanded analysis and recommendations in several areas and ***will include details on specific initiatives***, ***including budgeting requirements, procurement & implementation plans and success metrics*** – for example potentially for an integrated state-wide IT management platform.

1.2 Strategic Recommendations

If key recommendations can be summarized into one phrase it would be ***consolidate where it makes sense***, respecting each department’s unique circumstances and requirements. Last year's report in chapter 6.1 provided analysis of the required effort vs. anticipated value of consolidation. This analysis will be revisited more thoroughly in the final report for the 2026 legislature.

The state can achieve benefits of economies of scale and improved service quality while maintaining flexibility to meet diverse departmental needs by optimizing and expanding its current centralized services and strengthening the business and vendor management focus of IT staff at the departments. Service consolidation should occur at multiple levels: State-wide (ETS), withing departments and across departments.

The key recommendations of the Working Group are summarized in Table 2 (next page) and are detailed in:

1. Chapter 4 - Addressing IT staff positions
2. Chapter 5 - Addressing foundational capabilities, including effective enterprise IT governance and workforce
3. Chapter 6 - Addressing shared services development, including IT operating model and core shared services
4. Chapter 7 - Addressing workforce development

Recommendation	Rationale and Impact	Timespan	Funding Considerations
Integration of IT Strategic Planning with Budgeting & Portfolio Management	Ensures background and context for reviews of IT budget requests. Enables early identification of consolidation opportunities and cost optimization before budgets are fixed. Critical for enabling systemic improvements and avoiding redundant investments.	• 6-12 months initial implementation • 3-4 year maturity	Primarily operational costs for process implementation and coordination
State-wide, end-to-end integrated IT Management Platform	Current fragmented tools make holistic management impossible. A Solution covering end-to-end needs from strategic planning and budgeting to service operations, and vendor management, underpinned by automated asset inventorying, would enable data-driven planning and decisions across the entire IT service portfolio lifecycle.	• 12-18 months for pilot • 2-3 years full rollout	5-year TCO estimated (conservative, feature & user scope dependent) up to $10M.
Evolution of IT Workforce – “shift left”	Moving from direct service delivery focus to 1) brokering and managing service offerings from commercial providers and 2) allowing state IT staff to focus more on understanding and empowering business/program transformations.	• 2-3 years for pilot transitions • 5-10 years for full transformation	Operational costs for standards, processes and tooling, implementation and coordination, training and development.
Attain and Nurture IT Talent	Coordinated approach needed across the state to address recruitment and retention challenges within existing frameworks.	• 18-24 months for framework • Ongoing execution	Mix of operational costs and specific program fundings
Adopt Service-Oriented Operating Model	Replaces application and project-oriented thinking and enables standardized service frameworks across all delivery options with consistent metrics and SLAs. Improves service planning through business-aligned definitions and clear ownerships. Allows objective comparison between internal/external delivery. Reduces redundancies through service portfolio management.	• 3-4 years initial implementations • 5-10 years for full maturity	Operational costs for standards, processes and tooling, implementation and coordination, training and development.
Continual Infrastructure & Platform Modernization	Meet growing and ever-shifting demands for and opportunities of digital services while improving security and efficiency through modernization. Extending robust, shared compute and storage services and better enabling sharing of data.	• 2-3 years for core modernizations • Ongoing evolution	Major investment required ($6+M currently identified for core initiatives)
Enterprise (Shared) Applications (ERP) Extensions	Core administrative systems require modernization with careful planning to ensure business process improvements.	• 3-5 years for core modules • 5-7 years fuller transformation	Significant investment required depending on scope
IT Staff Consolidation Driven by Departments	Must be driven by departments and their needs and thorough analysis. Ensure agreed service levels and improvements. Requires broad stakeholder engagement including departmental executive level sponsorships, ETS cannot drive nor execute alone.	• Based on department readiness • Typically 12-18 months per phase	Primarily operational costs for planning and transition management.

Table 2. Strategic Recommendations.

1.3 Analysis of State’s Critical Information Systems and Consolidated Data Hosting

Chapter 8. In response to new requirements in Act 173, Chapter 8 provides an assessment of the state's major information systems and their hosting environments. The assessment categorizes systems based on business criticality attributes including impact on essential services, business continuity requirements, compliance needs, and data sensitivity. Major systems have been classified as either Mission Critical or Business Critical, with corresponding hosting requirements defined for each category.

The state maintains a strong preference for major cloud platforms, following a strategic direction set since 2012 and reinforced in subsequent IT strategic plans. This "evergreen computing" approach emphasizes platforms that continuously evolve their capabilities, enabling state systems to benefit from ongoing security, performance and functionality improvements with minimal operational overhead. Current analysis shows that most of the state's consolidated data already meets the hosting requirements as defined in chapter 8.2, with specific plans in progress to address any remaining gaps.

1.4 Progress of Act 179 Since the Report to the 2024 Legislature

The December 2023 (for the 2024 Legislature) report established a valuable foundation through its committee-based development structure, producing detailed findings and recommendations which will be carried forward to

the final report. Building on this strong foundation, this year's report restructures the approach using the service taxonomy introduced last year, combined with a strategic IT operating model framework. Both of which will be refined in early 2025. This evolution allows us to align the implementation of the recommendations with operational realities and maintain continuity of the core findings.

Chapter 9 summarizes achievements in 2024, focused on the Office of Enterprise Technology Services (ETS) activities. These activities emphasize centralized service improvement and modernization while maintaining departmental autonomy in business operations.

Key progress on extending and improving centralized services includes implementation of the Microsoft 365 G5 platform for over 14,000 users, continued development of the citizen identity infrastructure, enhanced network resilience, and advancing the Government Private Cloud with a successful proof of concept.

New centralized services include the enterprise notification system, cloud-based constituent relationship management, and enhanced Adobe eSign capabilities. On IT governance, ETS established a State Data Task Force, enhanced procurement processes (Request for Proposal development) and project management standards, while refining the IT service catalog and portfolio models. Looking forward to 2025-2026, major initiatives include Government Private Cloud 3.0 with hybrid capabilities, comprehensive network modernization and establishment of a new Data/AI Office.

2 Ongoing Strategic IT Planning Activities

The state IT Strategy refresh, ETS Strategic and Operational Plan, and the state’s first Public Digital Service Vision and Strategy are in development. These provide a framework for technological advancement and improved service delivery, including service consolidation plans, across all levels of government. Concurrently, individual departments will be developing their own IT strategies. The following summaries provide an overview of these initiatives and table 3. provides a consolidated view of the major strategic planning initiatives currently underway across the State of Hawaii's IT landscape, including their core purposes and planned completion dates.

Planning Effort	Description	V1.0 Date
State IT Strategy	The State of Hawaii is updating its IT Strategic Plan to align with current technological trends and state priorities. The new plan, while still in draft form, outlines a comprehensive approach to modernizing and enhancing the state's IT capabilities.	Q1 2025
ETS Strategic and Operational Plan	Development of the ETS IT Strategy and Operational Plan will be inferred from the state IT Strategy and the Digital Services Vision. This approach positions ETS as both a service vendor and a strategic partner to state agencies, driving innovation and efficiency in IT operations across the state government.	Q2 2025
Public Digital Services Vision and Strategy	The State of Hawaii has developed a comprehensive vision and strategy for its public digital services, outlined in a Vision and Strategy document for Hawaii's Public Digital Services 2030. This aims to define a connected, efficient, and user-centric digital government ecosystem for Hawaii, leveraging emerging technologies and best practices in digital service delivery.	Q1 2025
State ERP Strategy	ETS in 2024, in collaboration with DAGS business sponsors, are developing a thoughtful and thorough “ERP Strategy and Roadmap” that documents the current state of accomplishments and key lessons learned since 2015 and develop a pragmatic incremental implementation roadmap that is tied to meaningful business outcomes for the state.	Q2 2025
Departmental IT Strategies	As mandated by Hawaii Revised Statutes §27-43, each executive branch department is required to develop and maintain its own information technology strategic plan. This requirement ensures that IT strategies are tailored to the specific needs and goals of each department while aligning with the overall state IT strategy. ETS will facilitate this process and actively support the departments.	Q4 2025

Table 3. 2024-2025 State IT Strategic Planning Activities.

3 Five Year Plan – Overview

First request of Act 173 is for the IT Consolidation Working Group to:
"*Develop a plan for the phased consolidation of all state executive branch information technology services and staff, where determined practicable by the working group, within five years.*"

Working Group's approach to state's IT consolidation emphasizes service centralization and optimization over staff centralization, recognizing that improved service delivery can be achieved through multiple enterprise (State as a whole) levels. This approach focuses on identifying and implementing the most effective delivery service options for each type of IT service, whether

1. Centralized state-wide through ETS
2. Consolidated within (typically larger) departments
3. Shared across departments through collaborative arrangements.

State-wide centralization through ETS represents the primary model for foundational services like infrastructure, security, and enterprise applications. In addition, ETS helps identify and facilitate opportunities for department-level consolidation of potentially department wide services and cross-department sharing of certain common capabilities. This multi-model approach allows for optimal balance between standardization and specialization, ensuring that services are delivered at the most effective scale and scope.

The State of Hawaii's IT rationalization journey is a significant transformation of how technology services are delivered across the executive branch. Table 4. Below outlines a structured 5-year implementation roadmap for executing the strategic recommendations detailed in Chapter 5, while maintaining focus on the core principles of service excellence, risk management, and evolutionary change.

Year 1 (2025) - Foundation Building	Year 2 (2026) - Core Modernization	Year 3 (2027) - Service Transformation	Year 4 (2028) - Optimization	Year 5 (2029) - Innovation
• Implement integrated IT strategic planning and budgeting • State-wide IT management platform pilot • Launch service and product oriented operating model development • Start redefining IT staff roles and recruitment (job ads) • Introduce Service Manager Role • Start Government Private Cloud modernization • Network infrastructure modernization • Develop Data/AI governance frameworks	• Refine adoption of integrated IT strategic planning and budgeting • Expand state-wide IT management platform pilot • Complete GPC 3.0 implementation with hybrid capabilities • Implement comprehensive security controls enhancement • Continue redefining IT staff roles and recruitment (job ads) • Continuing service and product oriented operating model adoption • Continuing adoption of Service Manager Role • Complete network modernization • Deploy Microsoft 365 service expansion including Teams voice • Complete Data/AI Office implementation • Begin EFS vendor selection and implementation planning	• Complete adoption of integrated IT strategic planning and budgeting • Continuing state-wide IT management platform adoption • Finalize department IT strategies alignment • Complete service taxonomy implementation • Continuing service and product oriented operating model adoption • Continuing adoption of Service Manager Role • Enhance Service Center capabilities • Complete Adobe services enhancement • Expand data analytics platform • Continuing EFS implementation	• Complete state-wide IT management platform adoption • Complete EFS core modules implementation • Continuing service and product oriented operating model adoption • Continuing adoption of Service Manager Role • Enhance identity infrastructure • Expand shared service portfolio • Limited department-led IT staff consolidations based on readiness and solid business cases • Complete enterprise device management	• Complete EFS transformation • Optimize service and product oriented operating model and service management • Enhance data and analytics capabilities • Continue department-led staff consolidations • Evaluate and adjust service delivery models

Table 4. Indicative Implementation Roadmap.

3.1 Ensuring Business Continuity and Empowering Development

This section addresses the IT Consolidation Act 173 section 1, sub-section E, that states:
"*(E) Recommendations to ensure that agency services are not interrupted during the phased consolidation;"*

Excellence and Extension of Centralized Services: ETS will continue to focus on developing its carefully selected services and its service delivery capabilities (including 3rd party vendor ecosystem), so that the departments would find it attractive to leverage these centralized services, over trying to deliver or source these themselves.

Refocusing departments IT staff to more business and vendor management-oriented activities. Refocusing of departments' IT staff to more business and vendor management-oriented activities, instead of technical service delivery in which vendors will always be more capable, including business continuity and resiliency.

By prioritizing rationalization and optimization of services over organizational consolidation, state can achieve the benefits of economies of scale and improved service quality while maintaining the flexibility to meet diverse departmental needs. Furthermore, service consolidation can and should occur at multiple levels. One of ETS's key roles includes identifying and implementing (or supporting) the most effective options, whether

1. State-wide centralization (through ETS)
2. Within departments, reducing redundancies (typically larger departments)
3. Across departments through collaborative arrangements

Risk Management: Changes to service delivery models must maintain or enhance current security postures, and business continuity requirements should drive hosting and service delivery decisions. Comprehensive risk assessments must precede any significant changes to service delivery models to ensure maintenance of critical operations.

Evolutionary Rather Than Revolutionary Changes allow for sustainable transformation and incremental improvements that can demonstrate the benefits. Changes should be structured to be reversible to manage risk. Success in smaller initiatives builds confidence and capabilities for larger transformations, creating a foundation for lasting improvements.

Service rationalization is additionally guided by principles such as:

- Directed by and synchronized with the state IT Strategic Plan and ETS Operational Plan, as well as the departmental IT Strategic Plans
- Building and ensuring critical foundations before major changes
- Maintaining flexibility to adapt to changing needs and opportunities

Monitoring and Adjustment: Any detailed implementation plans with significant service consolidation aspects to them will be:

- Reviewed quarterly for progress against milestones
- Updated annually to reflect changing priorities
- Adjusted based on lessons learned and new opportunities
- Measured against defined success metrics

The strategic roadmap illustrated in this chapter provides a guiding framework forward, maintaining flexibility to adapt to evolving needs. Regular monitoring and adjustment will ensure the state achieves its IT consolidation goals while delivering improved services to all stakeholders.

4 Five Year Plan – IT Staff Positions

This section addresses the IT Consolidation Act 173 section (1), sub-sections (A) and (B), that states: "*(A) An identification of the specific positions and functions to be transferred in each department; and B) Proposed dates of transfer for each position and function;"*

The 2023 IT consolidation report stated in its chapter 3.8 the following: "Retaining staff will allow the already resource strapped department IT functions to continue supporting the core IT capabilities unique to the departments and extend more effort to development tasks as opposed to common/shared tasks which can be sourced from ETS or from properly vetted 3rd party service and solution vendors."

The Working Group recommends gradual refocusing of departments' IT staff to more business and vendor management-oriented activities, partially replacing technical service delivery focused activities.

If any IT staff position transitions from the departments to ETS were to occur, the consolidation of IT positions should be driven by departments' needs and validated by solid, strategy informed business case analyses. Position movements should follow a structured process based on thorough cost-benefit analysis results. A successful transition requires, among other things:

- Department leadership commitment
- Staff engagement and support
- Performance metrics tracking, regular progress monitoring and feedback mechanisms

Most critical of all here is the ability to guarantee that the transitioned positions will continue to provide at a minimum the same levels of service as before for the departments where those positions transitioned from.

The working group believes that refocusing IT roles closer to business and vendors (who will bear the weight of most of the technical service development and delivery responsibilities) rather than moving critical resources away from proximity of the business is of paramount importance for the continual betterment of IT services at the state. Refocusing is enabled by smart retainment tactics including re-skilling, and more effective and efficient recruitment.

5 Five Year Plan – Facility, Personnel and Operational Needs

This section addresses the IT Consolidation Act 173 section (1), sub-section (C), that states:
"*(C) Proposed information technology facility, personnel, and operational infrastructure needs of the consolidated information technology agency, with projections on future integration needs as additional agencies' information technology staff and services are added;"*

5.1 Integration of Strategic Planning and Budgeting

Any state improvement effort, including IT consolidation, by default requires a holistic view. This especially holds true for the state's IT strategic planning and budgeting process. Opportunities exist to establish mechanisms to identify the promising improvement and consolidation opportunities before the budgets are fixed and approved. Without this early, upstream visibility, significant improvements and consolidation efforts become more difficult. Key processes that currently need optimization and better integration include:

1. **IT Strategic Planning**
   - State IT Strategy setting guiding priorities
   - ETS Plan focusing on state-wide centralized service extensions, improvements, and transformation enablement
   - Departmental IT strategies addressing specific business/program needs
2. **Budgeting**
   - Early alignment of IT spending with strategic priorities
   - Identification of shared service opportunities and reduction of redundant investments
   - Cost optimization through centralized solutions, both within departments and state-wide ETS services
3. **Investment Portfolio Management**
   - Consistent evaluation framework for IT investments (chapter 5.1.3)
   - Regular portfolio reviews and adjustments (current process by ETS Office of Information Technology Governance)
   - Benefits tracking and realization (requires design and institutionalization)

To enable informed decision making of IT improvements, consolidation opportunities and implementations, these three processes need to be integrated at the state (ETS facilitating) and departmental levels.

5.1.1 Collaboration with ETS

State's formal budget cycle governs all key funding sources, including the General Fund appropriations, Federal Funds/Grants, Trust Funds and Special Funds. Each of these have their own timing and process requirements and require flexible, year-round identification, preparation, and planning activities. The collaboration model and cycle described below (Table 5.) remains relevant across all funding sources, but departments and ETS must maintain ***continual dialogue to identify and pursue opportunities as they arise, rather than waiting for specific calendar milestones.***

Period	Event/Activity	Recommendations for Collaborative Actions
Concentrating most in July – September	**Pre-Budget Preparations with departments, B&F and ETS**	• **Review current operational IT spending** • **Identify new IT needs (strategic projects, capital investments)** • **ETS review and shared services / rationalization opportunities identification** • **ETS facilitates cross-department coordination where synergies exist** • **Departments align requests with their IT strategic plans, facilitated by ETS**
October	Budget Submissions to Governor via B&F	• Finalizing departmental IT budgets with ETS input, including prioritizing IT initiatives (supported by a standard IT investment assessment frame)
November – December	Governor's Budget Finalization	• Advocate for priority initiatives.
January – April	Legislative Session (Budget Deliberations)	• Testimonies on funding requests and addressing inquiries.
May – June	Post-Legislative Adjustments and Fiscal Year Closeout	• Updating plans as pertinent based on approved allocations. • Reviewing lessons learned from current year's spending.

Table 5. ETS and Departments' IT Budgeting Collaboration.

To ensure effective strategic alignment - across all funding sources - ETS should serve as a bridge between departments and oversight bodies (B&F, Legislature, Ways & Means, House Finance) by:

- Maintaining ongoing dialogue with departments about IT needs and opportunities
- Enabling and supporting better alignment with the IT strategies
- Helping to identify opportunities for shared services
- Providing context for IT budget requests and providing early input on statewide implications
- Supporting development of comprehensive business cases

5.1.2 Business and IT Partnership within the Departments

Effective IT budgeting requires active participation from multiple stakeholders across departments, including:

- Division/Program Leaders who understand overall business needs and priorities
- Administrative Services Officers (ASOs), especially in fiscal and administrative aspects
- Program Managers driving business initiatives and innovation
- Subject Matter Experts with deep understanding of program requirements
- Department IT leaders and staff who bridge technology and business needs.

The shift of IT staff focus toward business partnership ("shift-left" as described in chapter 5.3) strengthens this engagement by:

- Enabling ongoing technology guidance to business units throughout the year
- Allowing deeper understanding of business processes and programs' requirements

This integrated approach ensures technology investments are driven by business needs while leveraging opportunities for standardization and efficiency where appropriate.

5.1.3 IT Investment Assessment Framework to Support the Decision Making

The Working Group recommends employing a structured framework for prioritizing IT investments based on multiple factors, ensuring alignment with strategic objectives and optimal resource allocation. Final, jointly approved priority factors may include factors such as:

1. Alignment with state IT strategy and implementation of departmental IT strategy
2. Mandatory nature, e.g. compliance requirements or urgent unexpected circumstances
3. Business criticality, such as service improvements, efficiency gains and risk reductions. See also chapter 8.
4. Technical considerations such as modernization and interoperability
5. Implementation factors such as resource availability, complexity, dependencies and organizational change
6. Financial aspects such as total cost of ownership (TCO) and value (IT and business productivity gains and savings)

Prioritization would combine weighted scores across all factors, with strategic alignment and business impact typically higher than other categories, except if mandatory nature. Such a framework should evolve in support of IT budgeting and IT portfolio management, building on the strengths of current practices.

5.2 Integrated State-wide IT Management Platform

The state would greatly benefit from a comprehensive IT management platform to effectively oversee its technology portfolio, services, and resources. The current fragmented tools and processes make it difficult to maintain a holistic view of the state's IT assets, including automated tracking of consolidation opportunities. A unified platform can address this, and the platform the Working Group recommends encompasses three functional areas:

- **Strategic Portfolio Management** providing integrated modules for end-to-end portfolio management, including Demand Management for capturing and evaluating business needs, Portfolio Planning for strategic alignment and prioritization, Project Portfolio Management for executing initiatives, Resource Management for optimizing staff allocation, Application Portfolio Management for tracking software assets and dependencies, Benefits Management for tracking outcomes, and Performance Analytics for monitoring value delivery.
- **Service Management** forming the operational backbone by handling day-to-day IT service delivery and support. Key components being
  - Incident and Problem Management to resolve issues using a Configuration Management Database (CMDB).
  - Change and Release Management for managing changes integrated with CMDB to manage regression risks.

- Service Level Monitoring to ensure services meet predefined performance standards.
- Configuration Management to provide automated visibility into the state's IT (software and hardware) assets and their dependencies, regardless of whether they are in the cloud or on-premises.

- **Vendor and Contract Management** allows tracking of vendor performance, monitoring compliance with SLAs, managing contracts, and evaluating vendors based on standardized metrics.

Data Governance and Management would leverage a dedicated, best-of-breed data governance platform. This would be integrated with the main IT Management Platform, enabling bidirectional mapping between IT services, and IT assets, and their associated data assets. Automated synchronization would ensure that changes in either system are reflected across both platforms. When IT service configurations or data relationships evolve, the integrated solution maintains a single source of truth for the state's IT asset and data asset landscape.

5.3 ‘Shift Left’ of State Internal IT Workforce Roles and Focus

The evolution of IT delivery models (move to service and vendor ecosystem-based models, where business can more directly tap into these resources) asks for a fundamental shift in how IT staff work, think and what activities they focus on. The traditional focus on technical execution will increasingly evolve to business partnership and vendor management. This "shift left" philosophy moves IT professionals earlier in the IT value chain, from technical execution (on the right) to business enablement and vendor management (on the left). For reference see Figure 2 on page 21 for universally well recognized elements of an IT operating model.

This "shift left" in IT roles is important for risk mitigation as more services move to external service providers, and the State risks losing direct operational control and visibility into service delivery (performance, overall quality), and the State’s information assets.

5.3.1 Emphasis on Vendor Management and Business Partnerships

State IT professionals need to develop expertise in service procurement, contract negotiations, risk assessments, and compliance monitoring to maintain effective control over outsourced services and assets and to ensure vendors meet their obligations and operate in state's best interests. This transition requires new skills and a mindset focused also more and more on Business Partnership with the following key attributes:

- Strategic planning and governance
- Deeper business engagement and understanding (demand management)
- Business services innovation support (development, project management)
- Service level management and assurance (delivery)
- Vendor and contract management, from vetting and selection to ongoing performance management

Figure 1. illustrates the shift of the focus of internal IT staff, externally forced and/or internally planned.

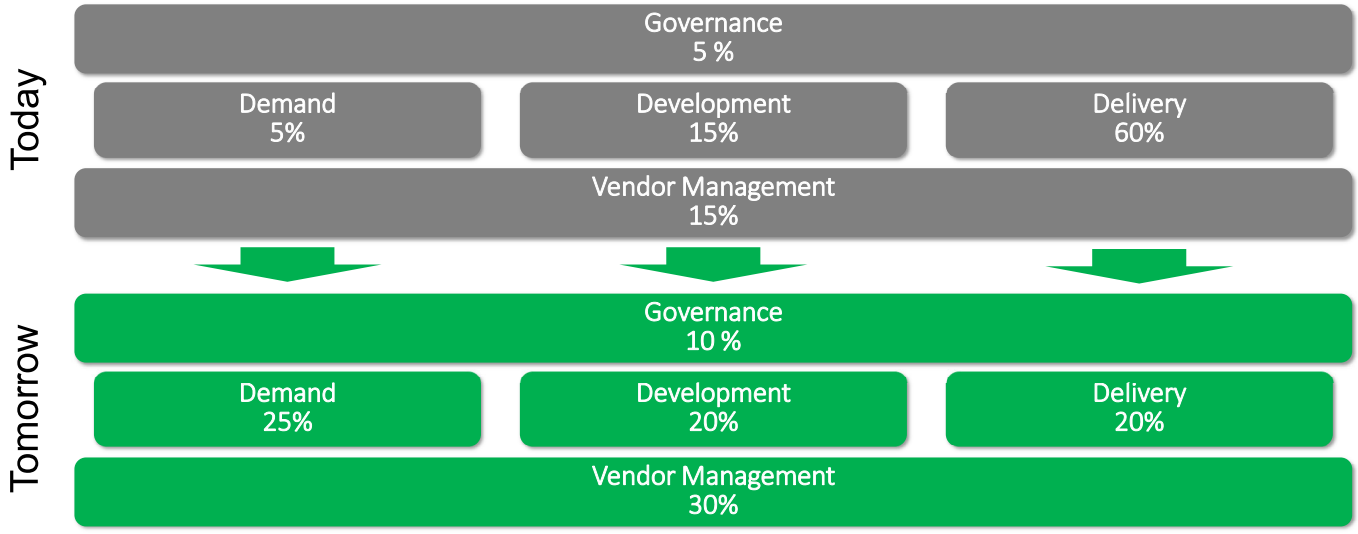

Figure 1. Indicative overview of shifting responsibilities of internal IT staff.

The state should start thinking about adopting roles such as IT Service Owner and/or IT Service Manager, tasked with the types of responsibilities listed in Table 6 (next page):

Area	Service Manager Key Responsibilities
Strategy and Governance	• Provide feedback on and participate in strategic matters, including, but not limited to: ○ Cloud service strategy ○ Sourcing strategy ○ Enterprise Architecture development
Demand Management	• Evaluate development requests with business, other Service Managers and ETS • Facilitate the creation of Service/Product Roadmaps • Change Advisory Board (CAB) meetings for change requests and budget reviews for major development proposals • Understand business needs, business process optimization and business service innovation • Quantify objectives, key metrics, and desired business outcomes • Predict and control spending related to IT services
Development Management	• Assist the Business in prioritizing and refining service feature backlogs • Lead of support Project Management for projects affecting services • Coordinate and assist management of vendors' activities
Delivery Management	• Ensure services are delivered to the agreed targets • Monitor and review service performance and achievements • Take corrective or improvement actions as needed • Collaborate with Service Management Office (SMO) on operational issues and process improvements • Track actual costs of delivering IT services against budgeted costs; manage variances • Report on achievements and satisfaction levels • Quantify the value IT services contribute to the business
Sourcing and Vendor Management	• Manage vendor relationships effectively • Support vendor vetting and selections • Manage contracts throughout their lifecycle • Assess vendor performance against targets and gather business feedback • Anticipate changes or events that could impact service delivery • Manage finances for services delivered

Table 6. Duties of IT Service Manager.

An example of business service with a large scope, requiring full-time attention and active management in all the above areas would be for example Enterprise Financial Management System (EFS). EFS Application (or this could be split into several business services, as fit for purpose) itself is the core business service, with its specific SLA(s), covering for example availability targets, such as 99.99% uptime requirement during business hours. This core service is supported by various cross-service enabling services (such as a security platform) and supporting services (such as end user Help-desk), all with their own specific SLAs or OLAs (Operational Level Agreements) as pertinent.

Depending on the scope of services, one Service Manager typically would manage several services, or in some cases just one single large service, such as EFS. Service Managers could report to Service Owners, who could be either from the business (core business services), or, in the case of ETS, branch / service area leaders, such as Security and Network (under Infrastructure and Platform category) services.

5.3.2 Flexible Approach

While the overall trend is toward greater business partnership and vendor management, departments will continue to require technical delivery capabilities, typically in areas specific to their mission or compliance requirements. This balanced approach has departments effectively managing vendors while retaining certain specialized technical knowledge critical to their core operations.

6 Five Year Plan – State Shared (Consolidated) IT Services

This section addresses the IT Consolidation Act 173 section (1), sub-section (D), that states:
"*(D) Recommendations to enable the office of enterprise technology services to provide expert support to all state agencies regarding information technology activities in order to meet the needs of the agencies and the public;*"

6.1 Adopting a Statewide Service and Product Oriented Operating Model

Directly related to "Shift Left" the state would greatly benefit from *transitioning from managing individual projects and applications to managing end-to-end IT services*, following a global trend in IT over the past 10-15 years, as organizations worldwide have moved from technology-centric to service-oriented operating models.

Historically, IT was often viewed as a back-end function focused on managing infrastructure and technology-centric tasks. However, advancements in digital transformation, cloud computing, DevOps, and Agile methodologies have encouraged organizations to adopt service-oriented approaches. These models prioritize delivering business value through flexible, customer-focused services rather than simply maintaining technological systems. For example, *many companies now embrace product-based or hybrid operating models that integrate IT and business functions*.

Frameworks like ITIL 4 and Enterprise Service Management (ESM) have expanded traditional IT Service Management (ITSM) principles beyond IT departments to encompass organization-wide service delivery. This shift emphasizes breaking down silos, optimizing workflows, and focusing on outcomes like customer satisfaction and operational efficiency.

Governments like the UK, Australia, and Singapore have successfully implemented service-oriented models that demonstrate how standardized service frameworks can improve delivery efficiency while reducing costs. Their experiences show that success requires sustained focus on service portfolio development, vendor management capabilities, and workforce development.

Based on experiences of similar organizations, transforming to a service/product-oriented operating model from application and project-focused can take 3-10 years, requiring sustained executive commitment and a gradual implementation approach that allows the organization to build capabilities, piece-by-piece, leveraging 'moments and periods that matter' (such as major system/service modernizations) while maintaining service quality.

Certain key components and concepts of Service and Product Oriented Operating Model include:
- Common service taxonomy across all delivery options (ETS, departments, vendors). For example: "Laptop PC Support" means the same thing whether delivered by ETS, a department, or vendor.
- Business-aligned service definitions and metrics. For example: Financial Management System is defined as a core business service, with 99.99% uptime requirement during business hours, supported by operational agreements (OLAs) for its enabling infrastructure, security, and support services.
- Standardized Service Definitions, Catalogs and SLAs. For example: All video conferencing services must meet the same up-time and performance requirements
- Consistent performance metrics for objective evaluation. For example: Help desk response times are measured the same way across all service providers
- Unified cost models for accurate comparisons.

Typical benefits include improved service planning and delivery, including, but not limited to:
- Evidence-based decisions for sourcing and delivery models. For example: Data shows moving to Microsoft Teams phone system will reduce costs by 40% versus current solution
- Reduced duplication of effort across departments. For example: Single identity management service instead of each department managing their own
- Improved service quality through standardized processes. For example: All change management follows the standard approval and testing requirements
- Enhanced cost control. For example: Clear per-user costs for each service enable comparable budgeting.

Implementation components include, but are not limited to:
- Service Portfolio Development and Vendor Management Framework
- Workforce development - Shift from technical execution to business partnership and vendor management
- Tools and technology - see Chapter 5.2.

6.2 Extending the Shared Infrastructure and Platform Services

As the state continues its continuous IT improvement journey, the extension of shared infrastructure and platform services must support both current operational needs and strategic modernization goals. Current budget allocations and planned initiatives reflect this balanced approach to infrastructure evolution.

6.2.1 Core Infrastructure Modernization

The state's core infrastructure requires modernization to meet growing demands for digital services while improving security and operational efficiency. Current facilities and systems face end-of-life issues, capacity constraints, and increasing operational costs. These efforts include:

Government Private Cloud (GPC) Evolution, including but not limited to Implementation of hybrid cloud capabilities, enhanced security and scalability and improved disaster recovery capabilities.

Microsoft 365 Platform Enhancement, with extended G5 licensing program, including but not limited to Teams voice services implementation, and other improved collaboration tools.

Data Center Consolidations, including but not limited to Kalanimoku decommissioning, and service migrations to modern facilities across several other data centers.

6.2.2 Network and Security Infrastructure

Reliable network connectivity and robust security controls are fundamental to state operations and digital service delivery. The current infrastructure requires updates to address capacity constraints, security threats, and emergency response needs. These efforts include:

Network Modernizations, including but not limited to NGN enhancement, enterprise network upgrades, broadband connectivity expansion and redundancy improvements.

Security Enhancements, including but not limited to comprehensive security program, advanced security controls implementation, enhanced monitoring capabilities, threat detection improvements, identity and access management modernization and aero trust architecture implementation.

Telecommunications Infrastructure, including but not limited to HIWIN system maintenance, radio systems reliability, inter-agency connectivity, and critical communications resilience.

6.3 Extending Shared Application Services (ERPs)

Shared enterprise applications form one backbone of state IT operations. The modernization and expansion of these systems, particularly the core ERP solutions, require careful planning and execution. The focus must extend beyond simple technology replacement to encompass process improvement and service enhancement. External consultants are currently supporting multiple studies to inform this modernization, including a comprehensive ERP strategy assessment, business process analysis, and vendor market evaluation. External consultants are currently supporting studies to inform this modernization, including a comprehensive ERP strategy assessment. The State's ERP strategy prioritizes:

- Accounting/Financial management modernization
- Budget/Treasury management modernization
- HR systems integration
- Procurement system enhancement
- Asset management consolidation

These priorities are being validated and refined through ongoing studies supported by consulting partners, ensuring alignment with best practices and the state's specific needs.

7 Recruiting and Retaining Critical State Government IT Talent

This section addresses the IT Consolidation Act 173 section (2), that states:
"*(2) Make recommendations to attract high-quality information technology professionals to the State, including the use of internships[T] and partnering with private providers and carriers, and assess the feasibility of exempting certain positions from the requirements of chapters 76 and 89, Hawaii Revised Statutes;"*

Addressing workforce development challenges requires coordinated actions across multiple state agencies, including DHRD as the state's lead HR agency, to craft potential solutions that address the complex statutory, organizational, and market-driven forces.

To improve entry-level recruitment, the ETS and state should collaborate with the lower and higher education community to expand funded government technology student internship and externship opportunities that provide hands-on experiences which transition into regular government employment. This follows successful private sector best practices to develop an on-going source of employees.

To optimize recruitment, promotion, and job-sharing opportunities, the state departments should be able to explore expanding temporary exempt technology positions that offer flexible compensation, flexible duties and responsibilities, flexible minimum qualifications and skill sets, and shorter, faster recruiting and hiring processes.

When specific conditions are met, certain state government positions can be exempted from civil service and collective bargaining under HRS §76 and §89. This has been a successful model for the Office of Enterprise Technology Services whose enabling Legislation (HRS Section §27-43) provides opportunities to create positions and hire its employees as temporary exempt, rather than permanent civil service employees. Building upon this more flexible approach, the state can adopt comprehensive strategies that work within existing legal frameworks while still meeting modern IT workforce needs.

A key recommendation is for the state to develop and implement a standardized workforce development program focused on training courses, job rotations, career pathways, internships, mentorships, and other job and skill building opportunities. Specific areas include:

1. Position Classification Framework
   - Creation of IT specialist positions under existing exemption authorities
   - Development of modernized position descriptions that reflect current technology roles
   - Establishment of career progression paths within the exempt service structure
   - Implementation of skills-based classification frameworks
2. Compensation Strategies Within Statutory Framework
   - Utilize compensation adjustments allowed under current rules
   - Implement skills-based pay differentials where authorized
   - Develop retention incentives within approved frameworks
   - Create professional development programs tied to compensation
3. Strategic Talent Development
   Internship programs, by leveraging existing statutory authority for:
   - Student internships under HRS §76-16(b)(3)
   - Technical training programs
   - Entry-level recruitment pipelines

8 Hosting of State’s Critical Information Systems and Consolidated Data

The reliability and security of the state's critical information systems and data are fundamental to effective government operations and public service delivery. As digital services become increasingly central to government operations, the hosting environments for these systems must meet stringent requirements for availability, security, and resilience. The ETS has maintained a strategic preference for major cloud platforms since 2012, recognizing that "evergreen computing" - where platforms continuously evolve their capabilities - enables state systems to benefit from ongoing security, performance, and functionality improvements with minimal operational overhead. This approach has proven effective as the state's computing needs have grown often too complex and security requirements too demanding for local, on-premise hosting environments.

8.1 Major Systems’ Business Criticality

This section addresses the new requirement in the IT Consolidation Act 173. Specifically, it addresses the Section 2, sub-section (3) (A) that states:
“*Inventory and categorize the business criticality of each major state information technology system or data set*

8.1.1 Major Information Technology System

Since 2019, ETS portfolio management practice and the CIO Annual Report have categorized the largest information systems of the state as “Major Information Systems”. Since 2021, ETS has listed these Major Information Systems as part of the abridged statewide IT portfolio as open data at https://ets.hawaii.gov/state-of-hawaii-it-portfolio-management/.

While major information systems are typically mission critical or business critical, what defines major systems at the state currently is their large scope, cost, complexity, or impact on an agency's operations. Key Aspects of the state’s ‘Major information Systems’ are:

- Classification Criteria: Based on size, scope, and investment level
- Scope: Large-scale regardless of criticality
- Risk Focus: Project management and investment risk
- Management Approach: Focus on program management and oversight controls

8.1.2 Major Data Set

Each major system is associated with a transactional database and in some cases a separate data warehouse. The business criticality rating of these data sets matches that of the major information systems they support.

8.1.3 Business Criticality Attributes

ETS has established criteria for determining the business criticality of the state’s major systems. Table 7. presents the attributes for determining the business criticality levels of information systems.

Attribute	Description
Impact on Essential Services	The extent to which a system supports essential government services – systems that directly support the state’s key responsibilities to citizens and are foundational to public safety, health, economic stability, and governance.
Business Continuity	This measures a system's importance in maintaining uninterrupted government services and its tolerance for downtime. It evaluates how disruptive a failure would be and the urgency with which a system must recover.
Legal/Regulatory Compliance	A system's role in ensuring compliance with laws and regulations. This attribute looks at whether a system supports legal requirements, such as data protection laws or critical governance mandates.
Financial Impact	A system's role in government financial processes, including budgeting, revenue generation, and financial risk. It also assesses the financial loss or disruption that would result if the system were to fail.
Data Sensitivity/Security	This attribute assesses the sensitivity of the data processed by a system and the security measures required to protect it. It evaluates whether the system handles sensitive or classified information and criticality of that.
Dependency by Other Systems	The degree to which other systems rely on this system to function properly. A system that supports multiple other critical services is more crucial, especially if its failure would lead to cascading effects on other systems.
User Base/Transaction Volume	This evaluates the number of users, and the volume of transactions processed by the system. Systems with a high volume of transactions or a large user base, especially if public-facing, tend to be more critical.
Replacement Cost/Complexity	This attribute measures how difficult and costly it would be to replace the system. Systems that are expensive to replace or involve complex migration efforts (e.g., legacy systems) are generally more critical, especially if alternatives are limited.

Table 7. System Business Criticality Attributes.

Since 2019, ETS portfolio management practice has adopted the following criticality levels for the state's information systems:

- Mission Critical
- Business Critical
- Business Operational
- Administrative

8.1.4 Business Criticality of Major State Information Systems

In the State of Hawaii Executive Branch application portfolio of current information systems, systems ranking high with a mix of business criticality attributes are considered major information systems. All major information systems of the state have been categorized as either Mission Critical or Business Critical. Table 8. displays the criticality rating of all State of Hawaii Executive Branch current major information systems, excluding those for the Office of Hawaiian Affairs, the Department of Education and University of Hawaii.

Department	System	Criticality
Accounting & General Services	DAGS - Statewide Payroll	Mission Critical
	DAGS - FAMIS	Mission Critical
	DAGS - Time and Leave Management	Business Critical
Attorney General	ATG-CPJAD Juvenile Justice information System (JJIS)	Mission Critical
	ATG-CSEA KEIKI Child Support Enforcement System (MFaaS)	Mission Critical
	ATG-HCJDC Criminal Justice Information System (CJIS)	Mission Critical
Business, Economic Dev & Tourism	Hawaii Statewide GIS ArcGIS Online - Main Platform	Mission Critical
Budget & Finance	BUF - ERS - Financial Management (Cloud)	Mission Critical
	BUF - ERS - Pension Administration System (Cloud)	Mission Critical
	BUF - EUTF - Health Benefits Administration System (BAS) (Modernized)	Business Critical
Commerce & Consumer Affairs	PVL-HO`ALA License Mgmt System	Mission Critical
	DCCA - PUC - Case & Document Management System (CDMS)	Business Critical
	DCR-Corrections Offendertrak	Mission Critical
Enterprise Technology Services	ETS - Adobe eSign	Mission Critical
	ETS-Office365	Mission Critical
Health	DOH Legacy Hawaii Immunization Registry (HIR)	Mission Critical
	DOH Women, Infant Child (WIC) Food vouchering system (HiWIC)	Mission Critical
	DOH Electronic Disease Surveillance System	Business Critical
	DOH-BHA Adult Mental Health Division - Electronic Medical Record (EMR)	Business Critical
	DOH-BHA Alcohol Drug Abuse Division - Management Information System	Business Critical
	DOH-BHA INSPIRE Case Management Solution for CAMHD & DDD	Business Critical
Human Resources Development	DAGS - PeopleSoft HRMS	Mission Critical
Human Services	DHS-BESSD HAWI (Hawaii Automated Welfare Information)	Mission Critical
	DHS-MQD AHCCCS HPMMIS	Mission Critical
	DHS-MQD Medicaid Application Portal	Mission Critical
	DHS-BESSD HANA (Hawaii Automated Network for Assistance Application)	Mission Critical
	DHS-MQD KOLEA (Kauhale On-Line Eligibility Assistance)	Mission Critical
	DHS-SSD CPSS (Child Protective Services System)	Mission Critical
	DHS-VRD Akamai (Vocational Rehabilitation Program core system)	Mission Critical
Labor and Industrial Relations	DLIR-DCD eCMS	Mission Critical
	DLIR-UI Legacy UI Management System	Mission Critical
Law Enforcement	LAW - Records Management System (RMS)	Business Critical
	LAW - Computer-Aided Dispatch (CAD)	Business Critical
Taxation	TAX - GenTax Integrated Tax Processing Application	Mission Critical
Transportation	DOT-HAR - Port Hawaii Information Management System (PHIMS)	Mission Critical
	DOT-HWY Legacy Financial System	Mission Critical
	DOT-AIR - AIRFMIS	Business Critical

Table 8. Business Criticality of Major State Information Systems.

8.2 Major Systems - Data Center Requirements

This section addresses the new requirement in the IT Consolidation Act 173. Specifically, it addresses the Section 2, sub-section (3) (A) that states:
"Determine the appropriate data center or hosting facility requirements based on the business criticality level of the system or data set"

8.2.1 Preference for Major Cloud Platforms

Starting from the 2012 state of Hawaii IT Strategic Plan, the state has expressed a strategic preference for cloud computing. One of the nine IT Strategies in the 2012 IT Strategic Plan was called "Migrate Services and Data to the Cloud" with the following specific objectives:

- All state services and data are available from anywhere via the Web
- Common cloud infrastructure simplifies maintenance
- Cloud infrastructure enables sharing of data and services

The state's IT Strategic Plan from 2019 to 2024 (established in 2019, minor update in 2021), continued the preference for cloud platforms with one of the seven stated Strategic Priorities being "Implement Dynamic and Sustainable IT Operations". This strategic priority was often described as a preference for "evergreen computing" – thus emphasizing the preference for cloud platforms that evolve and upgrade their services (for security, computing, storage etc.) independently from the applications hosted within these platforms. In this way the state's systems hosted on these "evergreen" platforms have a promise of longevity, scalability, business continuity, ease of maintenance, and up-to-date security – all with minimal changes and effort by the state's workforce or the state's implementation and maintenance vendors.

The state's long-term strategic preference for cloud computing is supported by industry standards, guidelines, and alliances such as:

- ISO/IEC 17789 (Cloud Computing Reference Architecture)
- ISO/IEC TR 22678:2019 Information technology — Cloud computing — Guidance for policy development
- NIST Special Publication 800-37 Revision 2: Risk Management Framework for Information Systems and Organizations
- Cloud Native Computing Foundation (CNCF)

8.2.2 Key Requirements for Hosting Services

The criteria in Table 9. have been defined as key requirements for hosting services for the state's Mission Critical and Business Critical major information systems.

Feature	Requirements
Global Availability	Ensuring that systems remain accessible during disruptions or failures by providing redundancy and failover capabilities across geographic locations.
Elasticity and Scalability	Capability for allowing systems to adjust resource levels dynamically or as planned, handling fluctuations in demand while maintaining performance.
Cost Structure	Optimization of resource costs based on usage patterns, balancing financial efficiency with performance needs, especially during peak and non-peak times.
Scope of Integrated Services	Breadth and capability of seamless and highly self-configurable services. For example, services for data analytics and AI/ML, supporting real-time or batch data processing to enhance decision-making.
Security and Compliance	Protection of data and systems through readily available cyber-security services. Certification for key cyber-security standards such as FedRAMP.
Automation and DevOps	Configurable services that streamline deployment, monitoring, and error management through automated processes, thus reducing manual work and minimizing system downtime.
Disaster Recovery and Redundancy	Services for backup, replication, and recovery mechanisms to quickly restore systems and minimize data loss in case of disruptions.
Management and Monitoring Tools	Services providing real-time or periodic tracking of system health and performance, enabling timely alerts and intervention for maintaining operational stability.

Table 9. Key requirements for the State's data center services.

8.2.3 Hosting Service Requirements Based on Criticality

Table 10. provides the state's guideline for assessing hosting environment features based on business criticality.

Feature	Mission Critical Systems	Business Critical Systems
Global Availability	Multi-region, automatic failover across regions. Zero tolerance for downtime, ensuring continuous operation.	Regional availability with automatic or manual failover. Minimal planned downtime is acceptable but with fast recovery.
Elasticity and Scalability	Immediate real-time scaling to meet demand spikes without human intervention. Zero degradation tolerated.	Proactive scaling with potential short delays in resource provisioning is acceptable. Minor performance degradation possible.
Cost Structure	Cost secondary to performance and availability. Reserved or dedicated infrastructure is often used.	Balanced cost and performance model with pay-as-you-go options to optimize cost efficiency during non-peak times.
Scope of Integrated Services	Require immediate, low-latency access to a full suite of advanced integrated services, including real-time data analytics, AI, and automation, with high reliability and redundancy to support critical, complex tasks without interruption.	Need highly available, reliable access to key integrated services such as near-real-time data processing, periodic analytics, and essential automation, supporting core functions with some tolerance for minor delays in non-peak periods.
Security and Compliance	Maximum security required with real-time threat detection and comprehensive encryption, multi-factor authentication (MFA), and strict regulatory compliance.	Strong security is needed, but periodic security checks and compliance with standard industry certifications are acceptable.
Automation and DevOps	Fully automated infrastructure management with zero-downtime continuous deployment pipelines. Systems are self-healing with automated rollback for errors.	Automated DevOps processes with proactive monitoring and scheduled updates. Occasional manual intervention is acceptable.
Disaster Recovery and Redundancy	Multi-region disaster recovery with short RTO/RPO, manual or automated failover.	
Management and Monitoring Tools	Proactive monitoring with automated alerts. Some manual intervention for incident resolution. SLAs are typically at 99.9% uptime.	

Table 10. Hosting Service Requirements Based on Criticality.

8.3 Consolidated data – Hosting Requirements

This section addresses the new requirement in the IT Consolidation Act 173. Specifically, it addresses the Section 2, sub-section (4) that states:

"*Ensure that all consolidated state information technology data is housed at a facility that: (A) Possesses the resiliency to perform concurrent maintenance or upgrades without down time; and (B) Has multiple power generation, fuel storage, power distribution paths, cooling systems, and heat exchange distribution paths that ensure that the data center can continue to operate even if one system fails when a utility power source is not available, without affecting the overall system.*"

8.3.1 Inventory of Consolidated Data

Consolidated Data is defined as: Data contained or used by the state's shared/consolidated information systems, provided by the Department of Accounting and General Services and the Office of Enterprise Services.

Table 11. identifies the state's consolidated data sets, where they are housed, and whether they are housed in appropriate data centers.

Department	Name	Production Hosting	Hosting Criteria (Ch. 8.2.2)
Accounting & General Services	DAGS - DataMart	Mainframe as a Cloud (Omaha)	Meets criteria
Accounting & General Services	DAGS - FAMIS	Mainframe as a Cloud (Omaha)	Meets criteria
Accounting & General Services	DAGS - Hawaii Information Portal	Local Commercial Data Center	Meets criteria
Accounting & General Services	DAGS - Statewide Payroll	Local Commercial Data Center	Meets criteria
Accounting & General Services	DAGS - Time and Leave Management	Local Commercial Data Center	Meets criteria
Accounting & General Services	DAGS - OIP - State Calendar	Major Cloud Platform	Meets criteria

Accounting & General Services	DAGS - SPO - HANDS - Hawaii Awards & Notices Distribution System	Major Cloud Platform	Meets criteria
Accounting & General Services	DAGS - SPO - Hawaii Compliance Express (HCE)	Major Cloud Platform	Meets criteria
Accounting & General Services	DAGS - SPO - HIePRO (eProcurement System)	Major Cloud Platform	Meets criteria
Accounting & General Services	DAGS - SPO - Public Auction	Major Cloud Platform	Meets criteria
Accounting & General Services	DAGS - SPO - WP - spo.hawaii.gov	Major Cloud Platform	Meets criteria
Business, Economic Dev & Tourism	Hawaii Statewide GIS ArcGIS Online - Main Platform	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS - Adobe Creative Cloud and Document Cloud	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS - Adobe eSign	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS - Azure Active Directory	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS - Enterprise Notification System (ENS)	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS - esign.hawaii.gov	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS - HawaiiPay Help Desk (hipservice.hawaii.gov)	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS - Laser Printer Forms	Mainframe as a Cloud (Omaha)	Meets criteria
Enterprise Technology Services	ETS - LeanIX	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS - Network Monitoring System	Local Commercial Data Center	Meets criteria
Enterprise Technology Services	ETS - portal.ehawaii.gov (HIC)	Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS - SiteImprove	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS - SSB - ITRS Helpdesk	Local Commercial Data Center	Meets criteria
Enterprise Technology Services	ETS - SSB - KOMAND Financial Management System	Mainframe as a Cloud (Omaha)	Meets criteria
Enterprise Technology Services	ETS - TSSB - ETS Hosted WordPress Sites	Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS - TSSB - OpenGov	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS-Azure AD B2C	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS-Office365	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	ETS-PingOne Advanced Identity Cloud	SaaS / Major Cloud Platform	Meets criteria
Enterprise Technology Services	HIC - App - Kala Payment Module	Major Cloud Platform	Meets criteria
Human Resources Development	DAGS - PeopleSoft HRMS	Local Commercial Data Center	Meets criteria

Table 11. Inventory of Consolidated Data.

9 Act 179 Progress Since Previous Report Submitted in December 2023

9.1 Transitioning from the 2023 Committee Structures

The Working Group transitions the structuring of planning activities away from the committee-based structure used in the 2023 report towards using the Service Taxonomy structure introduced in the 2023 report, combined with a more strategic, IT operating model driven structure with the five core domains presented in figure 2.

1. **Strategy and Governance** sets direction and ensures alignment with strategies and relevant policies
2. **Demand Management** identifies, prioritizes and selects IT investments together with the business
3. **Development Management** oversees change implementations
4. **Delivery Management** ensures reliable ongoing operations and service quality
5. **Sourcing and Vendor Management** optimizes vendor relationships and contracts.

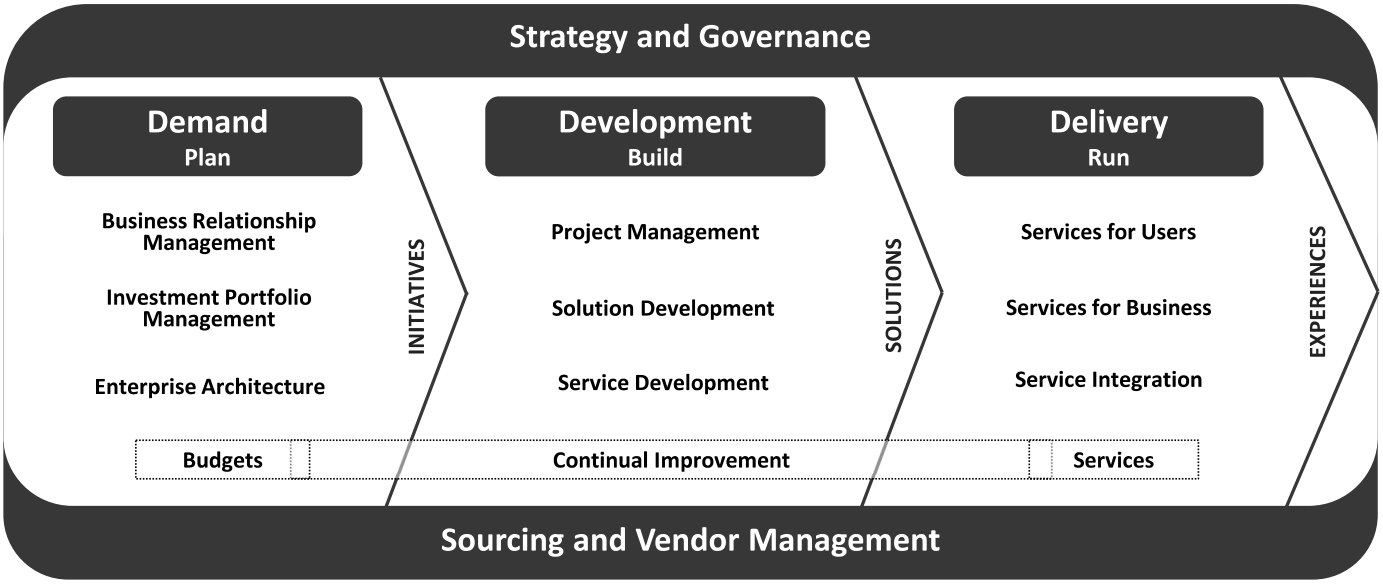

Figure 2. Generic Domains of an IT Operating Model.

The structure provides a simple and comprehensive view of IT and is highly standard and well-established, capturing the fundamental functions needed in any mature IT organization, regardless of industry or size.

- Follows a logical flow from strategy to execution that reflects how IT work happens in practice
- Aligns with widely accepted frameworks and methodologies such as ITIL and COBIT
- Is technology and methodology-agnostic

Each domain addresses a distinct, essential function that can't be eliminated without creating significant gaps in IT operations. These can be renamed or reorganized, but they still need to be performed.

9.2 2023 Report Key Recommendations Progress in 2024

Progresses in 2024 demonstrate commitments to service-centric improvements before potential organizational consolidations, focusing on extending and enhancing centralized services while maintaining departmental autonomies and business-IT expertise.

In 2024, the state continued its service-centric approach to IT improvement efforts, in part guided by Act 179 (SLH 2022) and its amendment Act 173 (SLH 2024). Progress was made across infrastructure modernization, enterprise applications, data governance, and workforce development initiatives, with emphasis on improving and extending centralized services shared with departments and agencies, rather than consolidating IT staff positions. This service-centric approach allows the state to optimize its IT services delivery while maintaining necessary departmental autonomy and subject matter expertise focused on delivering business value to the public. Table 12. provides a summary of each topic mentioned in chapter 3 of the 2023 report.

Recommendation	2024 Progress
Cost Benefit and Timing Analyses of Changes	• Completed cost benefit analysis of State Enterprise Financial Management System • Progressed state ERP Strategy and Roadmap study • Progressed business case study of new IT governance and management tool • Initiated business case analysis for DAGS/ETS ‘Center of Excellence’ for ERP support
Ensure Delivery Capabilities and Extend Current Shared Services	• Extended Microsoft 365 G5 license to 14,000+ state users (upgraded from O365 G3) • Enhanced IT Service Management system with helpdesk capabilities (knowledgebase and service catalog) • Upgraded the enterprise web application firewall services to a new version • Upgraded the electronic signature platform for Legislature and DOE • Enhanced network monitoring and data center operations • Improved production job effectiveness • Mobile device management solution implementation: Established automated device enrollment • Enterprise solution for managing company cell phones and policies • Improved capabilities of the statewide HIP Service Center
Continue Ongoing and Scheduled Systems Modernizations	• Progressed FAMIS replacement process • Supported mainframe system upgrades • Progressed extensions of HR system (HIP) - Annual Leave Summary, Law Enforcement and Corrections • Advanced EFS procurement preparation.
Develop and Offer New Shared Services	• New SMTP mail servers • Implemented cloud-based constituent relationship management system for the Governor's and Lt. Governor's offices • Enterprise Notification System for emergency communications • Progressed citizen identity infrastructure for single sign-on capabilities • Implemented new IT Service Management system for help desk tickets
Execute Infrastructure and Facilities Consolidation	• Improved network resilience of connection with all commercial Data Center used by state government. • Executed proof of concept for new Government Private Cloud (GPC) • Upgraded end-of-life State NGN equipment providing wide-area network connectivity • Enhanced radio systems reliability: • Completed IRS/SSAE audits for compliance
Analyze Common Enterprise Applications	• Completed application inventory for GPC • Analyzed various consolidation opportunities, hindered by occurring too late in the process currently → to budgeting stages. • Conducted Public Digital Services analysis • Advanced service catalog implementation
Limited Transitions of Staff from Departments to ETS	• Departments continued to explore the feasibility of migrating selected services, appropriate funding, and related positions to ETS.
Funding Model of Shared Services	• Continued with existing financial model • Analyzed current delivery costs.
Workforce Development and Training	• Delivered project management training • Enhanced security awareness training

Table 12. Progress of Key Recommendations of the 2023 Act 179 Report.

9.3 Progresses Related to the Recommendations of Act 179 Committees

Table 13. highlights key achievements for each 2023 Committee area. More details of the progress and status of each individual recommendation from each of the committees can be accessed in Appendix 1. of this report.

Committee	2024 Activities
Human Resources	• Limited activity. No specific staff positions have been designated for consolidation movement.
Strategic Steering and Governance Structures	• Completed establishment of State Data Task Force • Progressed on department IT strategy development • Advanced service catalog implementation. • Initiated State IT Strategy refresh supported by external consultancies • Made progress on IV&V vendor governance
Organizational Structures	• Progress made on implementing IT service catalog at ETS level. • Service-based orientation approach conceptualized, focusing on new roles such as Service/Product Owner and Manager.
Sourcing and Procurement	• Updated procurement standards and guidelines • Advanced work within procurement user groups, with SPO • Aloha eBUYS implementation, the official State of Hawai‘i e-Procurement system.

Project and Portfolio Management	• Advanced departmental IT project prioritization criteria • Improved project status reporting through IV&V • Progressed project closure and benefits tracking processes • Progressed standard project management tooling requirements • Progressed departmental IT strategies and projects' alignment to them
Vendor Management	• Updated procurement standards and guidelines, including vendor vetting and selection
Financial Model	• Continuing with existing financial model. No major changes implemented.
IT Network, Communications and Security	• Improved network resilience at data centers and state office buildings • Upgraded outdated data equipment in State Next Generation Network (NGN) • Enhanced reliability of Hawaii Wireless Interoperability Network (HIWIN) radio system • Strengthened security incident response capabilities • Enhanced endpoint protection and monitoring • Advanced zero trust architecture implementation
Facilities Strategy	• Evolve and rearchitect Government Public Cloud environment • Decommission x86 Environment and Power Environment • Mainframe decommissions
Workforce Development and Recruiting	• Developed training standards and material, including project management • DAGs recruiting selected positions exempt from chapters 76 & 89 after receiving legislative approvals in 2024. • ETS continues to hire temporary exempt positions under existing statutory provisions' piloting procedures with departments to shorten and streamline recruiting civil service positions • DHRD requesting funding to review and update civil service position classification. • Departments continue to use DLIR's paid internship opportunities.

Table 13. Progress Related to the Recommendations of Act 179 Committees.

9.4 ETS Activities 2024 Supporting the Goals Behind the IT Consolidation Acts

The 2023 IT consolidation report introduced the state IT Service Catalog in its chapter 5, with the following main service categories:

- Infrastructure & Platforms
- Shared Solutions (the types of enterprise solutions which all departments need, such as finance and HR)
- End User Services
- Line of Business Solutions (implementing individual departments' core business processes)
- Service Strategy and Governance (strategic planning, enterprise architecture, policy and standards development)

Table 14. summarizes ETS centralized service developments in 2024 towards the goals of state IT consolidation.

Service Category	Action
Infrastructure & Platforms	Microsoft 365 G5 licensing extended to 14000+ state users
Infrastructure & Platforms	New SMTP mail servers implementation
Infrastructure & Platforms	Government Private Cloud (GPC) capabilities modernization
Infrastructure & Platforms	Network resilience improvements to commercial data center
Infrastructure & Platforms	Improved production job effectiveness
Infrastructure & Platforms	Enhanced state network monitoring and data center
Infrastructure & Platforms	Completed IRS/SSAE audits
Infrastructure & Platforms	Transitioned to M365 G5
Infrastructure & Platforms	Implemented GPC POC
Infrastructure & Platforms	Upgraded NGN data equipment
Infrastructure & Platforms	Enhanced reliability of HIWIN radio system
End User Services	Enhanced IT Service Management system with helpdesk
End User Services	Mobile device management solution for state devices
End User Services	Implemented citizen identity infrastructure
End User Services	Established mobile device management
Infrastructure & Platforms	Cybersecurity education program with new coordinator position
Shared Solutions	Adobe eSign service enhancements
Shared Solutions	Enterprise Notification System for emergency communications
Shared Solutions	Cloud-based CRM for Governor's office
Shared Solutions	Maintained HIP system
Shared Solutions	Advanced EFS procurement
Strategy and Governance	State Data Management capability development

Strategy and Governance	Refined IT portfolio model
Strategy and Governance	Established IT standards
Strategy and Governance	Advanced service catalog
Strategy and Governance	Created project management practices
Strategy and Governance	Developed Technology Awards Program
Strategy and Governance	Established Data Task Force
Strategy and Governance	Developed strategy framework
Strategy and Governance	Developed policies and standards
Strategy and Governance	Coordinated IT consolidation (planning, reporting)

Table 14. ETS Activities in 2024 Contributing to the Goals of Consolidation.

9.5 ETS Planned Initiatives Supporting the Goals Behind the IT Consolidation Acts

Looking ahead to 2025-2026, ETS has outlined several key infrastructure modernizations. These include implementation of Government Private Cloud 3.0 with hybrid capabilities, comprehensive network modernization and security controls enhancement, and Microsoft 365 service expansion including Teams voice capabilities. Critical infrastructure updates also include data center consolidation efforts and network resilience improvements.

Data and analytics capabilities should see significant enhancement through the establishment of a new Data/AI Office, implementing AI governance frameworks and expanding analytics services across the state. Strategic and governance initiatives include implementing a new service taxonomy, completing IT strategies, and enhancing project management capabilities.

In shared applications, key projects include the EFS vendor selection, Adobe services enhancement, and expansion of the Service Center capabilities. End user services will focus on completing department-wide device management implementation and further enhancing the identity infrastructure. Table 15. summarizes planned key changes to ETS services in 2025 and beyond.

Category	Planned Initiative	Description	Timeline
Infrastructure & Platforms	Virtual Private Cloud Modernization	Implement new GPC 3.0 with hybrid cloud capabilities	Q2-Q4 2025
Infrastructure & Platforms	Network Modernization	Comprehensive upgrade of state network infrastructure	Q1-Q4 2025
Infrastructure & Platforms	Teams Calling	Teams voice services	Q2 2025
Infrastructure & Platforms	Service Management Platform	New comprehensive service management system	Q3 2025
Infrastructure & Platforms	Enhanced Cybersecurity	Implementation of advanced security controls and monitoring	Q1-Q4 2025
Infrastructure & Platforms	Data Center Decommission	Support data center decommission	2025
Infrastructure & Platforms	M365 Expansion	Continue M365 adoption and	2025-2026
Infrastructure & Platforms	Network Upgrades	Complete network upgrades and wireless deployment	2025
Infrastructure & Platforms	Hardware Updates	Upgrade hardware systems	2026
Strategy and Governance	Data/AI Office Implementation	Establish state data office and implement AI governance	Q1-Q2 2025
Strategy and Governance	Service Taxonomy and catalogs Implementation	Implement new service taxonomy and service catalogs across the state	2025, Q2 2026
Strategy and Governance	IT Strategy Completion	Complete departmental IT strategies	2025-2026
Strategy and Governance	Project Governance	Enhance PMO capabilities and project governance	2025-2026
Strategy and Governance	AI Capabilities Enhancement	Expand AI capabilities and enhance data sharing	2026
Shared Solutions	Adobe Services Enhancement	Expand eSign capabilities and implement new features	Q2 2025
Shared Solutions	Data Analytics Platform	Enhanced data analytics and AI services	Q3 2025
Shared Solutions	EFS Implementation	Complete EFS vendor selection	2025
Shared Solutions	Service Center Expansion	Expand Service Center capabilities	2025-2026
End User Services	Device Management Phase 2	Complete department-wide device management	Q4 2025
End User Services	Identity Infrastructure Enhancement	Further enhance identity infrastructure	2025-2026

Table 15. ETS Planned Activities Contributing to the IT Consolidation Goals.